

# Thyristors and AC switches

from SCRs and TRIACS to innovative devices



**USE IN LIFE SUPPORT DEVICES OR SYSTEMS MUST BE EXPRESSLY AUTHORIZED.**

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1.Life support devices or systems are those which (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided with the product, can be reasonably expected to result in significant injury to the user.

2.A critical component is any component of a life support device or system whose failure to perform can reasonably be expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

# DESIGNER'S SELECTION GUIDE

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# PRODUCT REFERENCES

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The intention of this selector guide is to provide the latest information about STMicroelectronics Thyristors families. For fast and easy selection, each product family has been organized by current and voltage.

### SCRs

TSxxyy-zzz		
<b>xx</b>	Forward current	4 = 4 Amps
<b>yy</b>	Sensitivity	20 = 0.2 mA
<b>zzz</b>	Blocking voltage	600 = 600 Volts
<b>Package</b>	TSxxxB TSxxxH TSxxxT	DPAK IPAK TO-220AB

TNxxyy-zzz		
<b>xx</b>	Forward current	8 = 8 Amps 12 = 12 Amps
<b>yy</b>	Sensitivity	05 = 5 mA 25 = 25 mA
<b>zzz</b>	Blocking voltage	600 = 600 Volts
<b>Package</b>	TNxxxB TNxxxG TNxxxH	DPAK D <sup>2</sup> PAK IPAK

XLxxyy		
<b>L</b>	Application	Light control
<b>xx</b>	Current	08 = 0.8A
<b>yy</b>	Voltage	40 = 400V

TYNxxyy		
<b>xx</b>	Blocking voltage	6 = 600 Volts 10 = 1000 Volts
<b>yyy</b>	Forward current	10 = 10 Amps
<b>Package</b>		TO-220AB

BTWxx-yy		
<b>xx</b>	Forward current codification	
<b>yy</b>	Blocking voltage	600 = 600 Volts
<b>Package</b>	BTW67 BTW68/69	RD91 (insulated) TOP3 insulated

### P01xxx / X0xxx

P	01	02	M	A	BLANK	PACKING SUFFIX			
Function	Current	Sensitivity	Voltage	Package		Tube	Bulk	Ammopack	Tape & Reel
<b>P: SCR</b>	006: 0.8A	02 = 200μA	B : 200 Volts	A : TO-92			1AA3 or 1BA2	2AL3 or 2BA2	5AL3 or 5BL2
<b>X: SCR</b>	01: 0.8A	05 = 50μA	D : 400 Volts	F : TO202-3		0AA2	1AA2		
	02: 1.25A	11 = 25μA	M : 600 Volts	L : SOT-23					5AA4
	04: 4A	18 = 5μA	S : 700 Volts	N : SOT-223					5AA4 or 5BA4
			N : 800 Volts						

### DIACs

DBx/SMDBx		
<b>xx</b>	Breakover voltage	3 = 32 Volts 4 = 40 Volts
<b>Package</b>	DBx SMDBx	DO-35 SOT-23

# PRODUCT REFERENCES

## Index

### TRIACs

Txxyy-zzz / TxxyyH-zzz / TxxyyQ-zzz		
<b>xx</b>	Forward Current	8 = 8 Amps
<b>yy</b>	Sensitivity	20 = 20 mA
<b>H</b>	High junction temperature	
<b>Q</b>	Four quadrants	
<b>zzz</b>	Blocking Voltage	600 = 600 Volts
<b>Package</b>	B G H T W	DPAK D <sup>2</sup> PAK IPAK TO-220AB ISOWATT220AB

Txxyy-zzzW		
<b>xx</b>	Forward Current	8 = 8 Amps
<b>yy</b>	Sensitivity	20 = 20 mA
<b>zzz</b>	Blocking Voltage	600 = 600 Volts
<b>W</b>	Package	ISOWATT220AB

BTA/BTBxx-yyy		
<b>xx</b>	Forward current	8 = 8 Amps
<b>yyy</b>	Blocking voltage	600 = 600 Volts
<b>Package</b>	BTA: insulated BTB: Non insulated	TO-220AB RD91(Insulated) TOP3 Insulated

BTA/BTBxx-yyy			
<b>BTA/Bxx-yyy</b>	<b>B</b>	Standard	Igt = 50 mA
	<b>BW</b>	Snubberless™	Igt = 50 mA
	<b>C</b>	Sensitive	Igt = 25 mA
	<b>CW</b>	Snubberless™	Igt = 35 mA
	<b>SW</b>	Logic Level	Igt = 10 mA
	<b>TW</b>	Logic Level	Igt = 5 mA

BTBxx-yyzL		
<b>xx</b>	Forward current	04 = 4 Amps
<b>yy</b>	Blocking voltage	600 = 600 Volts
<b>z</b>	Sensitivity	S = 10mA
<b>L</b>	Application	Lighting

Z0xxx									
<b>Z</b>	<b>01</b>	<b>03</b>	<b>M</b>	<b>A</b>	<b>BLANK</b>	<b>PACKING SUFFIX</b>			
<b>Function</b>	<b>Current</b>	<b>Sensitivity</b>	<b>Voltage</b>	<b>Package</b>		<b>Tube</b>	<b>Bulk</b>	<b>Ammopack</b>	<b>Tape &amp; Reel</b>
<b>Z: Triacs</b>	006: Up to 0.8A	03: 3/5 mA	D: 400 Volts	A: TO-92			1AA2 or 1BA2	2AL2 or 2BL2	5AL2 or 5BL2
	01: Up to 1A	07: 5/7 mA	M: 600 Volts	F: TO202-3		0AA2	1AA2		
	04: 4A	09: 10 mA	S: 700 Volts	N: SOT-223					5AA4

# PRODUCT REFERENCES

## Index

### IGNITORS

FLC	0	1	-	200	H
Function	Power	Gate		Voltage	Package
Fire Lighter Circuit	0: 190A / 10 ms 1: 240A / 10 ms 2: 90A / 10 ms	0 or 1: No external gate		Stand off-voltage	A: TO-92 B: DPAK H: IPAK

LIC	01	-	215	B
Function	Power		Voltage	Package
Light Ignitor Circuit	01: 50A / 10 ms		Break-over voltage	H: IPAK B: DPAK

TN22	-	1500	H
Function		Voltage	Package
Electronic Starter		1500: 1500 Volts	H: IPAK

### AC SWITCHES

ACS™	4	02	-	5S	B4
Function	Number of Switch	I <sub>T(RMS)</sub> by Switch		Voltage-Sensitivity	Package
AC Switch	1: 1 3: 3 4: 4	02: 0.2A 08: 0.8A 10: 1A 20: 2A		5: 500 Volts S: Sensitivity 10mA T: Sensitivity 5mA	A: TO-92 N: SOT-223 B4: DIP-20 T1: SO-8

ACST	6	-	7S	T
Function	Number of Switch		Voltage-Sensitivity	Package
AC Switch	4: 4A 6: 6A 8: 8A		7: 700 Volts S: Sensitivity 10mA C: Sensitivity 35mA	T: TO-220AB FP: TO-220FPAB

### INRUSH CURRENT LIMITERS

STIL	04	-	P5
Function	Output Current		Package
Inrush Current Limiter	02: 2A 04: 4A		Pentawatt HV2

### CURRENT LIMITED TERMINATION

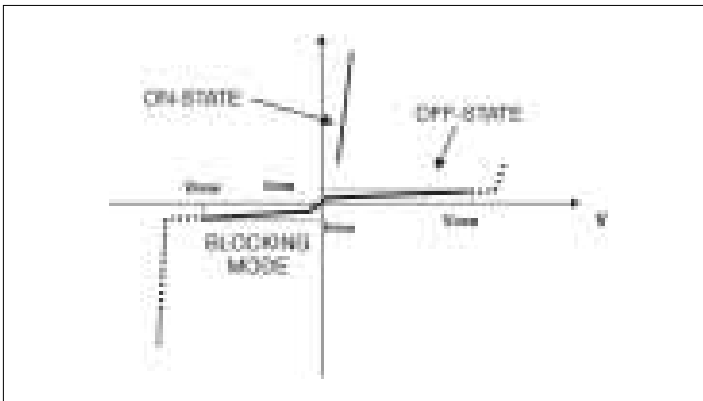
CLT	3	-	4	B	T6
Function	Limited Current Value		Number of Channels	EMC Level	Package
Current Limited Termination	3: 3mA		4:4 Channels	B: 1000 V	T6:TSSOP20

# SCRs

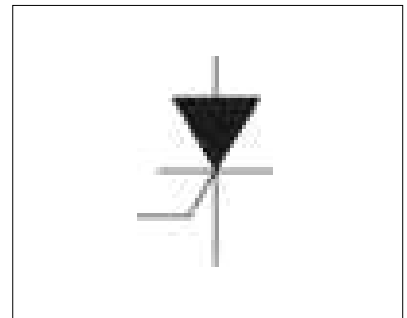
## Functionality & Main Applications

Based on an unidirectional structure, SCRs (or Silicon Controlled Rectifiers) are used as switching devices in pulse mode or half-wave bridge circuits - Available in standard or sensitive gate drive configurations with a large range of through-hole and surface mount packages, they fit a large number of applications.

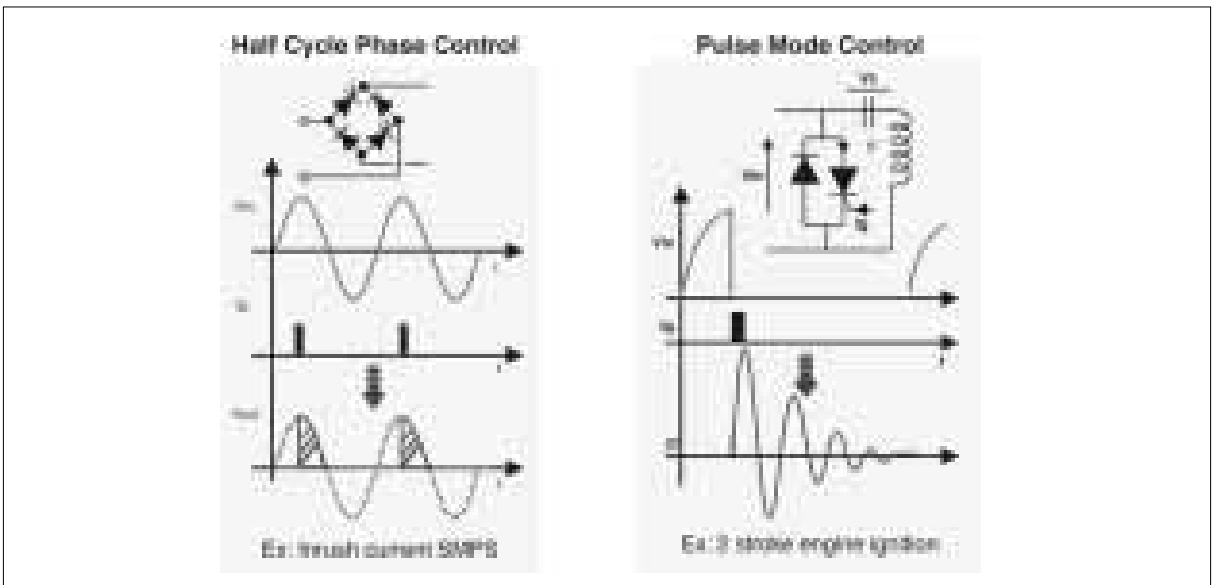
### Typical I/V Characteristic of a SCR



### SCR Symbol



### DIFFERENT MODES OF CONTROL



### MAIN APPLICATIONS

- Static relays
- Power supplies
- Electrical power tools
- Ground Fault interruptors
- Smoke and Alarm detectors
- Two stroke engine ignition
- Small Kitchen aids, blenders, mixers...
- Housecare appliances irons, electric razors,...
- Battery voltage regulation
- Industrial motor control
- Welding equipment
- Electronic neon starter

# SCRs

## Packages

### SMD PACKAGES



SOT-23



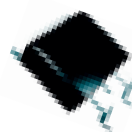
SOT-223



IPAK



DPAK



D²PAK

### INSERTION PACKAGES



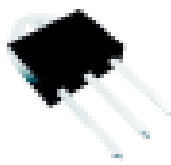
TO-92



TO202-3



TO-220AB



TOP3



RD 91



ISOTOP



# SCRs

## Sensitive Gate SCRs

Sensitive SCRs are easy to drive thanks to their very low gate current triggering. They are suitable for low power applications where low consumption is mandatory, such as ground fault interruptors, engine ignition, pilot circuit in solid state relays, smoke and alarm detectors...

$I_{T(RMS)}$	$V_{RRM}$ $V_{DRM}$	Part Number	$I_{TSM}^{* (1)}$	$I_{GT}^{*}$	$I_H^{*}$	$V_{TM}^{*} @$	$I_{TM}$	$dV/dt \text{ min.}$ @ $T_j \text{ max}$	Package
(V)	(A)	( $\mu A$ )	(mA)	(V)	(A)	(V/ $\mu s$ )			
<b>0.25 Amps</b>	200	P0102BL	6	200	5	1.7	0.4	200	SOT-23
<b>0.8 Amps</b>	400	P0102DA	7	200	5	1.95	1.6	75	TO-92
		P0102DN	7	200	5	1.95	1.6	75	SOT-223
		P0111DA	7	25	5	1.95	1.6	80	TO-92
		P0111DN	7	25	5	1.95	1.6	80	SOT-223
		P0118DA	7	5	5	1.95	1.6	75	TO-92
		P0118DN	7	5	5	1.95	1.6	75	SOT-223
	600	XL0840 (2)	7	200	5	1.95	1.6	75	TO-92
		P0102MA	7	200	5	1.95	1.6	75	TO-92
		P0102MN	7	200	5	1.95	1.6	75	SOT-223
		P0111MA	7	25	5	1.95	1.6	80	TO-92
		P0111MN	7	25	5	1.95	1.6	80	SOT-223
		P0118MA	7	5	5	1.95	1.6	75	TO-92
		P0118MN	7	5	5	1.95	1.6	75	SOT-223
		X00602MA	9	200	5	1.35	1	25	TO-92
	800	X0202MA	22.5	200	5	1.45	2.5	10	TO-92
		X0202MN	22.5	200	5	1.45	2.5	15	SOT-223
		X0205MA	22.5	50	5	1.45	2.5	15	TO-92
		X0205MN	22.5	50	5	1.45	2.5	15	SOT-223
		X0202NA	22.5	200	5	1.45	2.5	10	TO-92
		X0202NN	22.5	200	5	1.45	2.5	10	SOT-223
		X0205NA	22.5	50	5	1.45	2.5	15	TO-92
		X0205NN	22.5	50	5	1.45	2.5	15	SOT-223
<b>1.25 Amps</b>	600	TS420-600B	30	200	5	1.6	8	5	DPAK
		TS420-600H	30	200	5	1.6	8	5	IPAK
		TS420-600T	30	200	5	1.6	8	5	TO-220AB
		X0402MF	30	200	5	1.8	8	10	TO202-3
		X0405MF	30	50	5	1.8	8	15	TO202-3
	700	TS420-700B	30	200	5	1.6	8	5	DPAK
		TS420-700H	30	200	5	1.6	8	5	IPAK
		TS420-700T	30	200	5	1.6	8	5	TO-220AB
	800	X0402NF	30	200	5	1.8	8	10	TO202-3
		X0405NF	30	50	5	1.8	8	15	TO202-3
<b>4 Amps</b>	600	TS820-600B	70	200	5	1.6	16	5	DPAK
		TS820-600H	70	200	5	1.6	16	5	IPAK
		TS820-600T	70	200	5	1.6	16	5	TO-220AB
	700	TS820-700B	70	200	5	1.6	16	5	DPAK
		TS820-700H	70	200	5	1.6	16	5	IPAK
	800	TS820-700T	70	200	5	1.6	16	5	TO-220AB
<b>8 Amps</b>	600	TS1220-600B	110	200	5	1.6	24	5	DPAK
		TS1220-600H	110	200	5	1.6	24	5	IPAK
		TS1220-700B	110	200	5	1.6	24	5	DPAK
	700	TS1220-700B	110	200	5	1.6	24	5	DPAK
		TS1220-700H	110	200	5	1.6	24	5	IPAK
	800	TS1220-700H	110	200	5	1.6	24	5	IPAK

(\*)  $I_{TSM}$ ,  $I_{GT}$ ,  $I_H$  and  $V_{TM}$  specified at  $T_j = 25^\circ C$

(1)  $t_p = 10 \text{ ms}$

(2) Unidirectional voltage only

Note 1: B suffix = 200V, D suffix = 400V, M suffix = 600V, N suffix = 800V

Note 2: 2500V<sub>RMS</sub> insulation voltage - UL recognized file # E81734

NEW PRODUCT

# SCRs

## Standard SCRs (Tj max = 125°C)

The standard SCRs are ideal for general purpose switching applications like battery voltage regulation, crowbar protection in power supplies, motor control, welding equipment...

I <sub>T(RMS)</sub>	V <sub>RRM</sub> V <sub>DRM</sub>		I <sub>TSM</sub> * (1)	I <sub>GT</sub> *	I <sub>H</sub> *	V <sub>TM</sub> * @	I <sub>TM</sub>	dV/dt min. @ T <sub>j</sub> max	
(A)	(V)	Part Number	(A)	max (mA)	max (mA)	(V)	(A)	(V/μs)	Package
8 Amps	600	TN805-600B	70	5	25	1.6	16	50	DPAK
		TN805-600H	70	5	25	1.6	16	50	IPAK
		TN815-600B	70	15	40	1.6	16	150	DPAK
		TN815-600H	70	15	40	1.6	16	150	IPAK
		TYN608	95	15	30	1.6	16	150	TO-220AB
	800	TN805-800B	70	5	20	1.6	16	50	DPAK
		TN805-800H	70	5	20	1.6	16	50	IPAK
		TN815-800B	70	15	40	1.6	16	150	DPAK
		TN815-800H	70	15	40	1.6	16	150	IPAK
		TYN808	95	15	30	1.6	16	150	TO-220AB
1000	TYN1008	95	15	30	1.6	16	150	TO-220AB	
12 Amps	600	TN1215-600B	110	15	40	1.6	24	200	DPAK
		TN1215-600G	140	15	30	1.6	24	200	D <sup>2</sup> PAK
		TN1215-600H	110	15	40	1.6	24	200	IPAK
		TYN612	140	15	30	1.6	24	200	TO-220AB
		TYN612T	140	5	15	1.6	24	40	TO-220AB
	800	TN1215-800B	110	15	40	1.6	24	200	DPAK
		TN1215-800G	140	15	30	1.6	24	200	D <sup>2</sup> PAK
		TN1215-800H	110	15	40	1.6	24	200	IPAK
		TYN812	140	15	30	1.6	24	200	TO-220AB
		TYN812T	140	5	15	1.6	24	40	TO-220AB
	1000	TN1215-1000G	140	15	30	1.6	24	200	D <sup>2</sup> PAK
		TYN1012	140	15	30	1.6	24	200	TO-220AB
TYN1012T		140	5	15	1.6	24	40	TO-220AB	
16 Amps	600	TN1625-600G	190	25	40	1.6	32	500	D <sup>2</sup> PAK
		TYN616	190	25	40	1.6	32	500	TO-220AB
	800	TN1625-800G	190	25	40	1.6	32	500	D <sup>2</sup> PAK
		TYN816	190	25	40	1.6	32	500	TO-220AB
	1000	TN1625-1000G	190	25	40	1.6	32	500	D <sup>2</sup> PAK
		TYN1016	190	25	40	1.6	32	500	TO-220AB
25 Amps	600	TN2540-600G	300	40	50	1.6	50	500	D <sup>2</sup> PAK
		TYN625	300	40	50	1.6	50	500	TO-220AB
	800	TN2540-800G	300	40	50	1.6	50	500	D <sup>2</sup> PAK
		TYN825	300	40	50	1.6	50	500	TO-220AB
	1000	TN2540-1000G	300	40	50	1.6	50	5	D <sup>2</sup> PAK
		TYN1025	300	40	50	1.6	50	5	TO-220AB
40 Amps	600	TN4035-600G	460	35	75	1.6	80	1000	D <sup>2</sup> PAK
		TYN640	460	35	75	1.6	80	1000	TO-220AB
	800	TN4035-800G	460	35	75	1.6	80	1000	D <sup>2</sup> PAK
		TYN840	460	35	75	1.6	80	1000	TO-220AB
	1000	TYN1040	460	35	75	1.6	80	1000	TO-220AB
50 Amps	600	BTW67-600	580	80	150	1.9	100	500	RD91
		BTW69-600	580	80	150	1.9	100	500	TOP3
	800	BTW67-800	580	80	150	1.9	100	500	RD91
		BTW69-800	580	80	150	1.9	100	500	TOP3
	1200	BTW67-1200	580	80	150	1.9	100	500	RD91
		BTW67-1200	580	80	150	1.9	100	500	TOP3

(\*) ITSM, IGT, IH and VTM specified at Tj = 25°C

(1) tp = 10 ms

Note 1: 2500 V<sub>RMS</sub> insulation voltage - UL recognized file # E81734

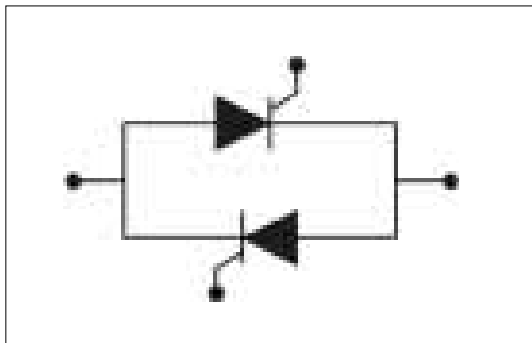
NEW PRODUCT

# SCRs

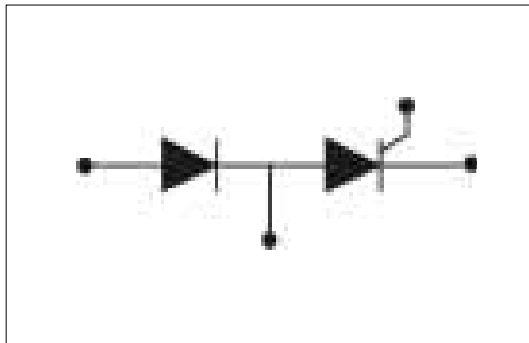
## SCR Modules

SCR Modules in ISOTOP® packages have been developed for high power applications. Thanks to its optimized thermal dissipation capability and compactness, the ISOTOP package offers a high power / volume ratio. Available in SCR+diode or back-to-back SCR configuration, they can be used respectively in full bridge schemes or as an ON/OFF switch. These modules can be found in applications like welding equipment, the input controlled bridge in power supplies, thermal controls and general purpose industrial equipment.

**MSSxxx back-to-back configuration**



**MDSxxx SCR + diode configuration**



$I_T(RMS)$	$V_{RRM}$ $V_{DRM}$	Part Number	$I_{TSM}^{* (1)}$	$I_{GT}^{max *}$	$I_H^{max *}$	$V_{TM}^{* @}$	$I_{TM}$	$dV/dt \text{ min.}$ @ $T_j \text{ max}$	Package
	(V)		(A)	(mA)	(mA)	(V)	(A)	(V/ $\mu s$ )	
50 Amps	800	MDS35-800	400	50	80	1.7	80	1000	ISOTOP
	1200	MDS35-1200	400	50	80	1.7	80	1000	ISOTOP
55 Amps	800	MSS40-800	400 (2)	50	80	1.7	80	1000	ISOTOP
	1200	MSS40-1200	400 (2)	50	80	1.7	80	1000	ISOTOP
70 Amps	800	MDS50-800	600	50	80	1.75	110	1000	ISOTOP
		MSS50-800	600 (2)	50	80	1.7	100	1000	ISOTOP
	1200	MDS50-1200	600	50	80	1.75	110	1000	ISOTOP
		MSS50-1200	600 (2)	50	80	1.7	100	1000	ISOTOP
85 Amps	800	MDS80-800	700	100	80	1.75	170	1000	ISOTOP
	1200	MDS80-1200	700	100	80	1.75	170	1000	ISOTOP

(\*)  $I_{TSM}$ ,  $I_{GT}$ ,  $I_H$  and  $V_{TM}$  specified at  $T_j = 25^\circ C$

(1)  $t_p = 10 \text{ ms}$  unless otherwise specified

(2)  $t_p = 20 \text{ ms}$

Note 1: 2500V<sub>RMS</sub> insulation voltage - UL Recognized file # E81734

MSS: two SCRs in back to back configuration

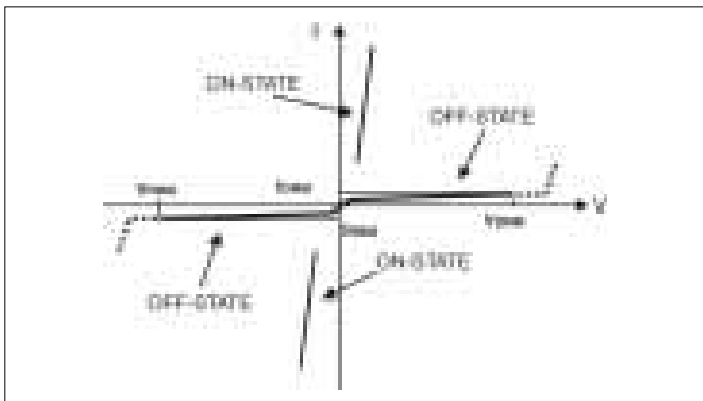
MDS: one SCR and one diode configuration

# TRIACs

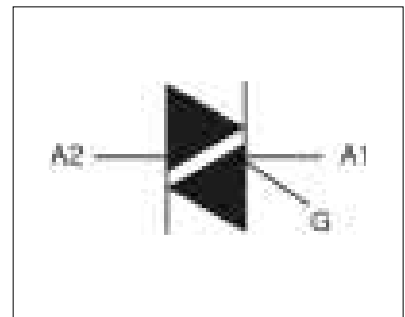
## Functionality & Main Applications

Thanks to their bidirectional structure, Triacs are useful in controlling full-wave AC applications. They can be used as an ON/OFF switch, replacing efficiently electro-mechanical relays (providing high degree of flexibility through electronic control, and superior reliability). They are also capable to control power level through AC loads, thanks to a simple phase control circuit. Available in general purpose standard configurations, high commutation performance series with ST Snubberless™ Technology, or high temperature versions for use in harsh environment, they fit any AC applications requiring precise control.

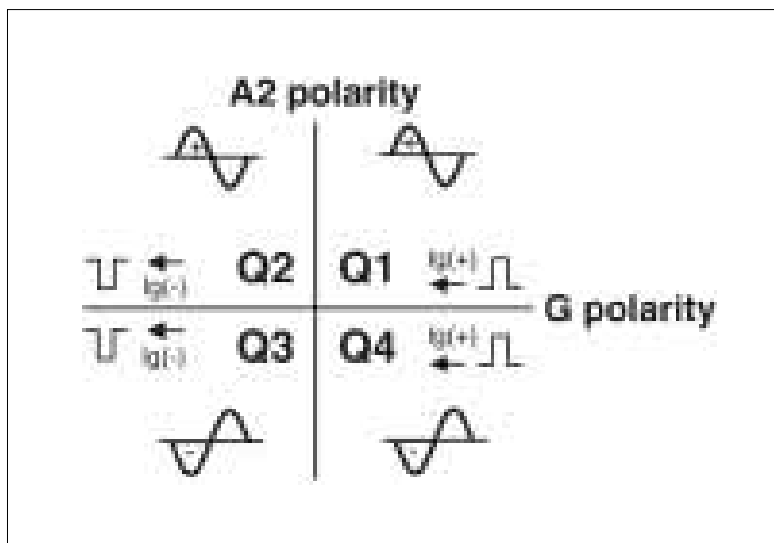
Typical I/V Characteristic of a Triac



Triac Symbol



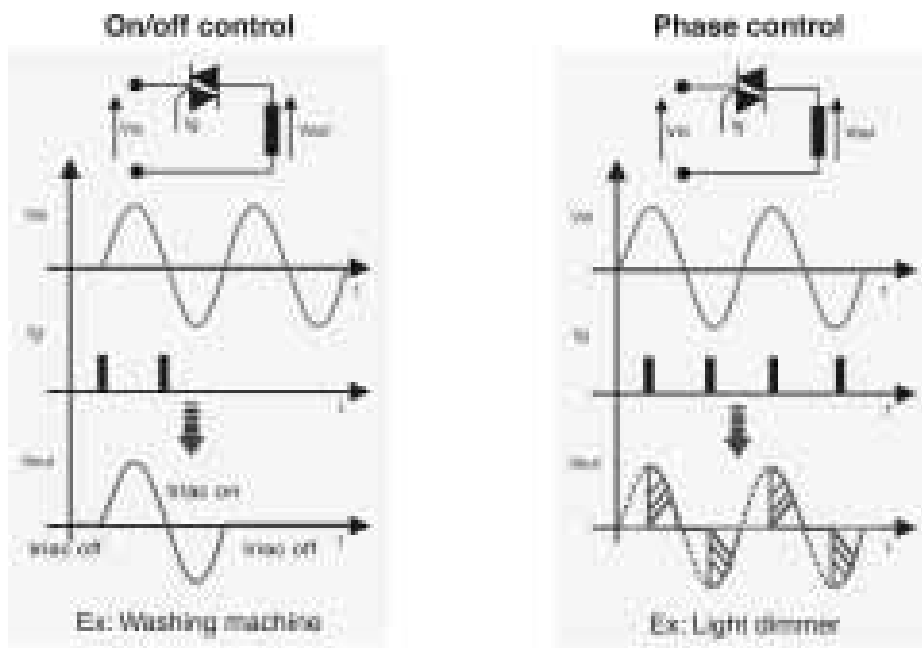
The four possible quadrants of a Triac



# TRIACs

## Functionality & Main Applications

### DIFFERENT MODES OF OPERATION



### MAIN APPLICATIONS

- Home appliances
- Washing machines, dryers,
- Dishwashers, fridges, ovens...
- Food processors
- Coffee machines
- Solid State relays
- Electric tools
- Programmable controllers
- Air conditioning system
- Water heaters
- Irrigation systems
- Fan speed controllers
- Vending machines
- Light dimmers
- Electronic Ballasts

# TRIACs

## Packages

### SMD PACKAGES



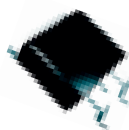
SOT-223



IPAK



DPAK



D<sup>2</sup>PAK

### INSERTION PACKAGES



TO-92



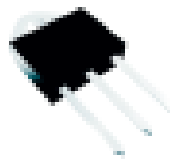
TO202-3



TO-220AB



ISOWATT220AB



TOP3



RD 91

# TRIACs

## Standard Triacs (Tj max = 125°C)

The standard TRIACs are ideal for general purpose switching and phase control applications. Available with various gate sensitivities to fit many application requirements, they are used either as ON/OFF switches (in applications like washing machines, solid state relays, food processors...), or as variable load controllers (like in light dimmers, variable speed fans, electric tools...).

IT(RMS)	VRRM VDRM	Part Number	ITSM* (1)	IGT*		VTM* @ ITM		(dV/dt)c min	dV/dt min	Package
				(I > III)	(IV)					
				max (mA)		(V)	(A)			
0.8 Amps	600	Z00607MA	9	5	7	1.5	1.1	1.5	10	TO-92
1 Amps	600	Z0103MA	8	3	5	1.6	1.4	0.5	10	TO-92
		Z0103MN	8	3	5	1.6	1.4	0.5	10	SOT-223
		Z0107MA	8	5	7	1.6	1.4	1	20	TO-92
		Z0107MN	8	5	7	1.6	1.4	1	20	SOT-223
		Z0109MA	8	10	10	1.6	1.4	2	50	TO-92
		Z0109MN	8	10	10	1.6	1.4	2	50	SOT-223
		Z0110MA	8	25	25	1.6	1.4	5	100	TO-92
		Z0110MN	8	25	25	1.6	1.4	5	100	SOT-223
	700	Z0103SA	8	3	5	1.6	1.4	0.5	10	TO-92
		Z0103SN	8	3	5	1.6	1.4	0.5	10	SOT-223
		Z0107SA	8	5	7	1.6	1.4	1	20	TO-92
		Z0107SN	8	5	7	1.6	1.4	1	20	SOT-223
		Z0109SA	8	10	10	1.6	1.4	2	50	TO-92
		Z0109SN	8	10	10	1.6	1.4	2	50	SOT-223
		Z0110SA	8	25	25	1.6	1.4	5	100	TO-92
		Z0110SN	8	25	25	1.6	1.4	5	100	SOT-223
	800	Z0103NA	8	3	5	1.6	1.4	0.5	10	TO-92
		Z0103NN	8	3	5	1.6	1.4	0.5	10	SOT-223
		Z0107NA	8	5	7	1.6	1.4	1	20	TO-92
		Z0107NN	8	5	7	1.6	1.4	1	20	SOT-223
		Z0109NA	8	10	10	1.6	1.4	2	50	TO-92
		Z0109NN	8	10	10	1.6	1.4	2	50	SOT-223
		Z0110NA	8	25	25	1.6	1.4	5	100	TO-92
		Z0110NN	8	25	25	1.6	1.4	5	100	SOT-223
4 Amps	600	BTB04-600SL	35	10	25	1.5	5	10	75	TO-220AB
		T405Q-600B	35	5	10	1.5	5	2	10	DPAK
		T405Q-600H	35	5	10	1.5	5	2	10	IPAK
		Z0402MF	20	3	3	2	5.5	0.5	100	TO202-3
		Z0405MF	20	5	5	2	5.5	1	20	TO202-3
		Z0409MF	20	10	10	2	5.5	2	100	TO202-3
		Z0410MF	20	25	25	2	5.5	5	200	TO202-3
	700	Z0402SF	20	3	3	2	5.5	0.5	100	TO202-3
		Z0405SF	20	5	5	2	5.5	1	20	TO202-3
		Z0409SF	20	10	10	2	5.5	2	100	TO202-3
		Z0410SF	20	25	25	2	5.5	5	200	TO202-3
	800	Z0402NF	20	3	3	2	5.5	0.5	100	TO202-3
		Z0405NF	20	5	5	2	5.5	1	20	TO202-3
		Z0409NF	20	10	10	2	5.5	2	100	TO202-3
		Z0410NF	20	25	25	2	5.5	5	200	TO202-3

(\*) ITSM, IGT and VTM specified at Tj = 25°C

(1) tp = 20ms

Note 1: M suffix = 600V, S suffix = 700V, N suffix = 800V

Note 2: 2500VRMS insulation voltage - UL recognized file # E81734

NEW PRODUCT

# TRIACs

Standard Triacs (Tj max = 125°C)

IT(RMS)	VRRM VDRM	Part Number	ITSM* (1)	IGT*		VTM* @ ITM		(dV/dt)c min	dV/dt min	Package
				(I - > III)	(IV)					
				max (mA)		(V)	(A)	(V/μs)	(V/μs)	
6 Amps	600	BTA06-600B	60	50	100	1.55	8.5	10	400	TO-220AB Ins.
		BTA06-600C	60	25	50	1.55	8.5	5	200	TO-220AB Ins.
		BTB06-600B	60	50	100	1.55	8.5	10	400	TO-220AB
		BTB06-600C	60	25	50	1.55	8.5	5	200	TO-220AB
	800	BTA06-800B	60	50	100	1.55	8.5	10	400	TO-220AB Ins.
		BTA06-800C	60	25	50	1.55	8.5	5	200	TO-220AB Ins.
		BTB06-800B	60	50	100	1.55	8.5	10	400	TO-220AB
		BTB06-800C	60	25	50	1.55	8.5	5	200	TO-220AB
8 Amps	600	BTA08-600B	80	50	100	1.55	11	10	400	TO-220AB Ins.
		BTA08-600C	80	25	50	1.55	11	5	200	TO-220AB Ins.
		BTB08-600B	80	50	100	1.55	11	10	400	TO-220AB
		BTB08-600C	80	25	50	1.55	11	5	200	TO-220AB
	800	BTA08-800B	80	50	100	1.55	11	10	400	TO-220AB Ins.
		BTA08-800C	80	25	50	1.55	11	5	200	TO-220AB Ins.
		BTB08-800B	80	50	100	1.55	11	10	400	TO-220AB
		BTB08-800C	80	25	50	1.55	11	5	200	TO-220AB
10 Amps	600	BTA10-600B	100	50	100	1.55	14	10	400	TO-220AB Ins.
		BTA10-600C	100	25	50	1.55	14	5	200	TO-220AB Ins.
		BTB10-600B	100	50	100	1.55	14	10	400	TO-220AB
		BTB10-600C	100	25	50	1.55	14	5	200	TO-220AB
	800	BTA10-800B	100	50	100	1.55	14	10	400	TO-220AB Ins.
		BTA10-800C	100	25	50	1.55	14	5	200	TO-220AB Ins.
		BTB10-800B	100	50	100	1.55	14	10	400	TO-220AB
		BTB10-800C	100	25	50	1.55	14	5	200	TO-220AB
12 Amps	600	BTA12-600B	120	50	100	1.55	17	10	400	TO-220AB Ins.
		BTA12-600C	120	25	50	1.55	17	5	200	TO-220AB Ins.
		BTB12-600B	120	50	100	1.55	17	10	400	TO-220AB
		BTB12-600C	120	25	50	1.55	17	5	200	TO-220AB
	800	BTA12-800B	120	50	100	1.55	17	10	400	TO-220AB Ins.
		BTA12-800C	120	25	50	1.55	17	5	200	TO-220AB Ins.
		BTB12-800B	120	50	100	1.55	17	10	400	TO-220AB
		BTB12-800C	120	25	50	1.55	17	5	200	TO-220AB
16 Amps	600	BTA16-600B	160	50	100	1.55	22.5	10	400	TO-220AB Ins.
		BTA16-600C	160	25	50	1.55	22.5	5	200	TO-220AB Ins.
		BTB16-600B	160	50	100	1.55	22.5	10	400	TO-220AB
		BTB16-600C	160	25	50	1.55	22.5	5	200	TO-220AB
	800	BTA16-800B	160	50	100	1.55	22.5	10	400	TO-220AB Ins.
		BTA16-800C	160	25	50	1.55	22.5	5	200	TO-220AB Ins.
		BTB16-800B	160	50	100	1.55	22.5	10	400	TO-220AB
		BTB16-800C	160	25	50	1.55	22.5	5	200	TO-220AB
25 Amps	600	BTA25-600B	250	50	100	1.55	35	10	500	RD91
		BTA26-600B	250	50	100	1.55	35	10	500	TOP3 Ins.
		BTB24-600B	250	50	100	1.55	35	10	500	TO-220AB
		BTB26-600B	250	50	100	1.55	35	10	500	TOP3 Ins.
	800	BTA25-800B	250	50	100	1.55	35	10	500	RD91
		BTA26-800B	250	50	100	1.55	35	10	500	TOP3
		BTB24-800B	250	50	100	1.55	35	10	500	TO-220AB
		BTB26-800B	250	50	100	1.55	35	10	500	TOP3 Ins.
40 Amps	600	BTA40-600B	400	50	100	1.55	60	10	500	RD91
		BTA41-600B	400	50	100	1.55	60	10	500	TOP3 Ins.
		BTB41-600B	400	50	100	1.55	60	10	500	TOP3 Ins.
	800	BTA40-800B	400	50	100	1.55	60	10	500	RD91
		BTA41-800B	400	50	100	1.55	60	10	500	TOP3 Ins.
		BTB41-800B	400	50	100	1.55	60	10	500	TOP3 Ins.

(\*) ITSM, IGT and VTM specified at Tj = 25°C

(1) tp = 20ms

Note 1: 2500VRMS insulation voltage - UL recognized file # E81734

NEW PRODUCT





# TRIACs

## Snubberless™ and Logic Level Triacs

The Snubberless™ TRIACs series has been developed to provide very high switching performances while keeping a low gate current drive. They are altogether recommended for highly inductive loads like motor controls and solid state relays, where switching conditions are particularly critical. Snubberless™ TRIACs also bring great improvement in noise immunity characteristics. Logic Level TRIACs are based on the same principle and offer a very low gate current drive ( $\leq 10\text{mA}$ ), allowing direct drive by microcontrollers.

$I_{T(RMS)}$  (A)	$V_{RRM}$ $V_{DRM}$  (V)	Part Number	$I_{TSM}^{* (1)}$  (A)	$I_{GT}^{* (2)}$ max (I - > III) (mA)	$V_{TM}^{*}$ @  $I_{TM}$ (V)                      (A)	(di/dt)c min. (A/ms)	dV/dt min. @ $T_j$ max (V/μ s)	Package	
4 Amps	600	T405-600B	30	5	1.6	5.5	0.9	20	DPAK
		T405-600H	30	5	1.6	5.5	0.9	20	IPAK
		T405-600T	30	5	1.6	5.5	0.9	20	TO-220AB
		T405-600W	30	5	1.6	5.5	0.9	20	ISOWATT220AB
		T410-600B	30	10	1.6	5.5	2	40	DPAK
		T410-600H	30	10	1.6	5.5	2	40	IPAK
		T410-600T	30	10	1.6	5.5	2	40	TO-220AB
		T410-600W	30	10	1.6	5.5	2	40	ISOWATT220AB
		T435-600B	30	35	1.6	5.5	2.5	400	DPAK
		T435-600H	30	35	1.6	5.5	2.5	400	IPAK
		T435-600T	30	35	1.6	5.5	2.5	400	TO-220AB
		T435-600W	30	35	1.6	5.5	2.5	400	ISOWATT220AB
	600	T405-700B	30	5	1.6	5.5	0.9	20	DPAK
		T405-700H	30	5	1.6	5.5	0.9	20	IPAK
		T405-700T	30	5	1.6	5.5	0.9	20	TO-220AB
		T405-700W	30	5	1.6	5.5	0.9	20	ISOWATT220AB
		T410-700B	30	10	1.6	5.5	2	40	DPAK
		T410-700H	30	10	1.6	5.5	2	40	IPAK
		T410-700T	30	10	1.6	5.5	2	40	TO-220AB
		T410-700W	30	10	1.6	5.5	2	40	ISOWATT220AB
		T435-700B	30	35	1.6	5.5	2.5	400	DPAK
		T435-700H	30	35	1.6	5.5	2.5	400	IPAK
		T435-700T	30	35	1.6	5.5	2.5	400	TO-220AB
		T435-700W	30	35	1.6	5.5	2.5	400	ISOWATT220AB
	800	T405-800B	30	5	1.6	5.5	0.9	20	DPAK
		T405-800H	30	5	1.6	5.5	0.9	20	IPAK
		T405-800T	30	5	1.6	5.5	0.9	20	TO-220AB
		T405-800W	30	5	1.6	5.5	0.9	20	ISOWATT220AB
		T410-800B	30	10	1.6	5.5	2	40	DPAK
		T410-800H	30	10	1.6	5.5	2	40	IPAK
		T410-800T	30	10	1.6	5.5	2	40	TO-220AB
		T410-800W	30	10	1.6	5.5	2	40	ISOWATT220AB
		T435-800B	30	35	1.6	5.5	2.5	400	DPAK
		T435-800H	30	35	1.6	5.5	2.5	400	IPAK
		T435-800T	30	35	1.6	5.5	2.5	400	TO-220AB
		T435-800W	30	35	1.6	5.5	2.5	400	ISOWATT220AB
6 Amps	600	BTA06-600BW	60	50	1.55	8.5	5.3	1000	TO-220AB Ins.
		BTA06-600CW	60	35	1.55	8.5	3.5	400	TO-220AB Ins.
		BTA06-600SW	60	10	1.55	8.5	2.4	40	TO-220AB Ins.
		BTA06-600TW	60	5	1.55	8.5	1.2	20	TO-220AB Ins.
		BTB06-600BW	60	50	1.55	8.5	5.3	1000	TO-220AB
		BTB06-600CW	60	35	1.55	8.5	3.5	400	TO-220AB
		BTB06-600SW	60	10	1.55	8.5	2.4	40	TO-220AB
		BTB06-600TW	60	5	1.55	8.5	1.2	20	TO-220AB

(\*)  $I_{TSM}$ ,  $I_{GT}$  and  $V_{TM}$  specified at  $T_j = 25^\circ\text{C}$

(1)  $t_p = 20$  ms

(2) Quadrant IV operation not accessible on Snubberless triacs

Note 1: 2500V<sub>RMS</sub> insulation voltage - UL recognized file # E81734

NEW PRODUCT



# TRIACs

## Snubberless™ and Logic Level Triacs

IT(RMS)	VRRM VDRM	Part Number	ITSM* (1)	IGT*(2) max (I - > III)	VTM* @	ITM	(di/dt)c min.	dV/dt min. @ Tj max	Package
(A)	(V)		(A)	(mA)	(V)	(A)	(A/ms)	(V/μs)	
6 Amps	600	T620-600W	80	20	1.4	8.5	3.3	300	ISOWATT220AB
		T630-600W	80	30	1.4	8.5	4.5	500	ISOWATT220AB
	800	BTA06-800BW	60	50	1.55	8.5	5.3	1000	TO-220AB Ins.
		BTA06-800CW	60	35	1.55	8.5	3.5	400	TO-220AB Ins.
		BTA06-800SW	60	10	1.55	8.5	2.4	40	TO-220AB Ins.
		BTA06-800TW	60	5	1.55	8.5	1.2	20	TO-220AB Ins.
		BTA06-800BW	60	50	1.55	8.5	5.3	1000	TO-220AB
		BTA06-800CW	60	35	1.55	8.5	3.5	400	TO-220AB
		BTA06-800SW	60	10	1.55	8.5	2.4	40	TO-220AB
		BTA06-800TW	60	5	1.55	8.5	1.2	20	TO-220AB
		T630-800W	80	20	1.4	8.5	3.3	300	ISOWATT220AB
		T630-800W	80	30	1.4	8.5	4.5	500	ISOWATT220AB
8 Amps	600	BTA08-600BW	80	50	1.55	8.5	7	1000	TO-220AB Ins.
		BTA08-600CW	80	35	1.55	8.5	4.5	400	TO-220AB Ins.
		BTA08-600SW	80	10	1.55	8.5	2.8	40	TO-220AB Ins.
		BTA08-600TW	80	5	1.55	8.5	1.5	20	TO-220AB Ins.
		BTB08-600BW	80	50	1.55	8.5	7	1000	TO-220AB
		BTB08-600CW	80	35	1.55	8.5	4.5	400	TO-220AB
		BTB08-600SW	80	10	1.55	8.5	2.8	40	TO-220AB
		BTB08-600TW	80	5	1.55	8.5	1.5	20	TO-220AB
		T810-600B	80	10	1.55	8.5	2.8	40	DPAK
		T810-600H	80	10	1.55	8.5	2.8	40	IPAK
		T835-600B	80	35	1.55	11	4.5	400	DPAK
		T835-600G	80	35	1.55	11	4.5	400	D <sup>2</sup> PAK
		T835-600H	80	35	1.55	11	4.5	400	IPAK
	800	T820-600W	100	20	1.4	11	4.5	300	ISOWATT220AB
		T830-600W	100	30	1.4	11	4.5	500	ISOWATT220AB
		BTA08-800BW	80	50	1.55	11	7	1000	TO-220AB Ins.
		BTA08-800CW	80	35	1.55	11	4.5	400	TO-220AB Ins.
		BTA08-800SW	80	10	1.55	11	2.8	40	TO-220AB Ins.
		BTA08-800TW	80	5	1.55	11	1.5	20	TO-220AB Ins.
		BTB08-800BW	80	50	1.55	11	7	1000	TO-220AB
		BTB08-800CW	80	35	1.55	11	4.5	400	TO-220AB
		BTB08-800SW	80	10	1.55	11	2.8	40	TO-220AB
		BTB08-800TW	80	5	1.55	11	1.5	20	TO-220AB
		T810-800B	80	10	1.55	11	2.8	40	DPAK
		T810-800H	80	10	1.55	11	5.4	40	IPAK
		T835-800B	80	35	1.55	11	4.5	400	DPAK
		T835-800G	80	35	1.55	11	4.5	400	D <sup>2</sup> PAK
		T835-800H	80	35	1.55	11	4.5	400	IPAK
		T820-800W	100	20	1.4	11	4.5	300	ISOWATT220AB
		T830-800W	100	30	1.4	11	4.5	500	ISOWATT220AB
10 Amps	600	BTA10-600BW	100	50	1.55	14	9	1000	TO-220AB Ins.
		BTA10-600CW	100	35	1.55	14	5.5	500	TO-220AB Ins.
		BTB10-600BW	100	50	1.55	14	9	1000	TO-220AB
		BTB10-600CW	100	35	1.55	14	5.5	500	TO-220AB
		T1020-600W	120	20	1.4	14	5.5	300	ISOWATT220AB
	800	T1030-600W	120	30	1.4	14	6.5	500	ISOWATT220AB
		BTA10-800BW	100	50	1.55	14	9	1000	TO-220AB Ins.
		BTA10-800CW	100	35	1.55	14	5.5	500	TO-220AB Ins.
		BTB10-800BW	100	50	1.55	14	9	1000	TO-220AB
		BTB10-800CW	100	35	1.55	14	5.5	500	TO-220AB
		T1020-800W	120	20	1.4	14	5.5	500	ISOWATT220AB
		T1030-800W	120	30	1.4	14	6.5	500	ISOWATT220AB

(\*) ITSM, IGT and VTM specified at Tj = 25°C

(1) tp = 20 ms

(2) Quadrant IV operation not accessible on Snubberless triacs

Note 1: 2500VRMS insulation voltage - UL recognized file # E81734

NEW PRODUCT



# TRIACs

## Snubberless™ and Logic Level Triacs

$I_{T(RMS)}$	$V_{RRM}$ $V_{DRM}$	Part Number	$I_{TSM}^{*(1)}$	$I_{GT}^{*(2)}$ max (I - > III)	$V_{TM}^{*}$ @	$I_{TM}$	$(di/dt)_c$ min.	$dV/dt$ min. @ $T_j$ max	Package
(A)	(V)		(A)	(mA)	(V)	(A)	(A/ms)	(V/ $\mu$ s)	
12 Amps	600	BTA12-600BW	120	50	1.55	17	12	1000	TO-220AB Ins.
		BTA12-600CW	120	35	1.55	17	6.5	500	TO-220AB Ins.
		BTA12-600SW	120	10	1.55	17	2.9	40	TO-220AB Ins.
		BTA12-600TW	120	5	1.55	17	3.5	20	TO-220AB Ins.
		BTB12-600BW	120	50	1.55	17	12	1000	TO-220AB
		BTB12-600CW	120	35	1.55	17	6.5	500	TO-220AB
		BTB12-600SW	120	10	1.55	17	2.9	40	TO-220AB
		BTB12-600TW	120	5	1.55	17	3.5	20	TO-220AB
		T1220-600W	120	20	1.4	17	6.5	300	ISOWATT220AB
	800	T1230-600W	120	30	1.4	17	6.5	500	ISOWATT220AB
		T1235-600G	120	35	1.55	17	6.5	500	D <sup>2</sup> PAK
		BTA12-800BW	120	50	1.55	17	12	1000	TO-220AB Ins.
		BTA12-800CW	120	35	1.55	17	6.5	500	TO-220AB Ins.
		BTA12-800SW	120	10	1.55	17	2.9	40	TO-220AB Ins.
		BTB12-800BW	120	50	1.55	17	12	1000	TO-220AB
		BTB12-800CW	120	35	1.55	17	6.5	500	TO-220AB
		BTB12-800SW	120	10	1.55	17	2.9	40	TO-220AB
		T1220-800W	120	20	1.4	17	6.5	300	ISOWATT220AB
16 Amps	600	T1230-800W	120	30	1.4	17	6.5	500	ISOWATT220AB
		T1235-800G	120	35	1.55	17	6.5	500	D <sup>2</sup> PAK
		BTA16-600BW	160	50	1.55	22.5	14	1000	TO-220AB Ins.
		BTA16-600CW	160	35	1.55	22.5	8.5	500	TO-220AB Ins.
		BTA16-600SW	160	10	1.55	22.5	3	40	TO-220AB Ins.
		BTB16-600BW	160	50	1.55	22.5	14	1000	TO-220AB
		BTB16-600CW	160	35	1.55	22.5	8.5	500	TO-220AB
		BTB16-600SW	160	10	1.55	22.5	3	40	TO-220AB
		T1620-600W	200	20	1.4	22.5	8.5	300	ISOWATT220AB
	800	T1630-600W	200	30	1.4	22.5	11	500	ISOWATT220AB
		T1635-600G	160	35	1.55	22.5	8.5	500	D <sup>2</sup> PAK
		BTA16-800BW	160	50	1.55	22.5	14	1000	TO-220AB Ins.
		BTA16-800CW	160	35	1.55	22.5	8.5	500	TO-220AB Ins.
		BTA16-800SW	160	10	1.55	22.5	3	40	TO-220AB Ins.
		BTB16-800BW	160	50	1.55	22.5	14	1000	TO-220AB
		BTB16-800CW	160	35	1.55	22.5	8.5	500	TO-220AB
		BTB16-800SW	160	10	1.55	22.5	3	40	TO-220AB
		T1620-800W	200	20	1.4	22.5	8.5	300	ISOWATT220AB
25 Amps	600	T1630-800W	200	30	1.4	22.5	11	500	ISOWATT220AB
		T1635-600G	160	35	1.55	22.5	8.5	500	D <sup>2</sup> PAK
		BTA24-600BW	250	50	1.55	35	22	1000	TO-220AB Ins.
		BTA24-600CW	250	35	1.55	35	13	500	TO-220AB Ins.
		BTA25-600BW	250	50	1.55	35	22	1000	RD91
		BTA25-600CW	250	35	1.55	35	13	500	RD91
		BTA26-600BW	250	50	1.55	35	22	1000	TOP3 Ins.
		BTA26-600CW	250	35	1.55	35	13	500	TOP3 Ins.
		BTB24-600BW	250	50	1.55	35	22	1000	TO-220AB
	800	BTB24-600CW	250	35	1.55	35	13	500	TO-220AB
		T2535-600G	250	35	1.55	35	13	500	D <sup>2</sup> PAK
		BTA24-800BW	250	50	1.55	35	22	1000	TO-220AB Ins.
		BTA24-800CW	250	35	1.55	35	13	500	TO-220AB Ins.
		BTA25-800BW	250	50	1.55	35	22	1000	RD91
		BTA25-800CW	250	35	1.55	35	13	500	RD91
		BTA26-800BW	250	50	1.55	35	22	1000	TOP3 Ins.
		BTA26-800CW	250	35	1.55	35	13	500	TOP3 Ins.
		BTB24-800BW	250	50	1.55	35	22	1000	TO-220AB
		BTB24-800CW	250	35	1.55	35	13	500	TO-220AB
		T2535-800G	250	35	1.55	35	13	500	D <sup>2</sup> PAK

(\*)  $I_{TSM}$ ,  $I_{GT}$  and  $V_{TM}$  specified at  $T_j = 25^\circ\text{C}$

(1)  $t_p = 20$  ms

(2) Quadrant IV operation not accessible on Snubberless triacs

Note 1: 2500V<sub>RMS</sub> insulation voltage - UL recognized file # E81734

NEW PRODUCT



# TRIACs

## High Temperature Triacs ( $T_j \text{ max} = 150^\circ\text{C}$ ) - Snubberless

Specifically designed to work in **high temperature environments** (found in "hot appliances" such as cookers, ovens, hobs, electric heaters, coffee machines...) the new high temperature TRIACs provide enhanced performance in terms of power losses and thermal dissipation. This allows optimization of the heatsink dimensioning, leading to PCB space reduction and cost effectiveness for the designer.

$I_{T(RMS)}$ (A)	$V_{RRM}$ $V_{DRM}$ (V)	Part Number	$T_C$ ( $^\circ\text{C}$ )	$I_{TSM}^{*(1)}$ (A)	$I_{GT}^{*}$ max (I - > III) (mA)	$V_{TM}^{*}@ I_{TM}$ (V) (A)		$(di/dt)_C$ min (A/ms)	$R_{th(j-c)}$ max ( $^\circ\text{C}/\text{W}$ )	Package
12 Amps	600	T1235H-600G	135	140	35	1.5	17	5.3	1.2	D <sup>2</sup> PAK
		T1235H-600T	135	140	35	1.5	17	5.3	1.2	TO-220AB
25 Amps		T2550H-600T	125	250	50	1.5	35	11.1	0.8	TO-220AB

(\*)  $I_{TSM}$ ,  $I_{GT}$  and  $V_{TM}$  specified at  $T_j = 25^\circ\text{C}$

(1)  $t_p = 20 \text{ ms}$

Note 1: 2500V<sub>RMS</sub> insulation voltage - UL recognized file # E81734

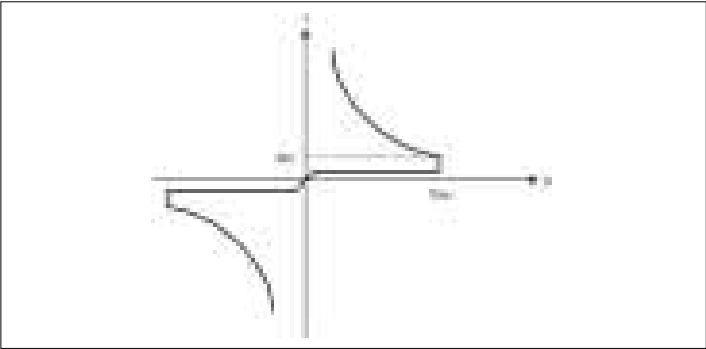
NEW PRODUCT

# DIACs

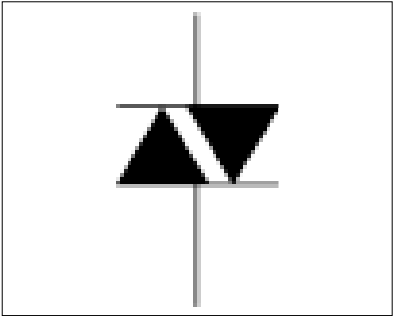
## Bi-directional Diode Thyristor

DIACs are used as a trigger diode with a fixed voltage reference. They are mainly used in light dimmer, power tools, vacuum cleaners applications in conjunction with TRIACs, or in starter circuit for fluorescent lamp ballasts.

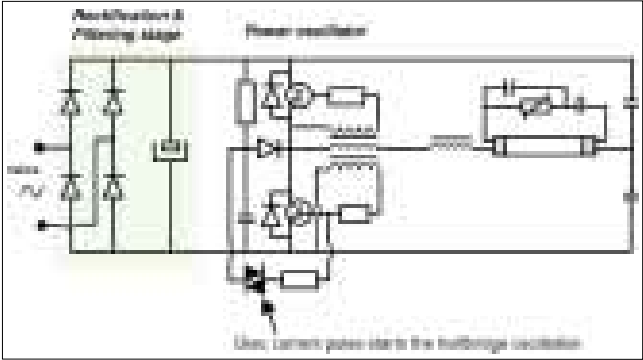
Typical I/V Characteristic of a diac



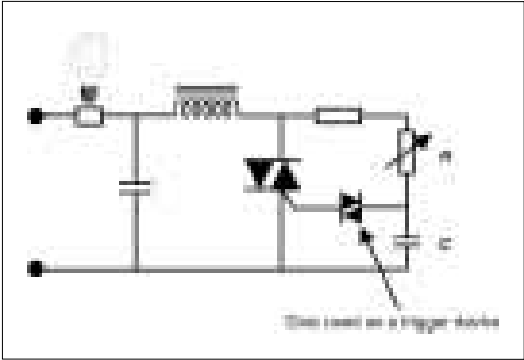
Diac Symbol



CFL & Electronic Ballasts



Light Dimmers



DO-35

SOT-23

Part Number	V <sub>BO</sub>			V <sub>BO</sub> symmetry  (V)	I <sub>BO</sub> max  (μA)	ΔV (dynamic V <sub>BO</sub> )  (V)	Package
	min(V)	typ(V)	max(V)				
DB3	28	32	36	±3	50	5	DO-35
DB3TG	30	32	34	±2	15	9	DO-35
DB4	35	40	45	±3	50	5	DO-35
SMDB3	28	32	36	±3	10	10	SOT-23

NEW PRODUCT

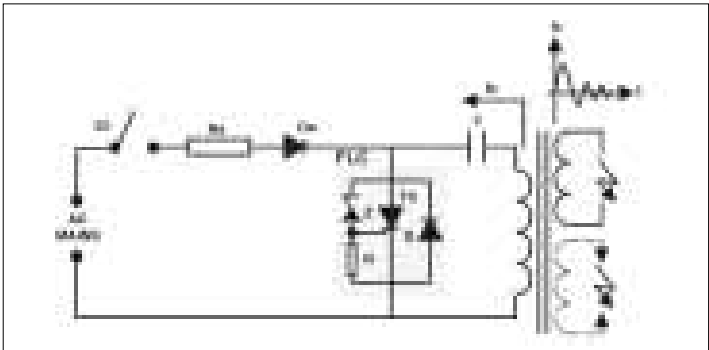


# IGNITORS for Industrial Applications

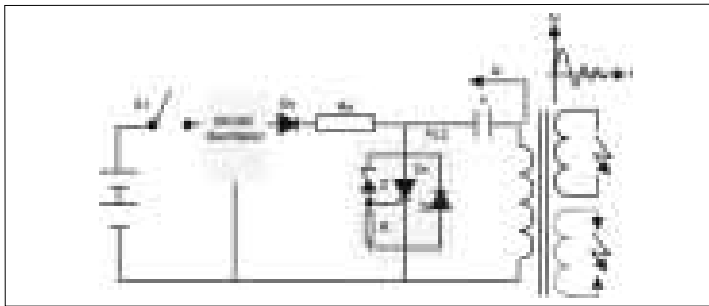
## Control Circuit for Gas Hobs, Fuel Ignition, Electrical Fence

Fire Lighter Circuits have been developed for systems with gas ignition like furnaces, boilers, fuel control ignition, gas ranges, barbecues.... They are based on spark generation through capacitive discharge mode and provide high pulse and high noise immunity level in a fully integrated solution.

### AC operation example



### DC operation example



TO-92



IPAK



DPAK

Part Number	Voltage Source (V)	V <sub>BO</sub>		Peak Current @ 10µs (A)	Package
		min (V)	max (V)		
FLC01-200B	220V AC	206	233	190	DPAK
FLC01-200H	220V AC	206	233	190	IPAK
FLC10-200B	220V AC	206	233	240	DPAK
FLC10-200H	220V AC	206	233	240	IPAK
FLC21-135A	DC Battery	140	160	90	TO-92

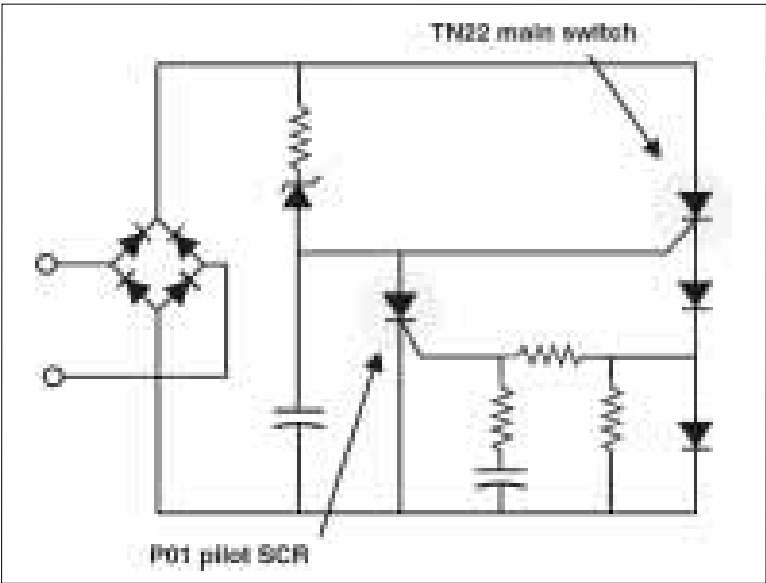
NEW PRODUCT



# IGNITORS for Lighting Applications

## Fluorescent Tube Starter

The TN22/P01 combination is specifically intended for use in fluorescent tube ignition starters. Thanks to the high voltage capability of the TN22 coupled with the very sensitive P01 pilot SCR, this circuit kit provides high energy striking capabilities with low triggering power.



DPAK



TO-92

### Starlight

$I_{T(RMS)}$	$V_{RRM}$ $V_{DRM}$	Part Number	$I_{TSM}^{* (1)}$	$I_{GT}^{*}$ max	$I_H^{*}$ max	$V_{TM}^{*}$ @ $I_{TM}$	$dV/dt$ min. @ $T_j$ max	Package
(A)	(V)		(A)	( $\mu A$ )	(mA)	(V)	(A)	(V/ $\mu s$ )
0,8 Amps	400	P0130AA	7	5	1	1.25	0.5	25
2 Amps	400	TN22-1500B	1.5	1500	175	3.1	2	500
		TN22-1500H						500

(\*)  $I_{TSM}$ ,  $I_{GT}$ ,  $I_H$  and  $V_{TM}$  specified at  $T_j = 25^{\circ}C$

(1)  $t_p = 20$  ms

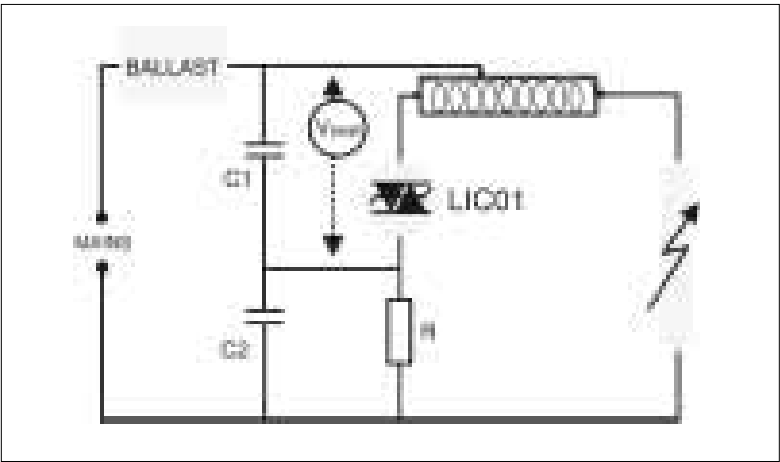
NEW PRODUCT

# IGNITORS for Lighting Applications

## LIC Series - High Intensity Discharge Lamp Starter

The **LIC series** is the core of electronic superimposed ignitors for high intensity discharge lamps supplied by magnetic ballasts. The main applications are outdoor, street or building lighting fixtures using high pressure Sodium or Metal Halide lamps. The LIC devices provide a high pulse current capability and a low holding current, to secure the lamp ignition with multi-pulse striking. Compared with the conventional solution, they offer a high reliability level and space saving as it is a stand-alone circuit.

LICO1 typical application



DPAK



IPAK

Part Number	$V_{BO\ min}$ (V)	$V_{BO\ max}$ (V)	Peak Pulse current @10 $\mu$ s (A)	$I_H\ min$ (mA)	$di/dt\ max$ (A/ $\mu$ s)	Package
LIC01-215B	215	255	50	50	80	DPAK
LIC01-215H						IPAK

NEW PRODUCT

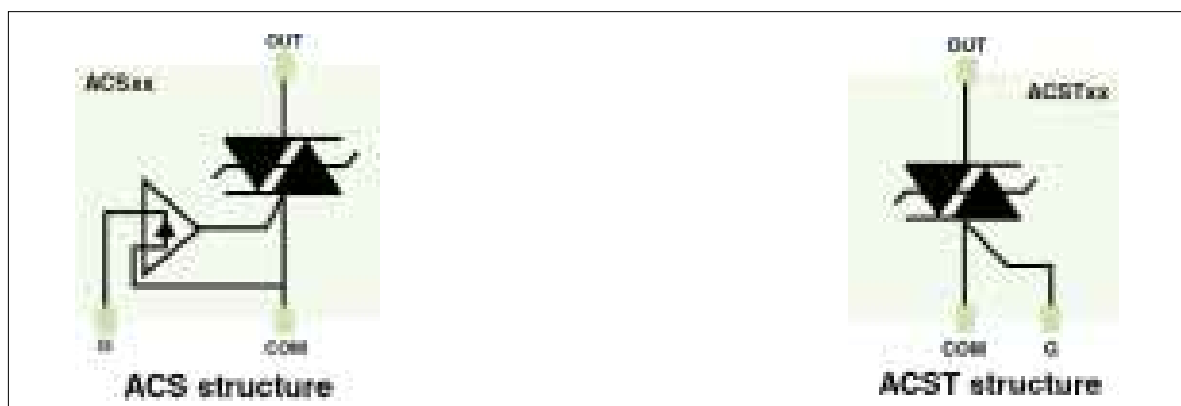


# AC Switches

## ACS™ and ACST Devices for Home Appliances

The ACS series is a new generation of switches specifically developed for home appliances and industrial processing applications. Thanks to their embedded overvoltage protection and integrated level shifter, they do not require external voltage protection such as MOV, provide high reliability level to safely sustain AC transients (as defined in IEC61000 standards), have superior performance in noise immunity thanks to ultra high  $dV/dt$  and are easy to drive directly from microprocessors. The ACST series embeds the overvoltage protection structure of the ACS and extends the AC Switch family to the 8A and 800V ranges.

### ACSxx: High voltage ACS™ devices for medium power loads in appliance systems



### Main benefits of ACS & ACST technology

#### No more external MOV

- ACS = Protected structure

#### No more Snubber circuit

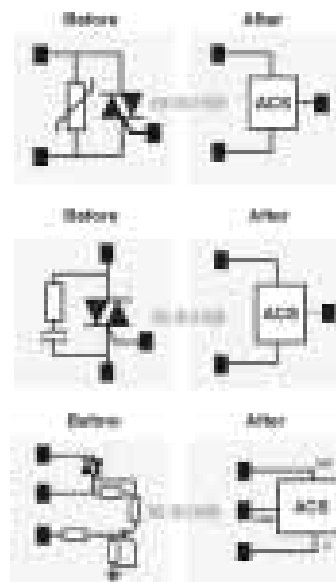
- Thanks to high  $dV/dt$

#### Resists Line Transients

- Complies with IEC61000-4-5 standard

#### Simplified Gate drive

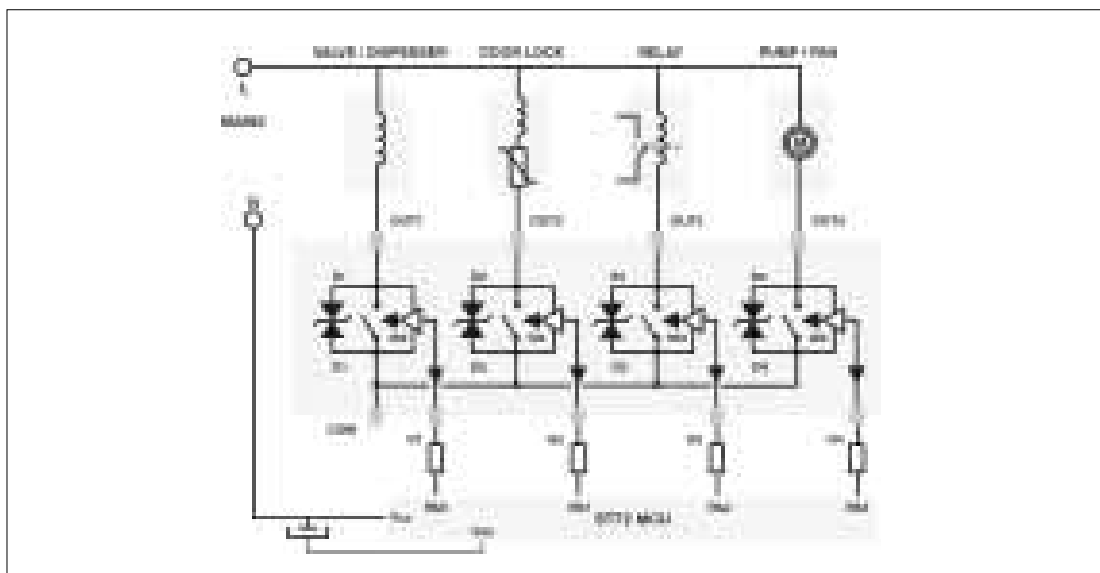
- No buffer interface needed
- Suppression of "kick-back" effect



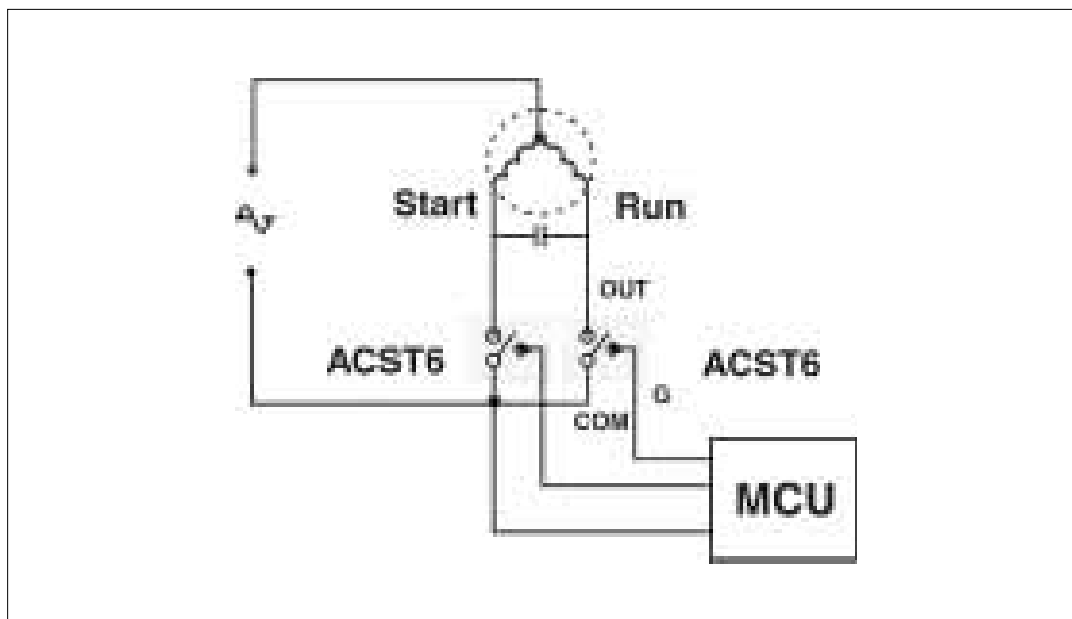
## AC Switches

### ACST™ and ACST Devices for Home Appliances

Typical configuration in washing machine



Typical configuration for compressor control in fridge applications



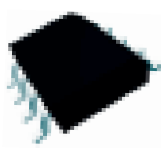
# AC Switches

## Packages

### SMD PACKAGES



SOT-223



SO-8



SO-20



DPAK



D<sup>2</sup>PAK

### INSERTION PACKAGES



TO-92



DIP-8



DIP-20



TO-220AB



TO-220FPAB

# AC Switches

## ACS™ and ACST Devices for Home Appliances

$V_{RRM}$ $V_{DRM}$  (V)	$I_T(RMS)$  (A)	Part Number	$V_{CL@1mA}$ Typ <sup>(1)</sup> (V)	$I_{GT}^*$ max (mA)	$V_{TM}^* @ I_{TM}$ (V) (A)	$(di/dt)_c$ (A/ms)	$dV/dt$ min. (V/ $\mu$ s)	Package
500 Amps	0.2	ACS102-5T1	600	5	1.1	0.3	0.1	SO-8
		ACS102-5TA	600	5	1.1	0.3	0.1	TO-92
	3x0.2	ACS302-5T3	600	5	1.2	0.3	0.1	SO-20
	0.8	ACS108-5SA	600	10	1.3	1.1	0.1	TO-92
		ACS108-5SN	600	10	1.3	1.1	0.1	SOT-223
700 Amps	4x0.2	ACS402-5SB4	600	10	1.1	0.3	0.1	DIP-20
	1	ACS110-7SB2	1100	10	1.3	1.4	0.5	DIP-8
		ACS110-7SN	1100	10	1.3	1.4	0.5	SOT-223
	2	ACS120-7SB	1100	10	1.3	2.8	1	DPAK
		ACS120-7SFP	1100	10	1.3	2.8	1	TO-220FPAB
		ACS120-7SH	1100	10	1.3	2.8	1	IPAK
		ACS120-7ST	1100	10	1.3	2.8	1	TO-220AB
	4	ACST4-7CB	1100	25	1.5	5.6	2.5	DPAK
		ACST4-7CFP	1100	25	1.5	5.6	2.5	TO-220FPAB
		ACST4-7CH	1100	25	1.5	5.6	2.5	IPAK
		ACST4-7SB	1100	10	1.5	5.6	2	DPAK
		ACST4-7SFP	1100	10	1.5	5.6	2	TO-220FPAB
		ACST4-7SH	1100	10	1.5	5.6	2	IPAK
	6	ACST6-7SFP	1100	10	1.4	2.1	3	TO-220FPAB
		ACST6-7SG	1100	10	1.4	2.1	3	D <sup>2</sup> PAK
		ACST6-7SR	1100	10	1.4	2.1	3	I <sup>2</sup> PAK
		ACST6-7ST	1100	10	1.4	2.1	3	TO-220AB
800 Amps	8	ACST8-8CFP	1100	30	1.5	11	4.5	TO-220FPAB
		ACST8-8CT	1100	30	1.5	11	4.5	TO-220AB

(\*)  $I_{GT}$  and  $V_{TM}$  specified at  $T_J = 25^\circ\text{C}$

(1)  $t_p = 1$  ms

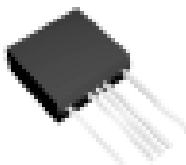
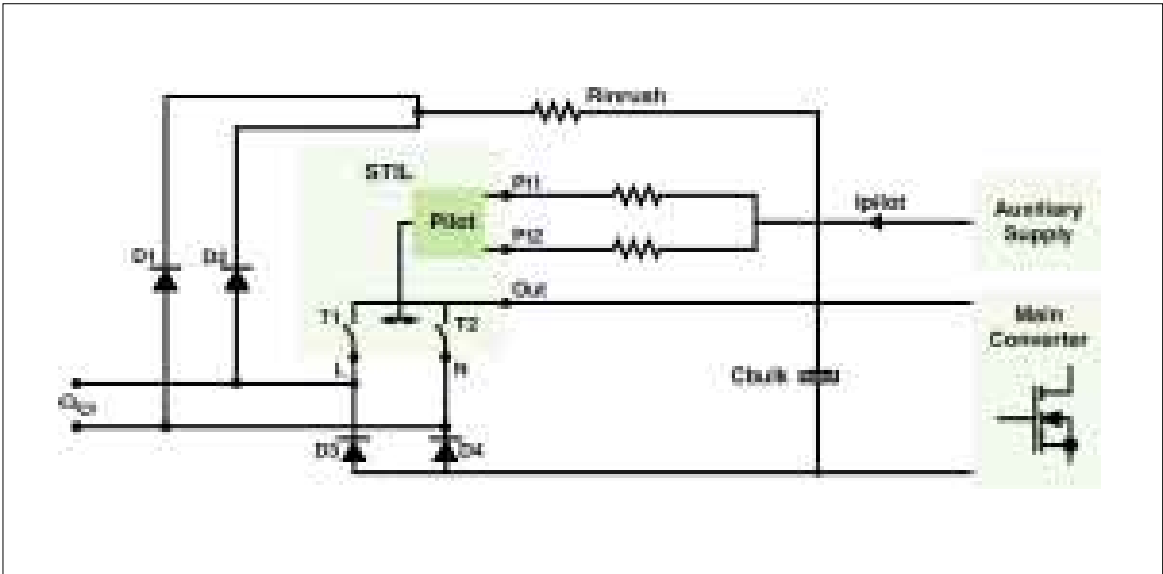
NEW PRODUCT

# ASDs for INDUSTRIAL APPLICATIONS

## Inrush Current Limiter Circuit

The **STILO2** is a circuit combining two unidirectional switches for use in a smart configuration of a primary rectification bridge, mixing diode rectification and SCR. Compared to the traditional inrush current limitation circuits, the SCR bridge configuration using the STIL offers reduced power losses and higher efficiency, reduced size, full operation during a.c. ON/ OFF cycles with PFC and absence of hot spots during nominal operation. The STILO2-P5 is dedicated to SMPS with output power up to 100W and the STILO4-P5 to SMPS with output power up to 200W.

STIL Typical application with a rectification SCR Bridge



Pentawatt

VDout/VRout	Iout(AV)	Part Number	ITSM* (1)	Ip1+Ip2* typ	Irout(on) max	VF @ Iout (AV)		dVDout/dt min @ Tj max (V/μs)	Package
(V)	(A)		(A)	(mA)	(μA)	(V)	(A)		
700 Amps	2	STILO2-P5	65	20	500	1.1	2	300	Pentawatt HV2
	4	STILO4-P5							Pentawatt HV2

(\*) ITSM and Ip1 + Ip2 specified at Tj = 25°C

(1) tp = 10 ms

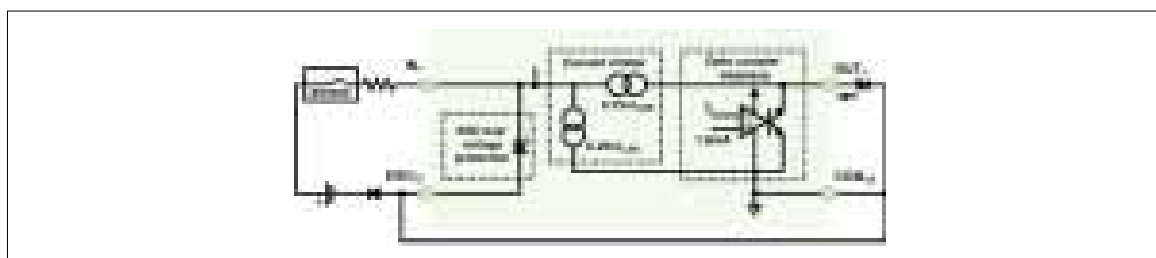
NEW PRODUCT

## ASDs for INDUSTRIAL APPLICATIONS

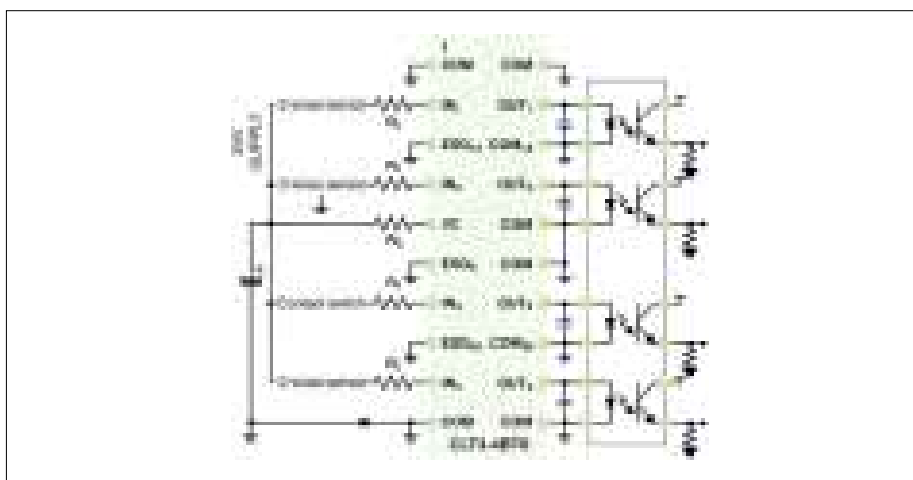
## Current Limited Overvoltage Protected Quad Digital Termination

The CLT3-4 is a 3mA quadruple input digital termination device designed for 24V DC automation applications. It achieves the compact front-end of a digital input by minimizing the external component count. It reduces the printed board size and the losses in conduction. The current limiting circuit connected between the input and the output pins is compensated over all the temperature range. Its main applications include termination for inputs designed to the IEC61131-2 type 1 standard and for the logic interfaces of EN60947-5-2 proximity sensors. The CLT3-4 will also be useful in the I/O modules of industrial automation modules including PLCs, distributed I/O peripherals, field bus nodes and machine tool interfaces.

### CLT3-4BT6 single channel block diagram



### CLT3-4BT6 application diagram



TSSOP20

V <sub>CC</sub>	V <sub>I</sub>	Part Number	I <sub>LIM</sub> min/max	I <sub>OFF</sub> /V <sub>OFF</sub>	ESD in air	Surge 1.2/50 μs	Package
(V)	(A)		(mA)	(mA/V)	(kV)	(kV)	
19 to 35	-30 to +35	CLT3-4BT6	2.1/3.7	1.5/5	±8	1	TSSOP20

## NEW PRODUCT

# Major Key Applications

## Major Home Appliances

APPLICATION	LOAD / FUNCTION	KEY PRODUCTS
<b>Washing Machine</b>		
Drum motor (up to 700W)	Speed control	BTB16-600BW / BTB16-600CW / BTB16-600C
Drum motor (100 to 300W)	Induction motor	ACST8-8CFP / T830-800W / BTA12-800CW
Drain pump (up to 35W)	Synchronous motor	ACS108-5SA / ACS108-5SN / Z01xxMA
Drain pump (50 to 100W)	Asynchronous motor	T405-600H / T410-600H T405-600T / T410-600T / ACS120 / T405-600B / T410-600B / ACST4-7SFP / T435-800W
Drain magnet (up to 50W)	Bridge + Solenoid	T435-600W / ACST4-7SFP
Valves (up to 30W)	Solenoid	ACS108-5SA / ACS402-5SB4 / ACS102-7S / Z01xxMA
Door lock (up to 10W)	Thermal actuator	ACS108-5SA / ACS402-5SB4 / ACS102-7S / Z01xxMA
Water Heater	Temperature control	BTB16-600BW / T2550H-600T
Timer motor	Small synchronous motor	Z01xxMA / ACS108-5SA / ACS102-7S
Dispenser	Solenoid	Z01xxMA / ACS108-5SA / ACS102-7S
<b>Dishwasher</b>		
Recirculation pump (up to 200W)	Induction motor	ACST4-7SFP / T830-800W / BTA08-600CW / BTB08-600CW / BTA08-800CW
Valves (up to 30W)	Solenoid	ACS108-5SA / ACS402-5SB4 / ACS102-7S / Z01xxMA
Drain pump (up to 35W)	Synchronous motor	ACS108-5SA / ACS402-5SB4 / ACS102-7S / Z01xxMA / ACS110 / ACS 120
Water Heater	Heating resistor (Temperature control)	BTB16-600BW
Dispenser	Wax actuator	ACS102-7S
<b>Trumble Dryer</b>		
Drum motor (up to 300W)	Induction motor (ON-OFF / reversing)	T830-800W / BTA08-800CW / ACST8-8CFP / BTA25-600B BTB41-600B / T2550H-600T
<b>Refrigerator, Freezer, Water dispenser</b>		
Compressor (up to 300W)	Induction motor (ON-OFF control)	ACST6-7ST / BTA08-600SW / BTB08-600W
Fan	Low power induction motor	ACS108-5SA / ACS108-5SN / ACS102-7S / ACS110 / ACS120 / ACS402-5SB4 / ACST4-7S / Z0107MA / Z0409MF / T410-600B / BTB06-600SW / ACST6-7S
Defroster resistor	Heating resistor	ACS108-5SA / ACS108-5SN / ACS302-5T3 / ACS102-7S / ACS402-5SB4 / ACST4-7S / Z0107MA / Z0409MF / T410-600B / BTB06-600SW / ACST6-7S
Lamp	In series with a resistor	ACS108-7S / Z01xxMA
Door Damper	Small induction motor	ACS108-7S / ACS110

NEW PRODUCT

# Major Key Applications

## Major Home Appliances

APPLICATION	LOAD / FUNCTION	KEY PRODUCTS
<b>Microwave oven</b>		
Power control (Magnetron)	Transformer primary (ON-OFF control)	BTA12-600CW / <b>ACST8-8CFP</b> / T410-600T / BTA12-600CW BTA08-600SW
Rotating plate	Induction motor	T410-600T / <b>ACST4-7S</b> / <b>ACS108-5SN</b> / <b>ACS110</b> / <b>ACS120</b>
Fan	Induction motor	T410-600T / <b>ACST4-7S</b>
Grill	Temperature control	BTB16-600BW / T2550H-600T
Inside Lamp	Resistor	<b>ACS108-7S</b>
Halogen lamp heating	Resistor	T1235H-600T / BTA12-600B / BTA16-600B / T2550H-600T
<b>Hot Appliances</b>		
Halogen cooktop (upto2kW)	Halogen Temperature Control	T2550H-600T
Oven	Heating resistor (Temperature Control)	T2550H-600T
Fan / Cooker hood	Induction motor	Z01xxMA / Z01xxMN / Z00607MA / Z04xxMF / T4xx-600W / <b>ACS110</b> / <b>ACS 120</b>
Gas stove	Ignition Spark generation	FLC01-200H / FLC10-200H / FLC21-65A / FLC21-135A
<b>Vaccum cleaner</b>		
Turbine speed control (up to 1200W & 1600W)	Universal motor control (with diac)	BTB12-600BW / BTB16-600W / DB3 / <b>SMDB3</b>
Turbine speed control (up to 1200W & 1600W)	Universal motor control (with MCU)	BTB12-600SW / BTB16-600W

NEW PRODUCT



# Major Key Applications

## Small appliances

APPLICATION	LOAD / FUNCTION	KEY PRODUCTS
<b>Food processor</b>		
Up to 300W & from 300W to 600W	Speed motor control (DC operation with SCR)	TS420-600B / TS420-600T / TS820-600B / TS820-600T
Up to 800W	Speed motor control (full wave control with triac)	BTB06-600CW / BTB06-600SW / BTB08-600CW / BTB08-600SW / T810-600B
<b>Rice cooker</b>		
Main cooking and slow cooking (200W heater)	Heating resistor (Temperature control)	Z0107MA / Z0107MN / T405-600B / T405-600T / T405-600H / T410-600B / T410-600T / T410-600H / <b>ACST4-7S</b> / T1235H-600T
<b>Bread maker</b>		
Up to 200W	Induction motor control	T830-600W / BTA08-600CW / BTB08-600CW / BTA06-600C / T830-800W / BTA08-800CW / <b>ACST8-8CFP</b>
<b>Coffee maker</b>		
Up to 1.2kW	Heater (Temperature control)	BTB12-600CW / BTB12-600SW / T2550H-600T
<b>Electric tools</b>		
Hand drill (400W to 1200W)	Universal motor control (AC operation with triac)	<b>BTB04-600SL</b> / <b>T405Q-600B/H</b> / BTA06-600BW / BTA06-600CW / BTA12-600BW / BTA12-600CW / BTB06-600BW / BTB06-600CW / BTB12-600BW / BTB12-600CW / T810-600B / T835-600B / T1235-600G / T1635-600G / BTA16-600BW / BTB16-600BW / DB3 / <b>SMDB3</b>
Hand drill (up to 600W)	Universal motor control (half wave control with sensitive SCR)	TS420-600B / TS820-600B / TS1220-600B
<b>Toaster Bug killer Electric kettle Electric blanket Iron Hair dryer</b>		
	Heater (Temperature control)	BTB08-600CW / BTB08-600SW / BTB16-600CW / BTB16-600SW / BTB24-600CW / BTB41-600B / BTA25-600B / T2550H-600T
<b>Sewing machine</b>		
	Speed motor control	<b>ACST6-7S</b> / BTA06-600BW / BTA06-600CW / BTA12-600BW / BTA12-600CW / BTB06-600BW / BTB06-600CW / BTB12-600CW / T810-600B / T835-600B / T1235-600G / T1635-600G / DB3 / <b>SMDB3</b>

NEW PRODUCT

# Major Key Applications

## Lighting

APPLICATION	LOAD / FUNCTION	KEY PRODUCTS
<b>Dimmer</b>		
Basic light dimmer (60 to 600W)	Bulb lamp control (With diac)	BTA10-600SW / BTA12-600SW / DB3 / <b>SMDB3</b>
Smart light dimmer (60 to 600W)	Bulb lamp control (With MCU)	BTA10-600SW / BTA12-600SW
Touch dimmer (up to 600W)	Bulb lamp control (With MCU)	<b>BTB04-600SL</b> / <b>T405Q-600H</b> / Z0402MF
<b>Fluorescent tube lamp starter</b>		
Electronic starter (18 to 70W)	Preheating + ignition of fluorescent tube lamps	EFS21-TL5
<b>Ignitor</b>		
Ignitor for HID lamp	High voltage pulses generator (with LIC01)	LIC01-195H / LIC01-215B / LIC01-215H
Ignitor for HID lamp (2)	High voltage pulses generator (with a triac)	Z0405MF / Z0409MF / T435-600B / T435-600H / T435-600T / DB3 / <b>SMDB3</b>
<b>Camera flash</b>		
	Ignition	P0111DA
<b>Christmas lighting</b>		
	Blinker pilot thyristor	XL0840
<b>Compact fluorescent lighting High frequency ballast</b>		
	Oscillator starter	DB3 / <b>SMDB3</b>

### NEW PRODUCTS

## Consumer - Office Equipment

APPLICATION	LOAD / FUNCTION	KEY PRODUCTS
<b>Power supply (SMPS)</b>		
Inrush current limiter	Inrush current limitation by shunting series resistor	TYN608 / TYN612 / TYN 616 / TYN 625 / BTW69-600 / BTB12-600BW / <b>STIL02-P5</b> / <b>STIL04-P5</b>
<b>TV-Monitor</b>		
	Degaussing coil control	BTB06-600SW / BTB08-600SW / <b>ACST6-7S</b> / <b>ACST8-8CFP</b>
<b>Photocopier Printer Fax</b>		
	Heating resistor for toner	BTB08-600CW / BTB08-600SW / BTB16-600CW / BTB16-600SW / BTB24-600CW / BTB26-600B / BTB41-600B / BTA25-600B

### NEW PRODUCT

# Major Key Applications

## HVAC - Heating, Ventilation, Air Conditioning

APPLICATION	LOAD / FUNCTION	KEY PRODUCTS
<b>Air conditioner</b>		
Compressor	ON / OFF control with triac (replacing a relay)	BTA41-600B
	ON / OFF control with a triac in parallel with a relay	BTA12-600B / BTA16-600B / BTA25-600B
Indoor fan (20 to 50W)	Induction motor Speed control	Z0107MA / Z0107MN / Z0109MA / Z0109MN / Z00607MA / Z04xxME / <b>ACS110</b> / <b>ACS120</b>
Outdoor fan (Up to 50W and 50 to 100W)	Induction motor (Speed control by windings switching)	<b>ACST4-7SFP</b> / Z0405MF / Z0409MF / Z00607MA / T410-600W / T435-600W / Z0107MA / <b>ACS110</b> / <b>ACS120</b>
Heating resistor (Up to 2kW)	Heater (Temperature control)	BTB16-600SW / T2550H-600T
Heating resistor (Below 50W)	Heater (Temperature control)	<b>ACS108-5SA</b> / Z01xxMA
Cooling / Heating mode	Valve (ON / OFF control)	<b>ACS108-5SA</b> / Z01xxMA / T410-600T / Z04xxMF
<b>Deshumidifier</b>		
Compressor	Induction motor (relay controlled by a Triac)	Z01xxMA / Z01xxMN / <b>ACS108-5SA</b>
<b>Fan</b>		
Ceiling fan	Induction motor Speed control	Z00607MA / Z045MF / Z0409MF / T410-600W / T435-600W / Z0107MA / <b>ACS110</b> / <b>ACS120</b>
Desk fan	Induction motor Speed control	Z00607MA / Z045MF / Z0409MF / T410-600W / T435-600W / Z0107MA / <b>ACS110</b> / <b>ACS120</b>
<b>Room Heating Thermostat</b>		
Heater	Resistive load Temperature control	BTB08-600CW / BTBT08-600SW / T1235H-600G / T1235H-600T / BTB16-600CW / BTB16-600SW / BTB24-600CW / BTB41-600B / BTA25-600B / T2550H-600T
<b>Water Heater Electric Shower</b>		
Heater	Resistor Temperature control	BTB16-600CW / BTB16-600SW / BTB24-600CW / BTB41-600B / BTA25-600B

NEW PRODUCT

# Major Key Applications

## Industrial

APPLICATION	LOAD / FUNCTION	KEY PRODUCTS
<b>GFI (Ground fault interruptor)</b>		
GFI	Electromechanical breaker control (with dedicated IC or with Discrete components)	X00602MA / X00605MA / P0111DA / P0102MA
<b>Door opener</b>		
	Induction motor ON-OFF / reversing	Z01xxMA / <b>ACST4-7S</b> / <b>ACST6-7S</b> / <b>ACST8-8CFP</b> / T830-800W
<b>Solid state relays</b>		
	Triacs or Thyristor are power AC switches driven by opto-insulated circuits	T835-600G / T1235-600G / BTAx-600BW / BTBxx-600BW / P0111MA / BTW69-1200 / MSS40-1500 / MSS50-1400
<b>Programmable logic controller vending machine</b>		
	Static switching	T835-600G / T1235-600G / <b>ACST8-8CFP</b> / <b>ACST6-7</b> / <b>CLT3-4BT6</b>
<b>Irrigation system</b>		
	Valve control	Z01xxMA / <b>ACS108-5SA</b> / <b>T405Q-600B/H</b> / BTB04-600SL
<b>Welding equipment</b>		
	Transformer control (phase angle)	BTA41-600B / BTB24-600BW / Z0109MA / DB3 / <b>SMDB3</b>
<b>Battery charger</b>		
	Transformer control (phase angle)	BTA41-600B / BTB24-600BW / Z0109MA / DB3 / <b>SMDB3</b>

NEW PRODUCT

# Major Key Applications

## Engine ignition and control

APPLICATION	LOAD / FUNCTION	KEY PRODUCTS
<b>Engine ignition</b>		
	Capacitive Discharge (Sparks generation)	X0405MF / TS420-600B / TS820-600B / X0205MA
<b>Voltage regulation</b>		
(For small engine with fly-wheel)	DC supply voltage regulation with 2 SCR's	TYN612T / TYN812T / TN805-600B / TS820-600T / TS1220-600B
<b>Chain saw</b> <b>Lawn mover</b> <b>Leaf blower</b> <b>Trimmer</b> <b>Snow thrower</b>		
	Capacitance discharge ignition circuit	TS420-600T / TYN612T / TYN812T / TN805-600B / TS820-600T / TS1220-600B

## CROSS REFERENCE

## XL1225 to MAC12D

[illegible]

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
BCR8PM-16L		ACST8-8CFP
BCR8UM-12	BTA08-600SW	
BCR8UM-8	BTA08-600SW	
2N5060	X00602MA	
2N5061	X00602MA	
2N5062	X00602MA	
2N5063	X00602MA	
2N5064	X00602MA	
2N6071	T435-600H	
2N6071A	T405-600H	
2N6071B		
2N6073	T435-400H	T405-600H
2N6073A	T405-600H	
2N6073B		
2N6075	T435-600H	T405-600H
2N6075A	T405-600H	
2N6075B		
2N6342	BTB08-600BW	
2N6343	BTB08-600BW	
2N6344	BTB08-600BW	
2N6344A	BTB08-600B	
2N6345	BTB10-800BW	
2N6346	BTB08-600B	
2N6346A	BTB12-600B	
2N6347	BTB08-600B	
2N6347A	BTB12-600B	
2N6348	BTB08-600B	
2N6348A	BTB12-600B	
2N6349		
2N6349A	BTB12-800B	
2N6394	TYN612	
2N6395	TYN612	
2N6396	TYN612	
2N6397	TYN612	
2N6398	TYN612	
2N6399	TYN812	
2N6400	TYN616	
2N6401	TYN616	
2N6402	TYN616	
2N6403	TYN616	
2N6404	TYN616	
2N6405	TYN816	
2N6504	TYN625	
2N6505	TYN625	
2N6506	TYN625	
2N6507	TYN625	
2N6508	TYN625	
2N6509	TYN825	
2N6564	X00602MA	
2N6565	X00602MA	
C106A		X0402MF
C106B		X0402MF
C106D		X0402MF
C106D1		X0402MF
C106F		X0402MF
C106M		X0402MF
C106M1		X0402MF
C122A1	TYN608	
C122B1	TYN608	
C122D1	TYN608	
C122F1	TYN608	
C122M1	TYN608	
C122N1	TYN808	
MAC08BT1	Z0109MN	
MAC08DT1	Z0109MN	
MAC08MT1	Z0109MN	
MAC12D	BTB12-600CW	

(\*) Programmable logic controllers

# CROSS REFERENCE

## MAC12HCD to MAC229-6

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
MAC12HCD	BTB12-600BW	
MAC12HCM	BTB12-600BW	
MAC12HCN	BTB12-800BW	
MAC12M	BTB12-600CW	
MAC12N	BTB12-800CW	
MAC137-500	BTB08-600CW	
MAC137-600	BTB08-600CW	
MAC137-700	BTB08-800CW	
MAC137-800	BTB08-800CW	
MAC137G500	BTB08-600BW	
MAC137G600	BTB08-600BW	
MAC137G700	BTB08-800BW	
MAC137G800	BTB10-800BW	
MAC15-10	BTB16-800BW	
MAC15-10FP		BTA16-800BW
MAC15-4	BTB16-600BW	
MAC15-4FP		BTA16-600BW
MAC15-6	BTB16-600BW	
MAC15-6FP		BTA16-600BW
MAC15-8	BTB16-600BW	
MAC15-8FP		BTA16-600BW
MAC15A10	BTB16-800B	
MAC15A10FP		BTA16-800B
MAC15A4	BTB16-600B	
MAC15A4FP		BTA16-600B
MAC15A6	BTB16-600B	
MAC15A6FP		BTA16-600B
MAC15A8	BTB16-600B	
MAC15A8FP		BTA16-600B
MAC15D	BTB16-600CW	
MAC15M	BTB16-600CW	
MAC15N	BTB16-800CW	
MAC15SM		BTB16-600SW
MAC15SN		BTB16-800SW
MAC16-10	BTB16-800BW	
MAC16-4	BTB16-600BW	
MAC16-6	BTB16-600BW	
MAC16-8	BTB16-600BW	
MAC16CD	BTB16-600CW	
MAC16CM	BTB16-600CW	
MAC16CN	BTB16-800CW	
MAC16D	BTB16-600BW	
MAC16M	BTB16-600BW	
MAC16N	BTB16-800BW	
MAC210-10	BTB10-800BW	
MAC210-10FP		BTA10-800BW
MAC210-4	BTB10-600BW	
MAC210-4FP		BTA10-600BW
MAC210-6	BTB10-600BW	
MAC210-6FP		BTA10-600BW
MAC210-8	BTB10-600BW	
MAC210-8FP		BTA10-600BW
MAC210A10FP		BTA10-800B
MAC210A4	BTB10-600B	
MAC210A4FP		BTA10-600B
MAC210A6	BTB10-600B	
MAC210A6FP		BTA10-600B
MAC210A8	BTB10-600B	
MAC210A8FP		BTA10-600B
MAC212-10	BTB12-800BW	
MAC212-10FP		BTA12-800BW
MAC212-4	BTB12-600BW	
MAC212-4FP		BTA12-600BW
MAC212-6	BTB12-600BW	
MAC212-6FP		BTA12-600BW
MAC212-8	BTB12-600BW	
MAC212-8FP		BTA12-600BW

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
MAC212A10	BTB12-800B	BTA12-800B
MAC212A10FP		
MAC212A4	BTB12-600B	BTA12-600B
MAC212A4FP		
MAC212A6	BTB12-600B	BTA12-600B
MAC212A6FP		
MAC212A8	BTB12-600B	
MAC212A8FP		BTA12-600B
MAC218-10	BTB10-800BW	
MAC218-10FP		BTA08-800BW
MAC218-4	BTB08-600BW	
MAC218-4FP		BTA08-600BW
MAC218-6	BTB08-600BW	
MAC218-6FP		BTA08-600BW
MAC218-8	BTB08-600BW	
MAC218-8FP		BTA08-600BW
MAC218A10		BTB10-800B
MAC218A10FP		BTA08-800C
MAC218A4	BTB08-600B	
MAC218A4FP		BTA08-600B
MAC218A6	BTB08-600B	
MAC218A6FP		BTA08-600B
MAC218A8	BTB08-600B	
MAC218A8FP		BTA08-600B
MAC223-10	BTB24-800BW	
MAC223-10FP		BTA24-800BW
MAC223-4	BTB24-600BW	
MAC223-4FP		BTA24-600BW
MAC223-6	BTB24-600BW	
MAC223-6FP		BTA24-600BW
MAC223-8	BTB24-600BW	
MAC223-8FP		BTA24-600BW
MAC223A10		BTB24-800BW
MAC223A10FP		BTA24-800BW
MAC223A4		BTB24-600BW
MAC223A4FP		BTA24-600BW
MAC223A6		BTB24-600BW
MAC223A6FP		BTA24-600BW
MAC223A8		BTB24-600BW
MAC223A8FP		BTA24-600BW
MAC224-10		BTB41-800B
MAC224-4		BTB41-600B
MAC224-6		BTB41-600B
MAC224-8		BTB41-600B
MAC224A10		BTB41-800B
MAC224A4		BTB41-600B
MAC224A6		BTB41-600B
MAC224A8		BTB41-600B
MAC228-10	BTB08-800TW	
MAC228-10FP		BTA08-800TW
MAC228-4	BTB08-600TW	
MAC228-4FP		BTA08-600TW
MAC228-6	BTB08-600TW	
MAC228-6FP		BTA08-600TW
MAC228-8	BTB08-600TW	
MAC228-8FP		BTA08-600TW
MAC228A4		BTB08-600SW
MAC228A4FP		BTA08-600SW
MAC228A6		BTB08-600SW
MAC228A6FP		BTA08-600SW
MAC228A8		BTB08-600SW
MAC228A8FP		BTA08-600SW
MAC229-10	BTB08-800TW	
MAC229-10FP		BTA08-700TW
MAC229-4	BTB08-600SW	
MAC229-4FP		BTA08-600TW
MAC229-6	BTB08-600SW	

## CROSS REFERENCE

## MAC229-6FP to T2322D

[illegible]

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
MCR106-6	X0402MF	
MCR106-8	X0402MF	
MCR12D	TYN612	
MCR12DCM	TN1215-600B	
MCR12DSM	TS1220-600B	
MCR12M	TYN612	
MCR12N	TYN812	
MCR16D	TYN616	
MCR16M	TYN616	
MCR16N	TYN816	
MCR218-10	TYN808	
MCR218-2	TYN608	
MCR218-3	TYN608	
MCR218-4	TYN608	
MCR218-6	TYN608	
MCR218-8	TYN608	
MCR22-2	X0202MA	
MCR22-3	X0202MA	
MCR22-4	X0202MA	
MCR22-6	X0202MA	
MCR22-8	X0202MA	
MCR25D	TYN625	
MCR25M	TYN625	
MCR25N	TYN825	
MCR264-10	TYN840	
MCR264-4	TYN640	
MCR264-6	TYN640	
MCR264-8	TYN640	
MCR265-10		BTW69-800
MCR265-2		BTW69-600
MCR265-4		BTW69-600
MCR265-6		BTW69-800
MCR265-8		BTW69-800
MCR310-4		TS820-600T
MCR310-6		TS820-600T
MCR310-8		TS820-700T
MCR506-2		TS820-600T
MCR506-3		TS820-600T
MCR506-4		TS820-600T
MCR506-6		TS820-600T
MCR506-8		TS820-600T
MCR68-2	TYN612	
MCR68-3	TYN612	
MCR68-4	TYN612	
MCR68-6	TYN612	
MCR69-2	TYN616	
MCR69-3	TYN616	
MCR69-4	TYN616	
MCR69-6	TYN616	
MCR703A		TS420-600B
MCR703A1		TS420-600T
MCR72-10		TS820-700T
MCR72-2	TS820-600T	
MCR72-3	TS820-600T	
MCR72-4	TS820-600T	
MCR72-6	TS820-600T	
MCR72-8	TS820-600T	
MCR8D	TYN608	
MCR8DCM	TN815-600B	
MCR8DCN	TN815-800B	
MCR8DSM	TS820-600B	
MCR8M	TYN608	
MCR8N	TYN808	
MCR8SD	TS820-600T	
MCR8SM	TS820-600T	
T2322B	T410-600H	
T2322D	T410-600H	



# CROSS REFERENCE

## T2322M to BT137B-600G

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
T2322M	T410-600H	
T2323B	T410-600H	
T2323D	T410-600H	
T2323M	T410-600H	
T2500B	BTB06-600C	
T2500BFP		BTA06-600C
T2500D	BTB06-600C	
T2500DFP		BTA06-600C
T2500M	BTB06-600C	
T2500MFP		BTA06-600C
T2800B	BTB08-600C	
T2800D	BTB08-600C	
T2800M	BTB08-600C	
2V5P4M	X0405MF	
BR100/03	DB3	
BT131-500	Z0103MA	
BT131-600	Z0103MA	
BT132-500D	Z0107MA	
BT132-600D	Z0107MA	
BT134-500		Z0410MF
BT134-500D		Z0405MF
BT134-500E		Z0409MF
BT134-500F		Z0410MF
BT134-500G		Z0410MF
BT134-600		Z0410MF
BT134-600D		Z0405MF
BT134-600E		Z0409MF
BT134-600F		Z0410MF
BT134-600G		Z0410MF
BT134-800		Z0410NF
BT134-800E		Z0409NF
BT134-800F		Z0410NF
BT134-800G		Z0410NF
BT134W-500	Z0110MN	
BT134W-500D	Z0107MN	
BT134W-500E	Z0109MN	
BT134W-500F	Z0110MN	
BT134W-500G	Z0110MN	
BT134W-600	Z0110MN	
BT134W-600D	Z0107MN	
BT134W-600E	Z0109MN	
BT134W-600F	Z0110MN	
BT134W-600G	Z0110MN	
BT136-500	T435-600T	
BT136-500D	T405-600T	
BT136-500E	T410-600T	
BT136-500F	T435-600T	
BT136-500G	T435-600T	
BT136-600	T435-600T	
BT136-600D	T435-600T	
BT136-600E	BTB04-600SL	
BT136-600F	T405-600T	
BT136-600G	T410-600T	
BT136-800	T435-600T	
BT136-800E	T435-800T	
BT136-800F	T410-800T	
BT136-800G	T410-800T	
BT136B-500	T435-800T	
BT136B-500D	T435-600B	
BT136B-500E	T405-600B	
BT136B-500F	T410-600B	
BT136B-500G	T410-600B	
BT136B-600	T435-600B	
BT136B-600D	T435-600B	
BT136B-600E	T405-600B	
BT136B-600F	T410-600B	
BT136B-600G	T410-600B	

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
BT136B-600G	T435-600B	
BT136B-800		T435-700B
BT136B-800E	T410-800B	
BT136B-800F	T410-800B	
BT136B-800G		T435-700B
BT136M-500	T435-600B	
BT136M-500D	T405-600B	
BT136M-500E	T410-600B	
BT136M-500F	T410-600B	
BT136M-500G	T435-600B	
BT136M-600	T435-600B	
BT136M-600D	T405-600B	
BT136M-600E	T410-600B	
BT136M-600F	T410-600B	
BT136M-600G	T435-600B	
BT136M-800		T435-700B
BT136M-800E	T410-800B	
BT136M-800F	T410-800B	
BT136M-800G		T435-700B
BT136S-500	T435-600B	
BT136S-500D	T405-600B	
BT136S-500E	T410-600B	
BT136S-500F	T410-600B	
BT136S-500G	T435-600B	
BT136S-600	T435-600B	
BT136S-600D	T405Q-600B	
BT136S-600E	T410-600B	
BT136S-600F	T410-600B	
BT136S-600G	T435-600B	
BT136S-800		T435-700B
BT136S-800G		T435-700B
BT136x-500	T435-600W	
BT136x-500D	T405-600W	
BT136x-500E	T410-600W	
BT136x-500F	T410-600W	
BT136x-500G	T435-600W	
BT136x-600	T435-600W	
BT136x-600D	T405-600W	
BT136x-600E	T410-600W	
BT136x-600F	T410-600W	
BT136x-600G	T435-600W	
BT136x-800	T435-600W	
BT136x-800E	T410-800W	
BT136x-800F	T410-800W	
BT136x-800G	T435-600W	
BT137-500	BTB08-600C	
BT137-500D		BTB08-600SW
BT137-500E		BTB08-600SW
BT137-500F	BTB08-600C	
BT137-500G	BTB08-600B	
BT137-600	BTB08-600C	
BT137-600D		BTB08-600SW
BT137-600E		BTB08-600SW
BT137-600F	BTB08-600C	
BT137-600G	BTB08-600B	
BT137-800	BTB08-800C	
BT137-800E		BTB08-800SW
BT137-800F	BTB08-800C	
BT137-800G		BTB10-800B
BT137B-500	T835-600G	
BT137B-500E		T835-600G
BT137B-500F		T835-600G
BT137B-500G	T835-600G	
BT137B-600	T835-600G	
BT137B-600E		T835-600G
BT137B-600F		T835-600G
BT137B-600G	T835-600G	

# CROSS REFERENCE

## BT137M-500 to BT139x-600G

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
BT137M-500	T835-600B	T835-600B
BT137M-500D		T810-600B
BT137M-500E		T810-600B
BT137M-500F		T810-600B
BT137M-500G		T835-600B
BT137M-600		T835-600B
BT137M-600D		T810-600B
BT137M-600E		T810-600B
BT137M-600F		T810-600B
BT137M-600G		T835-600B
BT137S-500	T810-600B	T810-600B
BT137S-500D		T810-600B
BT137S-500E		T810-600B
BT137S-500F		T810-600B
BT137S-500G		T835-600B
BT137S-600		T835-600B
BT137S-600D		T810-600B
BT137S-600E		T810-600B
BT137S-600F		T810-600B
BT137S-600G		T835-600B
BT137x-500	T810-600B	T810-600B
BT137x-500D		T810-600B
BT137x-500E		T810-600B
BT137x-500F		T810-600B
BT137x-500G		T810-600B
BT137x-600		T810-600B
BT137x-600D		T810-600B
BT137x-600E		T810-600B
BT137x-600F		T810-600B
BT137x-600G		T810-600B
BT137x-800	BTB12-600B	BTB12-600B
BT137x-800F		BTB12-600B
BT137x-800G		BTB12-600B
BT138-500		BTB12-600B
BT138-500E		BTB12-600B
BT138-500F		BTB12-600B
BT138-500G		BTB12-600B
BT138-600		BTB12-600B
BT138-600E		BTB12-600B
BT138-600F		BTB12-600B
BT138-600G	BTB12-800B	BTB12-800B
BT138-800		BTB12-800B
BT138-800E		BTB12-800B
BT138-800F		BTB12-800B
BT138-800G		BTB12-800B
BT138B-500		BTB12-800B
BT138B-500E		BTB12-800B
BT138B-500F		BTB12-800B
BT138B-500G		BTB12-800B
BT138B-600		BTB12-800B
BT138B-600E	T1235-600G	T1235-600G
BT138B-600F		T1235-600G
BT138B-600G		T1235-600G
BT138F-500		T1235-600G
BT138F-500E		T1235-600G
BT138F-500F		T1235-600G
BT138F-500G		T1235-600G
BT138F-600		T1235-600G
BT138F-600E		T1235-600G
BT138F-600F		T1235-600G
BT138F-600G	T1235-600G	T1235-600G
BT138F-700		T1235-600G
BT138F-700E		T1235-600G
BT138F-700F		T1235-600G
BT138F-700G		T1235-600G
BT138F-800		T1235-600G
BT138F-800E		T1235-600G
BT138F-800F		T1235-600G
BT138F-800G		T1235-600G
BT138F-800E		T1235-600G

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
BT138F-800F	BTB16-600B	BTB16-600B
BT138F-800G		BTB16-600B
BT138x-500		BTB16-600B
BT138x-500E		BTB16-600B
BT138x-500F		BTB16-600B
BT138x-500G		BTB16-600B
BT138x-600		BTB16-600B
BT138x-600E		BTB16-600B
BT138x-600F		BTB16-600B
BT138x-600G		BTB16-600B
BT138x-800	T1635-600G	T1635-600G
BT138x-800E		T1635-600G
BT138x-800F		T1635-600G
BT138x-800G		T1635-600G
BT139-500		T1635-600G
BT139-500E		T1635-600G
BT139-500F		T1635-600G
BT139-500G		T1635-600G
BT139-500H		T1635-600G
BT139-600		T1635-600G
BT139-600E	T1635-600G	T1635-600G
BT139-600F		T1635-600G
BT139-600G		T1635-600G
BT139-600H		T1635-600G
BT139-800		T1635-600G
BT139-800F		T1635-600G
BT139-800G		T1635-600G
BT139-800H		T1635-600G
BT139B-500		T1635-600G
BT139B-500E		T1635-600G
BT139B-500F	T1635-600G	T1635-600G
BT139B-500G		T1635-600G
BT139B-500H		T1635-600G
BT139B-600		T1635-600G
BT139B-600E		T1635-600G
BT139B-600F		T1635-600G
BT139B-600G		T1635-600G
BT139B-600H		T1635-600G
BT139F-500		T1635-600G
BT139F-500E		T1635-600G
BT139F-500F	T1635-600G	T1635-600G
BT139F-500G		T1635-600G
BT139F-500H		T1635-600G
BT139F-600		T1635-600G
BT139F-600E		T1635-600G
BT139F-600F		T1635-600G
BT139F-600G		T1635-600G
BT139F-600H		T1635-600G
BT139F-700		T1635-600G
BT139F-700E		T1635-600G
BT139F-700F	T1635-600G	T1635-600G
BT139F-700G		T1635-600G
BT139F-700H		T1635-600G
BT139F-800		T1635-600G
BT139F-800E		T1635-600G
BT139F-800F		T1635-600G
BT139F-800G		T1635-600G
BT139F-800H		T1635-600G
BT139x-500		T1635-600G
BT139x-500E		T1635-600G
BT139x-500F	T1635-600G	T1635-600G
BT139x-500G		T1635-600G
BT139x-500H		T1635-600G
BT139x-600		T1635-600G
BT139x-600E		T1635-600G
BT139x-600F		T1635-600G
BT139x-600G		T1635-600G
BT139x-600H		T1635-600G
BT139x-800		T1635-600G
BT139x-800E		T1635-600G

## CROSS REFERENCE

## BT139x-600H to BTA204x-500E

[illegible][illegible]

# CROSS REFERENCE

## BTA204x-500F to T106B1

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
BTA204x-500F	T410-600W	
BTA204x-600B	T435-600W	
BTA204x-600C	T435-600W	
BTA204x-600D	T405-600W	
BTA204x-600E	T410-600W	
BTA204x-600F	T410-600W	
BTA204x-800B	T435-800W	
BTA204x-800C	T435-800W	
BTA204x-800E	T410-800W	
BTA204x-800F	T410-800W	
BTA208-500B	BTB08-600BW	
BTA208-500C	BTB08-600CW	
BTA208-500D	BTB08-600TW	
BTA208-500E	BTB08-600SW	
BTA208-500F	BTB08-600SW	
BTA208-600B	BTB08-600BW	
BTA208-600C	BTB08-600CW	
BTA208-600D	BTB08-600TW	
BTA208-600E	BTB08-600SW	
BTA208-600F	BTB08-600SW	
BTA208-800B	BTB08-800BW	
BTA208-800C	BTB08-800CW	
BTA208-800E	BTB08-800SW	
BTA208-800F	BTB08-800SW	
BTA208B-500C	T835-600G	
BTA208B-500E	T835-600G	
BTA208B-500F		
BTA208B-600C	T835-600G	
BTA208B-600E	T835-600G	
BTA208B-600F	T835-600B	
BTA208M-500B	T835-600B	
BTA208M-500C	T810-600B	
BTA208M-500D	T810-600B	
BTA208M-500E	T810-600B	
BTA208M-500F	T810-600B	
BTA208M-600B	T835-600B	
BTA208M-600C	T835-600B	
BTA208M-600D	T810-600B	
BTA208M-600E	T810-600B	
BTA208M-600F	T810-600B	
BTA208S-500B	T835-600B	
BTA208S-500C	T835-600B	
BTA208S-500D		
BTA208S-500E	T810-600B	
BTA208S-500F	T810-600B	
BTA208S-600B	T835-600B	
BTA208S-600C	T835-600B	
BTA208S-600D		
BTA208S-600E	T810-600B	
BTA208S-600F	T810-600B	
BTA208x-500B		
BTA208x-500C		
BTA208x-500D		
BTA208x-500E		
BTA208x-500F		
BTA208x-600B		
BTA208x-600C		
BTA208x-600D		
BTA208x-600E		
BTA208x-600F		
BTA208x-800B		
BTA208x-800C		
BTA208x-800E		
BTA208x-800F		
BTA212-500B	BTB12-600BW	
BTA212-500C	BTB12-600CW	
BTA212-500D		

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
BTA212-500E	BTB12-600SW	
BTA212-500F	BTB12-600SW	
BTA212-600B	BTB12-600BW	
BTA212-600C	BTB12-600CW	
BTA212-600D		BTB12-600SW
BTA212-600E	BTB12-600SW	
BTA212-600F	BTB12-600SW	
BTA212-800B	BTB12-800BW	
BTA212-800C	BTB12-800CW	
BTA212B-500B	T1235-600G	
BTA212B-500C	T1235-600G	
BTA212B-500D		T1235-600G
BTA212B-500E		T1235-600G
BTA212B-500F		T1235-600G
BTA212B-600B	T1235-600G	
BTA212B-600C	T1235-600G	
BTA212B-600D		T1235-600G
BTA212B-600E		T1235-600G
BTA212B-600F		T1235-600G
BTA212x-500B		BTB12-600BW
BTA212x-500C		BTB12-600BW
BTA212x-500D		BTB12-600SW
BTA212x-500E		BTB12-600SW
BTA212x-500F		BTB12-600CW
BTA212x-600B		BTB12-600BW
BTA212x-600C		BTB12-600BW
BTA212x-600D		BTB12-600SW
BTA212x-600E		BTB12-600SW
BTA212x-600F		BTB12-600CW
BTA212x-800B		BTB12-800BW
BTA212x-800C		BTB12-800CW
BTA216-500B	BTB16-600BW	
BTA216-500C	BTB16-600CW	
BTA216-500E	BTB16-600SW	
BTA216-500F	BTB16-600SW	
BTA216-600B	BTB16-600BW	
BTA216-600C	BTB16-600CW	
BTA216-600E	BTB16-600SW	
BTA216-600F	BTB16-600SW	
BTA216-800B	BTB16-800BW	
BTA216-800C	BTB16-800CW	
BTA216B-500B	T1635-600G	
BTA216B-500C	T1635-600G	
BTA216B-600B	T1635-600G	
BTA216B-600C	T1635-600G	
BTA216x-500B		BTB16-600BW
BTA216x-500C		BTB16-600CW
BTA216x-500E		BTB16-600SW
BTA216x-500F		BTB16-600SW
BTA216x-600B		BTB16-600CW
BTA216x-600C		BTB16-600CW
BTA216x-600E		BTB16-600SW
BTA216x-600F		BTB16-600SW
BTA216x-800B		BTB16-800BW
BTA216x-800C		BTB16-800CW
BTA225-500B	BTB24-600BW	
BTA225-500C	BTB24-600CW	
BTA225-600B	BTB24-600BW	
BTA225-600C	BTB24-600CW	
BTA225-800B	BTB24-800BW	
BTA225-800C	BTB24-800CW	
BTA225B-500B	T2535-600G	
BTA225B-500C	T2535-600G	
BTA225B-600B	T2535-600G	
BTA225B-600C	T2535-600G	
T106A1	X0402MF	
T106B1	X0402MF	

# CROSS REFERENCE

## T106C1 to Q2008F41

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
T106C1	X0402MF	
T106D1	X0402MF	
T106E1	X0402MF	
T106F1	X0402MF	
T106M1	X0402MF	
T107A1	X0402MF	
T107B1	X0402MF	
T107C1	X0402MF	
T107D1	X0402MF	
T107E1	X0402MF	
T107F1	X0402MF	
T107M1	X0402MF	
TIC225D	BTB08-600SW	
TIC225M	BTB08-600SW	
TIC225N	BTB08-800SW	
TIC225S	BTB08-800SW	
MCR100-6	XL0840	
EC103A	X00602MA	
EC103A1		P0111DA
EC103A2	P0115DA	
EC103A3	X00602MA	
EC103B	X0205MA	
EC103B1		P0111DA
EC103B2	P0115DA	
EC103B3	X00602MA	
EC103C	X00602MA	
EC103C1		P0111DA
EC103C2	P0115DA	
EC103C3	X00602MA	
EC103D	X00602MA	
EC103D1		P0111DA
EC103D2	P0115DA	
EC103D3	X00602MA	
EC103E	X00602MA	
EC103E2		P0111MA
EC103E3	X00602MA	
EC103M	X00602MA	
EC103M1		P0111DA
EC103M2		P0111MA
EC103M3	X00602MA	
EC113A	X00602MA	
EC113A3	X00602MA	
EC113B	X00602MA	
EC113B3	X00602MA	
EC113C	X00602MA	
EC113C3	X00602MA	
EC113D	X00602MA	
EC113D3	X00602MA	
EC113E	X00602MA	
EC113E3	X00602MA	
EC113M	X00602MA	
EC113M3	X00602MA	
HT-32	DB3	
HT-32A		DB3
HT-32B		DB3
HT-34B		DB3
HT-35		DB3
HT-36A		DB3
HT-36B		DB3
HT-5761		DB3
HT-5761A		DB3
HT-5762		DB3TG
K2400E70		LIC01-215H
K2400F1		LIC01-215H
K2400S		LIC01-215B
K2401F1		LIC01-215H
L2004F32	Z0402MF	

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
L2004F51	T410-600D	
L2004F52	Z0405MF	
L2004F61	Z0409ME	
L2004F62	Z0405MF	
L2004F81	TS420-600T	BTB04-600A
L2004F82	Z0409MF	
L2004L5	BTA04-600T	
L2004L6	BTA04-600D	
L2006L5		BTB06-600T
L2006L6		BTB06-600S
L2006L8	BTA06-600SW	
L2008L6	BTA08-600TW	
L2008L8	BTA08-600SW	
L201E3		Z0103MA
L201E5		Z0107MA
L201E6		Z0107MA
L201E8	Z0109MA	
L4004D5	T405-600B	
L4004D6	T410-600B	
L4004F32	Z0402MF	
L4004F51	Z0405MF	
L4004F52	Z0405MF	
L4004F61	Z0409DE	
L4004F62	Z0405MF	
L4004F81	Z0410ME	
L4004F82	Z0409MF	
L4004L3		BTA06-600TW
L4004L5	T405-600T	
L4004L6	BTA04-600S	
L4006L5		BTA06-600TW
L4006L6	BTA06-600TW	
L4006L8	BTA06-600SW	
L4008L6	BTA08-600T	
L4008L8	BTA08-600SW	
L401E3		Z0103MA
L401E5		Z0107MA
L401E6	Z0109DA	
L401E8	Z0110MA	
L6004D5	T405-600B	
L6004D6	T410-600B	
L6004F32	Z0402MF	
L6004F51	Z0405ME	
L6004F52	Z0405MF	
L6004F61	Z0409MF	
L6004F62	Z0409MF	
L6004F81		BTB04-600S
L6004F82	Z0409MF	
L6004L3		Z0302MF
L6004L5	T405-600T	
L6004L6	T410-600T	
L6006L5	BTA06-600TW	
L6006L6	BTA06-600TW	
L6006L8	BTA08-600TW	
L6008L6	BTA08-600TW	
L6008L8	BTA08-600SW	
L601E3		Z0103MA
L601E5	Z0107MA	
L601E5		Z0107MA
L601E6	Z0109MA	
L601E6		Z0107MA
L601E8	Z0110MA	
Q2004L3	BTA06-600SW	
Q2006L4	BTA06-600C	
Q2006LH4	BTA06-600CW	
Q2006R4	BTB06-600B	
Q2006RH4	BTB06-600CW	
Q2008F41		BTB08-600CW

# CROSS REFERENCE

## Q2008L4 to Q7008LH4

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
Q2008L4 Q2008LH4 Q2008R4 Q2008RH4 Q2010L5 Q2010LH5 Q2010R5 Q2010RH5 Q2012LH5 Q2012RH5 Q2015L5 Q2015L6 Q2015L5 Q2015R5 Q2015R6 Q201E3 Q201E4 Q2025J6 Q2025K6 Q2025L5 Q2025L6 Q2025P Q2025R6 Q2040K7 Q2040P Q2x8E3 Q2x8E4 Q4004L3 Q4004L4 Q4006H4 Q4006L4 Q4006LH4 Q4006R4 Q4006RH4 Q4008H4 Q4008L4 Q4008LH4 Q4008R4 Q4008RH4 Q4010L5 Q4010LH5 Q4010R5 Q4010RH5 Q4012LH5 Q4012RH5 Q4015L5 Q4015L6 Q4015L5 Q4015R5 Q4015R6 Q401E3 Q401E4 Q4025J6 Q4025K6 Q4025L5 Q4025L6 Q4025P Q4025R5 Q4025R5 Q4025R6 Q4040K7 Q4040P Q5004L3 Q5004L4 Q5006L4 Q5006LH4 Q5006R4	BTA08-600CW BTB08-600C BTB08-600CW BTA10-600BW BTA10-600BW BTB10-600B BTB10-600BW BTA12-600BW BTB12-600BW BTA16-600BW BTA16-600BW BTB16-600BW BTB16-600BW BTA26-600BW BTB24-600BW BTA24-600BW BTB24-600BW Z0109MA Z0110MA BTA06-600SW BTA06-600C BTA06-600CW BTB06-600C BTB06-600CW BTA08-600CW BTB08-600CW BTA10-600BW BTA10-600BW BTB10-600BW BTB10-600BW BTA12-600BW BTB12-600BW BTA16-600BW BTA16-600BW BTB16-600BW BTA26-600BW BTB24-600BW BTA24-600B BTA06-600SW BTA06-600CW	BTA08-600C BTA16-600AW BTB16-600B Z0109MA Z0110MA BTA26-600BW BTA25-600B BTB41-600B BTA40-600B BTA06-600CW BTB06-600C BTB08-600C BTA08-600C BTB08-600C BTA16-600B BTA16-600AW BTB16-600B Z0109MA Z0110MA BTA26-600BW BTA25-600B BTB19-600B BTB24-600B BTA41-600B BTA40-600B BTA06-600CW BTA06-600CW BTB06-600CW

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
Q5006RH4 Q5008L4 Q5008LH4 Q5008R4 Q5008RH4 Q5010L5 Q5010LH5 Q5010R5 Q5010RH5 Q5012LH5 Q5012RH5 Q5015L5 Q5015L6 Q5015R5 Q5015R6 Q501E3 Q501E4 Q5025J6 Q5025K6 Q5025L5 Q5025L6 Q5025P Q5025R6 Q5040P Q6004L3 Q6004L4 Q6006L5 Q6006LH4 Q6006R5 Q6006RH4 Q6008L5 Q6008LH4 Q6008R5 Q6008RH4 Q6010L5 Q6010LH5 Q6010R5 Q6010RH5 Q6012LH5 Q6012RH5 Q6015L5 Q6015L6 Q6015R5 Q6015R6 Q601E3 Q601E4 Q6025J6 Q6025K6 Q6025L5 Q6025L6 Q6025P Q6025R5 Q6025R6 Q6025R6 Q602SP Q6040K7 Q6040P Q6x8E3 Q6x8E4 Q7004L4 Q7006L5 Q7006LH4 Q7006R5 Q7006RH4 Q7008L5 Q7008L5 Q7008LH4	BTB06-600CW BTA08-600CW BTB08-600C BTB08-600CW BTA10-600B BTA10-600BW BTB10-600B BTB10-600BW BTA12-600BW BTB12-600BW BTA16-600B BTA16-600B BTB16-600B BTB16-600BW BTA26-600BW BTB24-600BW BTA24-600BW BTB24-600BW BTA06-600SW BTA06-600BW BTA06-600CW BTB06-600B BTB06-600CW BTA08-600B BTA08-600CW BTB08-600BW BTB08-600CW BTA10-600B BTA10-600BW BTB10-600BW BTB10-600BW BTA12-600BW BTB12-600BW BTB16-600BW BTA16-600BW BTB16-600BW BTA26-600BW BTB24-600BW BTA24-600BW BTB24-600BW BTB25-600BW Z0109MA Z0110MA BTA06-700B BTA06-700CW BTB06-800BW BTA08-800B BTA08-700CW	BTA08-600CW BTB15-600B Z0109MA Z0110MA BTA26-600BW BTA25-600BW BTW41-500G BTA06-600CW BTB16-600B Z0109MA Z0110MA BTA26-600BW BTA25-600BW BTB24-600C BTA25-600B BTA41-600B BTA40-600B BTA06-800CW BTB06-800BW BTA08-700C

# CROSS REFERENCE

Q7008R5 to S6035K

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
Q7008R5 Q7008RH4 Q7010L5 Q7010L5 Q7010LH5 Q7010R5 Q7010RH5 Q7012LH5 Q7012RH5 Q7015L5 Q7015L6 Q7015R5 Q7015R6 Q7025J6 Q7025K6 Q7025L5 Q7025L6 Q7025P Q7025R5 Q7025R6 Q7040K7 Q7040P Q8004F41 Q8004L4 Q8006L5 Q8006LH4 Q8006R5 Q8006RH4 Q8008L5 Q8008LH4 Q8008R5 Q8008RH4 Q8010L5 Q8010LH5 Q8010R5 Q8010RH5 Q8010RHS Q8012LH5 Q8012RH5 Q8015L5 Q8015L6 Q8015R5 Q8015R6 Q8025J6 Q8025K6 Q8025L5 Q8025L6 Q8025P Q8025R5 Q8025R6 Q8040K7 S0506F1 S0506LS2 S0506LS3 S0508LS2 S0508LS3 S0508R S0510R S0512R S0516R S051E S0525R S0535K S0555M S0555W S1006F1 S1006LS2	BTB08-800BW BTB08-800CW   BTB10-800BW  BTA12-700BW BTB12-600BW BTB16-800BW  BTB16-800BW  BTA26-800BW BTB24-800BW BTA20-700BW   BTB20-700BW    BTA06-800CW BTB06-800BW BTB06-800CW BTA08-800BW BTA08-800CW BTB08-800B BTB08-800BW BTA10-800BW BTA10-800BW BTB10-800BW BTB10-800BW  BTA12-800BW BTB12-800BW  BTA16-800BW  BTB16-800BW  BTA26-800BW BTB24-800BW BTA24-800BW  BTB24-800BW  TS820-600T   TYN608 TYN612 TYN612 TYN616  TYN625  BTW69-600  TS820-600T	BTA10-700AW BTA10-700C BTA10-700CW  BTB10-700CW   BTA16-700BW BTB16-700C  BTA26-800BW   BTA25-800BW BTB24-700B  BTA41-700B BTA40-700B T435-800T BTA06-800CW BTA06-800BW          BTB10-800BW  BTA16-800B  BTB16-800BW  BTA26-800BW   BTA25-800BW BTB24-800B  BTA41-800B  TXN406 TXN406 TXN608 TXN608   X0202MA  BTW69-600  BTW69-600  TXN406

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
S1006LS3 S1008LS2 S1008LS3 S1008R S1010R S1012R S1016R S101E S1025R S1035K S1055M S1055W S2006F1 S2006LS2 S2006LS3 S2008LS2 S2008LS3 S2008R S2010R S2012R S2016R S201E S2025R S2035J S2035K S2055M S2055W S2065J S2065K S2070W S2800A S2800B S2800D S2800F S2800M S2800N S4006F1 S4006LS2 S4006LS3 S4008LS2 S4008LS3 S4008R S4010R S4012R S4016R S401E S4025R S4035J S4035K S4055M S4055W S4065J S4065K S4070W S6006F1 S6006LS2 S6006LS3 S6008LS2 S6008LS3 S6008R S6010R S6012R S6016R S601E S6025R S6035J S6035K	TYN608 TYN612 TYN612 TYN616  TYN625  BTW69-600  TS820-600T   TYN608 TYN612 TYN612 TYN616  TYN625  BTW68-600 BTW69-600  BTW69-600  TYN612 TYN612 TYN612 TYN612 TYN612 TYN812  TYS606-4 TYS607-4 TYS806-4 TYS807-4 TYN408 TYN410 TYN612 TYN616  TYN625  BTW68-600 BTW69-800  BTW69-600 BTW69-600    TYN608 TYN612 TYN612 TYN616  TYN625 BTW68-601 BTW68-600	TXN406 TXN608 TXN608     X0202MA  BTW69-600  BTW69-600  TXN406 TXN406 TXN608 TXN608       X0202MA  BTW68-600  BTW69-600 BTW67-600  BTW70-600N    TS820-600T          X0202MA  BTW69-800 BTW67-600  TYN606 TS820-600T TS820-600T TS820-600T TS820-600T   X0202MA



# CROSS REFERENCE

## S6055M to AC10DGM

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
S6055M	BTW69-800	BTW69-800
S6055W		BTW67-600
S6065J		
S6065K	BTW69-600	
S6370	X00602MA	
S6744		TYN612
S6785G		TYN608
S8008R	TYN808	
S8010R	TYN812	
S8012R	TYN812	
S8016R	TYN816	
S8025R	TYN825	
S8035J	BTW69-800	
S8035K	BTW68-800	
S8055M	BTW69-800	
S8055W		BTW69-800
S8065J		BTW67-800
S8065K	BTW69-800	
T106A1	X0402MF	TYN406-1
T106B1	X0402MF	X0403BE
T106B2	X0402MF	
T106D1	X0402MF	
T106D2	X0405ME	
T106F1	TS420-600T	
T106M1	X0402ME	
T106M2	X0402MF	
TCR22-2	X0202MA	
TCR22-3	X0202MA	
TCR22-4	X0202MA	
TCR22-6	X0202DA	
TCR22-8	X0202MA	
SM12JZ47	T1230-600W	
SM12JZ47A	T1220-600W	
SM12LZ47		T1030-800W
SM12LZ47A	T1020-800W	
SM16JZ47	T1630-600W	
SM16JZ47A	T1620-600W	
SM1L43		ACS108-5SA
SM2LZ47		ACS110-7SB2
SM5LZ47	T630-800W	ACST6-7FP
SM6JZ47	T630-600W	
SM6JZ47A	T620-600W	
SM8JZ47A	T820-600W	
SM8JZ47	T830-600W	
SM8LZ47	T830-800W	ACST8-8CFP
USF05G49	P0102DN	
USF10G48		TN1625-600G
USF10J48		TN1625-600G
USF3G48		TS420-600B
USF3J48		TS420-600B
USF5G48		TN805-600B
USF5J48		TN805-600B
USF8G48	TN1215-600G	
USF8J48	TN1215-600G	
USM12G48	T1235-600G	
USM12G48A		T1235-600G
USM12J48		T1235-600G
USM12J48A		
USM16G48	T1635-600G	
USM16G48A		T1635-600G
USM16J48	T1635-600G	
USM16J48A		T1635-600G
USM3G48		T410-600B
USM3J48		T410-600B
USM6G48	T835-600G	
USM6G48A		T835-600G
USM6J48	T835-600G	

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
USM6J48A		T835-600G
USM8G48	T835-600G	
USM8G48A		T835-600G
USM8J48	T835-600G	
USM8J48A		T835-600G
XL1225-AB		
XL1225-AD	XL0840	
YCR02	XL0840	
YCR08	X0202MA	
03P2M	TYN612	
03P4M	X00602MA	
03P4MF	X00602MA	
03P4MG	P0111DA	
03P6MG	P0111DA	
03P6MG	X0205MA	
2P4M	X0205MA	
2P4M	X0402MF	
2P5M	X0402MF	
2P5M	X0402MF	
2P6M	X0402MF	
2P6M	X0402MF	
2S2M	X0402MF	
2S4M	X0402MF	
2S4M	X0402MF	
2V5P4M	X0402MF	
3P4J-Z	X0405MF	
3P4MH	TS420-600B	
3P4MH		
3P5MH	TS820-600B	
3P5MH	TYN608	
3P6MH	TYN608	
3P6MH	TS820-600B	
5P4J-Z	TYN608	
5P4M	TYN608	
5P5M	TYN608	
5P6J-Z	TS820-600B	
5P6M	TYN608	
8P2M	TYN412	
8P4J-Z	TN1215-600B	
8P4M	TYN612	
AC01DGM	Z0103MA	
AC01DGM	Z0103MA	
AC01DGM	Z0103MA	
AC01DJM	Z0107MN	
AC03DGM	Z0409MF	
AC03DGM	Z0409MF	
AC03DJM	T405-700H	
AC03DJM-Z	T410-600B	
AC03DSM	T410-600W	
AC03DSMA	T410-600W	
AC03FGM	Z0409MF	
AC03FGM	Z0409MF	
AC03FJM	T405-700H	
AC03FJM-Z	T410-600B	
AC03FSM	T410-600W	
AC03FSMA	T410-600W	
AC05DGM	BTB06-600SW	
AC05EGM	BTB06-600SW	
AC05FGM	BTB06-600SW	
AC08DGM	BTB08-600SW	
AC08EGM	BTB08-600SW	
AC08FGM	BTB08-600SW	
AC08FSM	T820-600W	
AC0V8DGM	Z00607MA	
AC0V8DGM	Z00607MA	
AC0V8DGM	Z00607MA	
AC10DGM		BTB10-600CW



## CROSS REFERENCE

## AC10EGM to URSF05G49-5P

[illegible]

INDUSTRY STANDARD	ST EQUIVALENT	ST NEAREST
SF8G41A	TYN612	
SF8G48		TYN612
SF8J48		TYN612
SH8G41		TYN412
SHR0R3D42	X00602MA	
SM08G43	Z0103MA	
SM08G43	Z0103MA	
SM08G43	Z0103MA	
SM12G45	BTB12-600CW	
SM12G45A	BTB12-600SW	
SM12G48		BTB12-600CW
SM12G48A		BTB12-600SW
SM12J45	BTB12-600CW	
SM12J45A	BTB12-600SW	
SM12J48		BTB12-600CW
SM12J48A		BTB12-600SW
SM16G45	BTB16-600CW	
SM16G45A	BTB16-600SW	
SM16G48		BTB16-600CW
SM16G48A		BTB16-600SW
SM16J45	BTB16-600CW	
SM16J45A	BTB16-600SW	
SM16J48		BTB16-600CW
SM16J48A		BTB16-600SW
SM1G43	Z00607MA	
SM1G43	Z00607MA	
SM1G43	Z00607MA	
SM1J43	Z00607MA	
SM1J43	Z00607MA	
SM1J43	Z00607MA	
SM1L43	Z0107NA	
SM1L43	Z0107NA	
SM25GZ51		BTA26-800CW
SM25JZ51		BTA26-800CW
SM2GZ47		Z0409MF
SM2GZ47		Z0409MF
SM2GZ47A		Z0405MF
SM2JZ47		Z0409MF
SM2JZ47		Z0409MF
SM2JZ47A		Z0405MF
SM2LZ47		Z0409NF
SM3G45	T410-600T	
SM3G48		Z0410MF
SM3G48		Z0410MF
SM3GZ47	T410-600W	
SM3J45	T410-600T	
SM3J48		Z0410MF
SM3J48		Z0410MF
SM3JZ47	T410-600W	
SM6G45	BTB06-600CW	
SM6G45A	BTB06-600SW	
SM6G48		BTB06-600CW
SM6G48A		BTB06-600SW
SM6J45	BTB06-600CW	
SM6J45A	BTB06-600SW	
SM6J48		BTB06-600CW
SM6J48A		BTB06-600SW
SM8G45	BTB08-600CW	
SM8G45A	BTB08-600SW	
SM8G48		BTB08-600CW
SM8G48A		BTB08-600SW
SM8J45	BTB08-600CW	
SM8J45A	BTB08-600SW	
SM8J48		BTB08-600CW
SM8J48A		BTB08-600SW
URSF05G49-1P	P0102DN	
URSF05G49-3P	P0102DN	
URSF05G49-5P	P0102DN	

# APPLICATION NOTES

Available on ST web site "<http://www.st.com>"

<i>THYRISTORS and TRIACs, on important parameters - the holding current .....</i>	<i>AN302</i>
<i>Latching current .....</i>	<i>AN303</i>
<i>Use of TRIACs on inductive loads .....</i>	<i>AN307</i>
<i>Control by a TRIAC of an inductive load - How to select a suitable circuit ? .....</i>	<i>AN308</i>
<i>Protect your TRIACs .....</i>	<i>AN328</i>
<i>TRIAC control by pulse transformer .....</i>	<i>AN436</i>
<i>New TRIACs - is the snubber circuit necessary ? .....</i>	<i>AN437</i>
<i>TRIACs + MICROCONTROLLER, safety precautions for development tools .....</i>	<i>AN438</i>
<i>Improvement in the TRIAC commutation .....</i>	<i>AN439</i>
<i>TRIAC drive circuit for operation in quadrants I and III .....</i>	<i>AN440</i>
<i>TRIACs for microwave ovens .....</i>	<i>AN441</i>
<i>TRIACs and MICROCONTROLLERS - the easy connection .....</i>	<i>AN442</i>
<i>SCRs and TRIACs thermal management - precaution for Handling and mounting .....</i>	<i>AN533</i>
<i>SCRs and TRIACs dice .....</i>	<i>AN858</i>
<i>SCRs and TRIACs in automotive applications .....</i>	<i>AN871</i>
<i>The new ACS™ series for home appliances: a breakthrough in ruggedness and drive for home appliances .....</i>	<i>AN1172</i>
<i>Ring wave tests with ACS402 / ACS108 driving valves and pumps .....</i>	<i>AN1296</i>
<i>ST6200C software description for cooling thermostat application .....</i>	<i>AN1353</i>
<i>Z01 and ACS comparison toward fast voltage transient .....</i>	<i>AN1379</i>
<i>CLT3-4BT6 demoboard: check the robustness of the CLT3-4BT6 .....</i>	<i>AN1608</i>

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- . DIACs
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- . AC switches

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