

MOSFETs & IGBTs

Progress in Power Switching

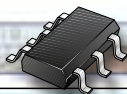


Selection Guide

STMicroelectronics
More Intelligent Solutions



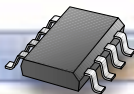
SOT23-6L



| V _{DSS} (V) | R _{DS(on)} @ 10V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 4.5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|----------------------------------|-----------|-----------------------------|-----------------------------------|-----------------------------------|
| -60 | 0.27 | STT2PF60L | -2 | 0.3 | 44 |
| -30 | 0.165 | STT3PF30L | -3 | 0.2 | 5.5 |
| -20 | 0.155 | STT3PF20L | -3 | 0.19 | 10 |
| 30 | 0.065 | STT4NF30L | 4 | 0.09 | 12 |
| 100 | 0.8 | STT1NF100 | 1 | | 4.5 |

| V _{DSS} (V) | R _{DS(on)} @ 4.5V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 2.7V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|-----------------------------------|-----------|-----------------------------|-----------------------------------|-----------------------------------|
| -20 | 0.09 | STT5PF20V | 5 | 0.11 @ 2.5V | - |
| | 0.19 | STT3PF20V | -3 | 0.250 | 3.8 |
| 20 | 0.04 | STT5NF20V | 5 | 0.045 | 8.5 |

SO-8

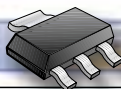


| V _{DSS} (V) | R _{DS(on)} @ 10V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 4.5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|----------------------------------|-------------|-----------------------------|-----------------------------------|-----------------------------------|
| -45 | 0.1 | STS3DPFS45 | -3 | | 23 |
| -30 | 0.04 | STS6PF30L | -6 | 0.05 | 35 |
| | 0.06 | STS5PF30L | -5 | 0.075 | 12.5 |
| | 0.08 | STS4DPF30L | -4 | 0.1 | 16 |
| | 0.09 | STS3DPFS30 | -3 | | 23 |
| | 0.16 | STS3DPF30L | -3 | 0.19 | 5.5 |
| -20 | 0.16 | STS3DPFS30L | -3 | 0.19 | 5.5 |
| | 0.07 | STS4DPFS20L | -4 | 0.085 | 12.5 |
| | 0.07 | STS4DPF20L | -4 | 0.085 | 12.5 |
| | 0.01 | STS12NF30L | 12 | 0.012 | 35 |
| | 0.011 | STSJ25NF3LL | 25 | 0.013 | 21 |
| 30 | 0.011 | STS11NF3LL | 11 | 0.013 | 25 |
| | 0.012 | STS11NF30L | 11 | 0.0185 | 19 |
| | 0.019 | STS9NF3LL | 9 | 0.022 | 22 |
| | 0.023 | STS9NF30L | 9 | 0.035 | 30 |
| | 0.05 | STS4DNFS30L | 4 | 0.06 | 6.5 |
| | 0.065 | STS3DNF30L | 3.5 | 0.09 | 8 |
| | 0.11 | STS2DNFS30L | 3 | 0.15 | 4.5 |
| | 0.11 | STS2DNF30L | 3 | 0.15 | 4.5 |
| | 0.022 / 0.08 | STS7C4F30L | 7/-4 | 0.026 / 0.1 | 17.5 / 12.5 |
| | 0.065 / 0.165 | STS3C3F30L | 3 / -3 | 0.090 / 0.20 | 16 / 11 |
| 60 | 0.022 | STS7NF60L | 7 | 0.028 | 14 |
| | 0.055 | STS5NF60L | 5 | 0.065 | 15 |
| | 0.055 | STS4DNF60L | 4 | 0.065 | 15 |
| | 0.08 | STS3DNE60L | 3 | 0.1 | 18 |
| | 0.23 | STS2DNE60 | 2 | | 12 |
| 100 | 0.077 | STS4NF100 | 4 | | 30 |
| | 0.25 | STS2NF100 | 2 | | 12 |
| 200 | 1.5 | STS1NS20 | 1 | | 11 |
| 250 | 1.5 / 3.2 | STS1C1S250 | 0.8 / 0.56 | | 15 / 16 |
| 450 | 4.5 | STS1DNC45 | 1.5 | | 8 |
| 600 | 15 | STS1NC60 | 1 | | 4 |

| V _{DSS} (V) | R _{DS(on)} @ 4.5V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 2.7V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|-----------------------------------|-------------|-----------------------------|-----------------------------------|-----------------------------------|
| -20 | 0.2 | STS2DPF20V | 2 | 0.25 | 3.8 |
| | 0.2 | STS2DPFS20V | -2 | 0.25 | 3.8 |
| 20 | 0.035 | STS6NF20V | 6 | 0.04 | 8 |
| | 0.04 | STS5DNF20V | 5 | 0.04 | 8 |

D = Dual; DPFS = PChannel + Schottky Diode; LL = 4.5V Drive Optimization; C = Complementary Pair
STSJ = PowerSO-8; V = Super Logic Level

SOT-223



| V _{DSS} (V) | R _{DS(on)} @ 10V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 4.5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|----------------------------------|-----------|-----------------------------|-----------------------------------|-----------------------------------|
| -60 | 0.2 | STN3PF06 | -2.5 | | 16 |
| 30 | 0.05 | STN4NF03L | 4 | 0.06 | 6.5 |
| 60 | 0.1 | STN3NF06L | 3 | 0.12 | 7 |
| | 0.1 | STN3NF06 | 2 | | 13 |
| 100 | 0.18 | STN3NF10 | 3 | | 15.3 |
| | 0.25 | STN2NF10 | 2 | | 12 |
| | 0.4 | STN2NE10L | 1.8 | 0.45 | 10 |
| | 0.4 | STN2NE10 | 1.8 | | 10 |
| | 0.8 | STN1NF10 | 1 | | 4.5 |
| 200 | 1.5 | STN1N20 | 1 | | 13 |
| 600 | 8 | STN1HNC60 | 0.4 | | 8.5 |
| | 15 | STN1NC60 | 0.3 | | 4 |
| 800 | 20 | STN1NB80 | 0.2 | | 10 |

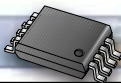
POWERFLAT



| V _{DSS} (V) | R _{DS(on)} @ 4.5V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 4.5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|-----------------------------------|------------|-----------------------------|-----------------------------------|-----------------------------------|
| 30 | 0.0065 | STL28NF3LL | 28 | 0.0095 | 70 |
| | 0.01 | STL30NF3LL | 30 | 0.011 | 60 |
| 100 | 0.03 | STL35NF10 | 35 | | 60 |
| | 0.065 | STL22NF10 | 22 | | 40 |
| 650 | 1.8 | STL5NK65Z | 5 | | 31 |

LL = 4.5V Drive Optimization;

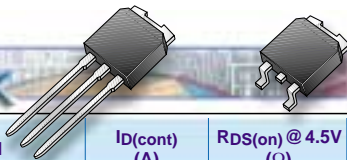
TSSOP8



| V _{DSS} (V) | R _{DS(on)} @ 4.5V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 2.5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|-----------------------------------|-----------|-----------------------------|-----------------------------------|-----------------------------------|
| 20 | 0.035 | STC5NF20V | 5 | 0.045 | 11 |
| 30 | 0.025 | STC6NF30V | 6 | 0.03 | 22 |

V = Super Logic Level

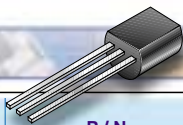
IPAK-DPAK



| VDss (V) | RDS(on) @ 10V (Ω) | P / N | ID(cont) (A) | RDS(on) @ 4.5V (Ω) | Qg @ 10V(Typ) (nC) |
|-------------|-------------------------------|---------------|-----------------|--------------------------------|-----------------------|
| -250 | 3.2 | STD3PS25 | 2.5 | | |
| -60 | 0.2 | STD10PF06 | 10 | | 16 |
| 20 | 0.013 | STD40NF02L | 40 | | 36 |
| 30 | 0.0095 | STD60NF3LL | 60 | 0.011 | 60 |
| | 0.0115 | STD40NF3LL | 40 | 0.0135 | 43 |
| | 0.013 | STD45NF03L | 45 | 0.018 | 43 |
| | 0.016 | STD38NF03L | 38 | 0.019 | 27 |
| | 0.02 | STD35NF3LL/-1 | 35 | 0.023* | 22 |
| | 0.023 | STD29NF03L | 29 | 0.038 | 18 |
| 55 | 0.05 | STD17NF03L/-1 | 16 | 0.06 | 6.5 |
| | 0.015 | STD60NF55L/-1 | 60 | 0.017 | 40 |
| 60 | 0.02 | STD35NF06L | 35 | 0.022 | 25 |
| | 0.024 | STD35NF06 | 35 | | 44.5 |
| | 0.028 | STD30NF06L/-1 | 28 | 0.03 | 43 |
| | 0.028 | STD30NF06/-1 | 28 | | 58 |
| | 0.04 | STD20NE06 | 20 | | 50 |
| | 0.05 | STD19NE06/-1 | 19 | | 40 |
| | 0.05 | STD19NE06L/-1 | 19 | 0.06 | 40 |
| | 0.1 | STD12NF06L/-1 | 12 | 0.12 | 7 |
| 100 | 0.1 | STD12NF06/-1 | 12 | | 10 |
| | 0.038 | STD25NF10 | 25 | | 55 |
| | 0.045 | STD20NF10/-1 | 20 | | 40 |
| | 0.065 | STD15NF10 | 15 | | 30 |
| | 0.13 | STD10NF10 | 10 | | 15.3 |
| | 0.25 | STD6NF10 | 6 | | 12 |
| | 0.4 | STD5NE10/-1 | 5 | | 10 |
| 200 | 0.4 | STD5NE10L/-1 | 5 | 0.45 | 10 |
| | 0.4 | STD7NS20 | 7 | | 31 |
| | 0.8 | STD5N20/-1 | 5 | | 19 |
| | 1.5 | STD4N20/-1 | 4 | | 15 |
| 250 | 0.45 | STD8NS25/-1 | 8 | | 37 |
| | 1.1 | STD4NS25/-1 | 4 | | 27 |
| | 2 | STD2NB25/-1 | 2.5 | | 10 |
| 400 | 1 | STD6NC40/-1 | 5 | | 18 |
| | 1.8 | STD4NB40 | 3.7 | | 20 |
| 450 | 4.5 | STD2NC45/-1 | 1.5 | | 8 |
| 500 | 0.8 | STD5NM50/-1 | 5 | | 13 |
| | 1.5 | STD4NC50/-1 | 3.7 | | 18 |
| | 2.5 | STD3NM50/-1 | 3 | | 5 |
| | 2.7 | STD3NC50/-1 | 3 | | 15 |
| | 4 | STD2NC50/-1 | 2 | | 13.5 |
| 600 | 1 | STD5NM60/-1 | 5 | | 13 |
| | 1.4 | STD3NM60/-1 | 2 | | 10 |
| | 2.2 | STD3NC60/-1 | 3.2 | | 18 |
| | 3 | STD2NM60/-1 | 2 | | 5 |
| | 3.6 | STD2NC60/-1 | 2 | | 15 |
| | 5 | STD1HNC60-1 | 1 | | 11.3 |
| | 8 | STD1NC60-1 | 1 | | 8.5 |
| 700 | 15 | STD1LNC60-1 | 1 | | 9.5 |
| | 4.5 | STD2NC70Z/-1 | 1.7 | | 17 |
| 800 | 5.5 | STD2NB80/-1 | 1.9 | | 17 |
| | 20 | STD1NB80/-1 | 1 | | 10 |

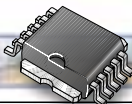
LL = 4.5V Drive Optimization;

TO-92



| V _{DSS} (V) | R _{DS(on)} @ 10V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 4.5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|---|-----------|-----------------------------|--|-----------------------------------|
| 450 | 4.5 | STQ1NC45 | 0.5 | | 8 |
| 600 | 8 | STQ1HNC60 | 0.4 | | 11 |
| | 15 | STQ1NC60 | 0.3 | | 10 |

POWERSO-10



| V _{DSS} (V) | R _{DS(on)} @ 10V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 4.5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|---|--------------|-----------------------------|--|-----------------------------------|
| 20 | 0.0025 | STV160NF02L | 160 | 0.0035 | 115 |
| | 0.0027 | STV160NF02LA | 160 | 0.0064 | 130 |
| | 0.0028 | STV160NF03L | 160 | 0.0067 | 103 |
| 30 | 0.003 | STV160NF03LA | 160 | 0.007 | 123 |

I²PAK-D²PAK



| V _{DSS} (V) | R _{DS(on)} @ 10V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 4.5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|---|------------------|-----------------------------|--|-----------------------------------|
| -55 | 0.02 | STB80PF55 | -80 | | 180 |
| 20 | 0.0027 | STB160NF02L | 160 | 0.0064 | 130 |
| | 0.009 | STB70NF02L | 70 | 0.015 | 36 |
| 30 | 0.003 | STB160NF3LL | 160 | 0.0043 | 160 |
| | 0.0032 | STB100NF03L-03 | 100 | 0.0045 | 88 |
| | 0.004 | STB80NF03L-04/-1 | 80 | 0.005 | 160 |
| | 0.0065 | STB90NF03L | 90 | 0.012 | 75 |
| | 0.008 | STB85NF3LL | 85 | 0.0095 | 30 |
| | 0.01 | STB70NF3LL | 70 | 0.012 | 43 |
| | 0.01 | STB70NF03L | 70 | 0.018 | 35 |
| | 0.013 | STB55NF03L | 55 | 0.021 | 25 |
| | 0.018 | STB45NF3LL/-1 | 45 | 0.02 | 12.5 |
| 40 | 0.004 | STB160NF4LL | 100 | 0.0068 | 160 |
| | 0.0042 | STB100NF04L | 160 | 0.007 | 160 |
| 55 | 0.0065 | STB80NF55-06/-1 | 80 | | 190 |
| | 0.0065 | STB80NF55L-06/-1 | 80 | 0.008 | 97 |
| | 0.008 | STB80NF55L-08 | 80 | 0.01 | 110 |
| | 0.008 | STB80NF55-08/-1 | 80 | | 108 |
| 60 | 0.014 | STB60NF06/-1 | 60 | | 66 |
| | 0.014 | STB60NF06L/-1 | 60 | 0.016 | 45 |
| | 0.022 | STB55NF06 | 55 | | 60 |
| | 0.018 | STB55NF06L | 45 | 0.02 | 50 |
| | 0.028 | STB45NF06 | 38 | | 43 |
| | 0.028 | STB45NF06L | 38 | 0.03 | 43 |
| 75 | 0.01 | STB80NF75L/-1 | 80 | 0.013 | 110 |
| | 0.013 | STB75NF75 | 75 | | 150 |
| | 0.013 | STB75NF75L | 75 | 0.015 | 120 |
| 100 | 0.015 | STB80NF10 | 80 | | 140 |
| | 0.025 | STB50NE10L | 50 | 0.03 | 82 |
| | 0.03 | STB40NF10 | 40 | | 60 |
| | 0.032 | STB40NF10L | 40 | 0.036 | 80 |
| | 0.035 | STB35NF10 | 35 | | 55 |
| | 0.045 | STB30NF10 | 30 | | 80 |
| | 0.06 | STB24NF10 | 24 | | 30 |
| | 0.085 | STB22NE10L | 22 | 0.1 | 31 |
| | 0.13 | STB14NF10 | 14 | | 15.5 |

LL = 4.5V Drive Optimization;

I²PAK-D²PAK

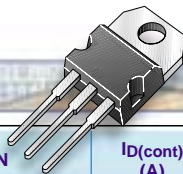


Contd.

| V _{DSS} (V) | R _{DS(on)} @ 10V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 4.5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|----------------------------------|---------------|-----------------------------|-----------------------------------|-----------------------------------|
| 200 | 0.18 | STB19NB20 | 19 | | 29 |
| | 0.4 | STB10NB20 | 10 | | 17 |
| 250 | 0.15 | STB22NS25Z | 20 | | 120 |
| | 0.28 | STB16NS25 | 13 | | 58 |
| | 0.45 | STB8NS25 | 8 | | 37 |
| 400 | 0.55 | STB11NC40/-1 | 10 | | 42 |
| 500 | 0.23 | STB20NM50/-1 | 20 | | 40 |
| | 0.25 | STB20NM50FD | 20 | | 40 |
| | 0.35 | STB12NM50/-1 | 12 | | 28 |
| | 0.38 | STB14NK50Z/-1 | 14 | | 92 |
| | 0.52 | STB10NC50/-1 | 10 | | 41 |
| | 0.85 | STB8NC50/-1 | 8 | | 36 |
| | 1.5 | STB5NC50/-1 | 5.5 | | 18 |
| 600 | 0.29 | STB20NM60 | 20 | | 55 |
| | 0.45 | STB11NM60/-1 | 11 | | 30 |
| | 0.55 | STB13NK60Z/-1 | 13 | | 66 |
| | 0.75 | STB10NK60Z/-1 | 10 | | 30 |
| | 1.2 | STB6NC60 | | | 35 |
| | 2 | STB5NB60/-1 | 5 | | 21 |
| | 2.2 | STB4NC60/-1 | 4.2 | | 16.5 |
| 700 | 3.6 | STB3NC60/-1 | 3 | | 13 |
| | 1.2 | STB8NC70Z/-1 | 6.8 | | 60 |
| | 1.38 | STB7NC70Z/-1 | 6 | | 47 |
| | 2 | STB5NC70Z | 4.6 | | 27 |
| 800 | 1.5 | STB7NC80Z/-1 | 6 | | 57 |
| | 1.8 | STB6NC80Z/-1 | 5.4 | | 45 |
| | 2.8 | STB4NC80Z/-1 | 4 | | 23 |
| 900 | 2 | STB6NC90Z/-1 | 5.3 | | 51 |
| | 2.5 | STB5NC90Z/-1 | 4.6 | | 40 |
| | 3.5 | STB3NC90Z/-1 | 3.5 | | 40 |

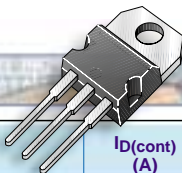
LL = 4.5V Drive Optimization;

TO-220



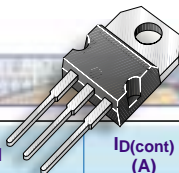
| V _{DSS} (V) | R _{DS(on)} @ 10V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|----------------------------------|----------------|-----------------------------|---------------------------------|-----------------------------------|
| -60 | 0.2 | STP12PF06 | -12 | | 21 |
| -55 | 0.02 | STP80PF55 | -80 | | 180 |
| 30 | 0.0032 | STP100NF03L-03 | 100 | 0.0045 | 88 |
| | 0.004 | STP80NF03L-04 | 80 | 0.005 | 100 |
| | 0.006 | STP80NE03L-06 | 80 | | 95 |
| | 0.0065 | STP90NF03L | 90 | 0.012 | 47 |
| | 0.008 | STP85NF3LL | 85 | 0.009 | 40 |
| | 0.01 | STP70NF3LL | 70 | 0.012 | 43 |
| | 0.01 | STP60NF03L | 60 | 0.015 | 43 |
| | 0.0135 | STP55NF03L | 55 | | 58 |
| | 0.018 | STP45NF3LL | 45 | 0.02 | 22 |
| | 0.022 | STP40NF03L | 40 | 0.035 | 18 |
| | 0.05 | STP22NF03L | 22 | 0.06 | 9 |
| 34 | 0.008 | STP80NS04Z | 80 | | 60 |
| | 0.015 | STP60NS04Z | 60 | | 70 |
| 40 | 0.0042 | STP100NF04L | 100 | 0.005 | 160 |
| 50 | 0.04 | BUZ11 | 30 | | 70 |
| | 0.055 | BUZ11A | 26 | | 50 |
| 55 | 0.0065 | STP80NF55-06 | 80 | | 190 |
| | 0.0065 | STP80NF55L-06 | 80 | 0.008 | 97 |
| | 0.008 | STP80NF55L-08 | 80 | 0.01 | 110 |
| | 0.008 | STP80NF55-08 | 80 | | 108 |

LL = 4.5V Drive Optimization;



| V _{DSS} (V) | R _{DS(on)} @ 10V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|---|--------------|-----------------------------|--|-----------------------------------|
| 60 | 0.01 | STP80NE06-10 | 80 | 0.016 | 140 |
| | 0.014 | STP60NF06L | 60 | | 45 |
| | 0.014 | STP60NF06 | 60 | | 66 |
| | 0.018 | STP55NF06 | 55 | 0.028 | 40 |
| | 0.018 | STP55NF06L | 55 | | 55 |
| | 0.028 | STP45NF06L | 38 | | 43 |
| | 0.028 | STP45NF06 | 45 | 0.03 | 43 |
| | 0.04 | STP36NE06 | 36 | | 50 |
| | 0.05 | STP30NE06 | 30 | | 35 |
| | 0.05 | STP30NE06L | 30 | 0.06 | 40 |
| | 0.07 | STP20NE06L | 20 | | 28 |
| | 0.08 | STP20NE06 | 20 | | 25 |
| 75 | 0.1 | STP16NF06 | 16 | 0.085 | 13 |
| | 0.1 | STP16NF06L | 16 | | 10 |
| | 0.01 | STP80NF75L | 80 | 0.12 | 110 |
| | 0.013 | STP75NF75 | 75 | 0.013 | 110 |
| 100 | 0.013 | STP75NF75L | 75 | 0.016 | 110 |
| | 0.015 | STP80NF10 | 80 | 0.03 | 140 |
| | 0.025 | STP50NE10L | 50 | | 82 |
| | 0.028 | STP50NE10 | 50 | | 82 |
| | 0.03 | STP40NF10 | 40 | 0.036 | 60 |
| | 0.032 | STP40NF10L | 40 | | 46 |
| | 0.035 | STP35NF10 | 35 | | 55 |
| | 0.045 | STP30NF10 | 30 | 0.1 | 80 |
| | 0.06 | STP24NF10 | 14 | | 30 |
| | 0.077 | IRF540 | 30 | | 80 |
| | 0.085 | STP22NE10L | 22 | 0.1 | 48 |
| | 0.1 | STP20NE10 | 20 | | 38 |
| | 0.13 | STP14NF10 | 14 | | 15.5 |
| | 0.16 | IRF530 | 16 | 0.1 | 32 |
| | 0.27 | IRF520 | 10 | | 15 |
| 200 | 0.18 | STP19NB20 | 19 | | 29 |
| | 0.18 | IRF640 | 18 | | 55 |
| | 0.4 | STP10NB20 | 10 | | 17 |
| | 0.4 | IRF630 | 9 | | 31 |
| 250 | 0.28 | STP16NS25 | 13 | | 59 |
| | 0.45 | STP8NS25 | 8 | | 37 |
| | 1.1 | STP6NB25 | 6 | | 12 |
| | 2 | STP4NB30 | 4 | | 12 |
| 400 | 0.55 | IRF740 | 10 | | 35 |
| | 0.55 | STP11NC40 | 10 | | 35 |
| | 1 | STP7NC40 | 6 | | 18 |
| | 1 | IRF730 | 5.5 | | 30 |
| | 1.8 | STP5NB40 | 4.7 | | 14.5 |
| 500 | 0.25 | STP20NM50 | 20 | | 40 |
| | 0.25 | STP20NM50FD | 20 | | 40 |
| | 0.35 | STP12NM50 | 12 | | 28 |
| | 0.38 | STP14NK50Z | 14 | | 92 |
| | 0.52 | STP10NC50 | 10 | | 41 |
| | 0.75 | IRF840 | 8 | | 39 |
| | 0.8 | STP8NM50 | 8 | | 13 |
| | 0.85 | STP8NC50 | 8 | | 36 |
| | 1.5 | STP5NC50 | 5.5 | | 18 |
| | 1.5 | IRF830 | 4.5 | | 22 |
| | 2.7 | STP4NC50 | 4 | | 12.5 |
| | 3 | IRF820 | 2.5 | | 12 |
| 600 | 0.29 | STP20NM60 | 20 | | 55 |
| | 0.45 | STP11NM60 | 11 | | 30 |
| | 0.5 | STP11NM60FD | 11 | | 30 |
| | 0.55 | STP13NK60Z | 13 | | 66 |
| | 0.75 | STP10NK60Z | 10 | | 30 |
| | 1 | STP8NM60 | 8 | | 13 |

TO-220



| V _{DSS} (V) | R _{DS(on)} @ 10V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|---|-----------|-----------------------------|--|-----------------------------------|
| 600 | 1 | STP8NC60 | 7 | | 34 |
| | 1.2 | STP6NK60Z | 5 | | 25 |
| | 1.2 | STP6NC60 | 6 | | 35 |
| | 1.25 | STP6LNC60 | 5.8 | | 32 |
| | 1.4 | STP4NM60 | 4 | | 10 |
| | 1.6 | STP5NK60Z | 6 | | 34 |
| | 2.2 | STP4NC60 | 4.2 | | 16.5 |
| | 3.6 | STP3NC60 | 3 | | 13 |
| 700 | 8 | STP2NC60 | 1.9 | | 11.5 |
| | 1.2 | STP8NC70Z | 6.8 | | 60 |
| | 1.38 | STP7NC70Z | 6 | | 47 |
| | 2 | STP5NC70Z | 4.6 | | 27 |
| 800 | 4.7 | STP3NC70Z | 2.5 | | 17 |
| | 1.5 | STP7NC80Z | 6 | | 57 |
| | 1.8 | STP6NC80Z | 5.4 | | 45 |
| | 2.8 | STP4NC80Z | 4 | | 27 |
| | 5.5 | STP3NB80 | 2.6 | | 17 |
| 900 | 2 | STP6NC90Z | 5.3 | | 52 |
| | 2.5 | STP5NC90Z | 4.6 | | 40 |
| | 2.9 | STP4NB90 | 4.4 | | 30 |
| | 3.5 | STP3NC90Z | 3.5 | | 40 |
| 1000 | 2.7 | STP5NB100 | 5 | | 39 |
| | 4.4 | STP4NB100 | 4.4 | | 32 |
| | 6 | STP3NB100 | 3 | | 22 |

TO-220FP



| V _{DSS} (V) | R _{DS(on)} @ 10V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 4.5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|---|-----------------|-----------------------------|--|-----------------------------------|
| 30 | 0.0018 | STP45NF3LLFP | 45 | 0.002 | 22 |
| | 0.038 | STP22NF03LFP | 20 | 0.05 | 6.5 |
| 55 | 0.0065 | STP80NF55-06FP | 60 | | 190 |
| | 0.0065 | STP80NF55L-06FP | 60 | 0.008 | 97 |
| 60 | 0.014 | STP60NF06LFP | 60 | 0.016 | 35 |
| | 0.014 | STP60NF06FP | 60 | | 49 |
| | 0.018 | STP55NF06FP | 55 | | 40 |
| | 0.018 | STP55NF06LFP | 55 | 0.02 | 60 |
| | 0.04 | STP36NE06FP | 20 | | 50 |
| | 0.05 | STP30NE06LFP | 17 | 0.06 | 40 |
| | 0.05 | STP30NE06FP | 30 | | 40 |
| | 0.07 | STP20NE06LFP | 13 | 0.085 | 28 |
| | 0.085 | STP20NE06FP | 13 | | 28 |
| | 0.12 | STP14NF06FP | 14 | | 11.2 |
| | 0.1 | STP16NF06FP | 11 | | 20 |
| 100 | 0.045 | STP30NF10FP | 30 | | 80 |
| 200 | 0.1 | STP16NF06LFP | 10 | 0.12 | 7.3 |
| | 0.18 | STP19NB20FP | 10 | | 29 |
| | 0.18 | IRF640FP | 18 | | 55 |
| | 0.4 | STP10NB20FP | 6 | | 17 |
| | 0.4 | IRF630FP | 9 | | 31 |
| 250 | 0.45 | STP8NS25FP | 8 | | 37 |
| | 0.8 | STP16NS25FP | 16 | | 29 |
| | 1.1 | STP6NB25FP | 3.7 | | 12 |
| 400 | 0.55 | STP11NC40FP | 6 | | 29 |
| | 0.55 | STP11NB40FP | 6 | | 29 |
| | 1 | STP7NC40FP | 7 | | 18 |

LL = 4.5V Drive Optimization;

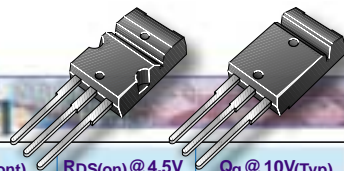


| V_{DSS} (V) | $R_{DS(on)}$ @ 10V (Ω) | P / N | $I_{D(cont)}$ (A) | $R_{DS(on)}$ @ 4.5V (Ω) | Q_g @ 10V(Typ) (nC) |
|------------------|------------------------------------|--------------|----------------------|-------------------------------------|--------------------------|
| 400 | 1.8 | STP5NB40FP | 3.1 | | 14.5 |
| 500 | 0.23 | STP20NM50FP | 20 | | 40 |
| | 0.35 | STP12NM50FP | 12 | | 28 |
| | 0.38 | STP14NK50ZFP | 14 | | 92 |
| | 0.52 | STP10NC50FP | 10 | | 41 |
| | 0.85 | STP8NC50FP | 8 | | 36 |
| | 1.5 | STP5NC50FP | 5.5 | | 18 |
| | 2.7 | STP4NC50FP | 4 | | 12.5 |
| 600 | 0.29 | STP20NM60FP | 20 | | 55 |
| | 0.45 | STP11NM60FP | 11 | | 30 |
| | 0.55 | STP13NK60ZFP | 13 | | 66 |
| | 0.75 | STP10NK60ZFP | 10 | | 30 |
| | 0.75 | STP9NC60FP | 9 | | 44 |
| | 1 | STP8NM60FP | 8 | | 13 |
| | 1 | STP8NC60FP | 7 | | 34 |
| | 1.2 | STP5NK60ZFP | 5 | | 25 |
| | 1.2 | STP6NC60FP | 6 | | 35 |
| | 1.25 | STP6LNC60FP | 5.8 | | 32 |
| | 1.6 | STP6NK60ZFP | 6 | | 34 |
| | 2.2 | STP4NC60FP | 4.2 | | 16.5 |
| | 3.6 | STP3NC60FP | 3 | | 13 |
| | 4 | STP2HNC60FP | 2.2 | | 15.5 |
| | 8 | STP2NC60FP | 1.9 | | 11.5 |
| 650 | 0.75 | STP9NC65FP | 8 | | 62 |
| 700 | 1.2 | STP8NC70ZFP | 6.8 | | 60 |
| | 1.38 | STP7NC70ZFP | 6 | | 47 |
| | 2 | STP5NC70ZFP | 4.6 | | 78 |
| | 4.7 | STP3NC70ZFP | 2.5 | | 17 |
| 800 | 1.5 | STP7NC80ZFP | 6 | | 57 |
| | 1.8 | STP6NC80ZFP | 5.4 | | 45 |
| | 2.8 | STP4NC80ZFP | 4 | | 36 |
| | 5.5 | STP3NB80FP | 1.6 | | 17 |
| 900 | 2 | STP6NC90ZFP | 5.3 | | 52 |
| | 2.5 | STP5NC90ZFP | 4.6 | | 40 |
| | 2.9 | STP4NB90FP | 2.5 | | 30 |
| | 3.5 | STP3NC90ZFP | 3.5 | | 40 |
| 1000 | 2.7 | STP5NB100FP | 5 | | 39 |
| | 4.4 | STP4NB100FP | 4.4 | | 32 |
| | 6 | STP3NB100FP | 1.8 | | 22 |

AVAILABLE UPON REQUEST

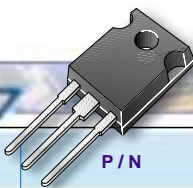


MAX220-MAX220I



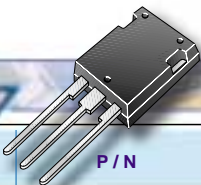
| V _{DSS} (V) | R _{DS(on)} @ 10V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 4.5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|----------------------------------|-------------|-----------------------------|-----------------------------------|-----------------------------------|
| 500 | 0.12 | STU26NM50 | 26 | | 90 |
| | 0.27 | STU16NC50 | 16 | | 95 |
| | 0.4 | STU13NC50 | 13 | | 75 |
| | 0.4 | STU13NC50I | 13 | | 75 |
| 600 | 0.14 | STU26NM60 | 26 | | 65 |
| | 0.14 | STU26NM60I | 26 | | 65 |
| | 0.55 | STU11NC60 | 11 | | 65 |
| 700 | 0.75 | STU10NC70Z | 9.4 | | 72 |
| | 0.75 | STU10NC70ZI | 9.4 | | 72 |
| 800 | 0.9 | STU9NC80ZI | 8.6 | | 72.2 |
| 900 | 1.38 | STU8NC90Z | 7 | | 70 |
| | 1.38 | STU8NC90ZI | 7 | | 102 |

TO-247



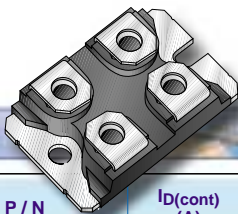
| V _{DSS} (V) | R _{DS(on)} @ 10V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 4.5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|----------------------------------|--------------|-----------------------------|-----------------------------------|-----------------------------------|
| 55 | 0.008 | STW80NF55-08 | 80 | | 115 |
| 60 | 0.01 | STW80NE06-10 | 80 | | 140 |
| 100 | 0.022 | STW60NE10 | 60 | | 142 |
| 200 | 0.055 | STW50NB20 | 50 | | 84 |
| | 0.075 | STW34NB20 | 34 | | 60 |
| | 0.085 | IRFP250 | 33 | | 117 |
| 500 | 0.1 | STW45NM50 | 45 | | 95 |
| | 0.11 | STW45NM50FD | 45 | | 90 |
| | 0.12 | STW26NM50 | 30 | | 90 |
| | 0.23 | STW20NM50 | 20 | | 40 |
| | 0.25 | STW20NM50FD | 20 | | 40 |
| | 0.27 | IRFP460 | 18 | | 100 |
| | 0.27 | STW20NC50 | 18.4 | | 95 |
| | 0.35 | STW14NM50 | 14 | | 28 |
| | 0.38 | STW14NK50Z | 14 | | 92 |
| | 0.38 | STW14NC50 | 14 | | 65 |
| 600 | 0.38 | IRFP450 | 14 | | 75 |
| | 0.11 | STW45NM60 | 44 | | 120 |
| | 0.29 | STW20NM60 | 20 | | 55 |
| | 0.55 | STW13NK60Z | 13 | | 66 |
| | 0.75 | STW10NK60Z | 10 | | 30 |
| 700 | 0.75 | STW10NC70Z | 10.6 | | 72 |
| | 1.2 | STW9NC70Z | 7.5 | | 60 |
| | 1.38 | STW8NC70Z | 7 | | 47 |
| 800 | 0.8 | STW11NB80 | 11 | | 70 |
| | 0.9 | STW9NC80Z | 9.4 | | 71 |
| | 1.5 | STW8NC80Z | 6.7 | | 57 |
| | 1.8 | STW7NC80Z | 6 | | 45 |
| 900 | 1 | STW9NB90 | 9.7 | | 64 |
| | 1.38 | STW8NC90Z | 7.6 | | 70 |
| | 2 | STW7NC90Z | 5.8 | | 52 |
| | 2.5 | STW6NC90Z | 5.2 | | 40 |
| 1000 | 1.8 | STW8NB100 | 7.3 | | 68 |
| | 2.8 | STW6NB100 | 5.4 | | 39 |
| | 4.4 | STW5NB100 | 4.3 | | 32 |

MAX247



| V _{DSS} (V) | R _{DS(on)} @ 10V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 4.5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|----------------------------------|--------------|-----------------------------|-----------------------------------|-----------------------------------|
| 100 | 0.01 | STY140NS10 | 140 | | 200 |
| 200 | 0.022 | STY100NS20FD | 100 | | 380 |
| 500 | 0.05 | STY60NM50 | 60 | | 240 |
| | 0.13 | STY34NB50 | 34 | | 159 |

ISOTOP



| V _{DSS} (V) | R _{DS(on)} @ 10V (Ω) | P / N | I _{D(cont)} (A) | R _{DS(on)} @ 4.5V (Ω) | Q _g @ 10V(Typ) (nC) |
|-------------------------|----------------------------------|--------------|-----------------------------|-----------------------------------|-----------------------------------|
| 100 | 0.006 | STE180NE10 | 180 | | 142 |
| | 0.07 | STE250NS10 | 250 | | 200 |
| 200 | 0.024 | STE110NS20FD | 110 | | 380 |
| | 0.085 | STE53NA50 | 53 | | 470 |
| 500 | 0.1 | STE48NM50 | 48 | | 95 |
| | 0.14 | STE38NB50F | 38 | | 140 |

Product Guidelines

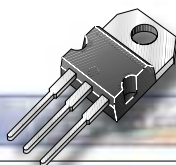
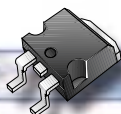
In a highly dynamic, and competitive environment, ST continues to propose cost effective and high performance products, while supporting ongoing projects using previous generations.

To make sure that our customers are fully benefiting from the innovation that ST provides, we would like to make these suggestions:

- For the DESIGN-IN of Low Voltage products:
It is suggested to use the NF series rather than the NE where similar performance are guaranteed.
- For the DESIGN-IN of the High Voltage products:
It is suggested to use the NKZ, NC & NCZ rather than the NB series where similar performance are guaranteed.
- The NM series, or better known as "MDmesh", makes a quantum leap in performances in the High Voltage range for innovative applications.
- For the availability of other MOSFETs refer to your local Sales and Marketing Organization.

IGBTs

PRODUCT MATRIX



| B_{VCE} (V) | FEATURE | I_{CN} (A) 100°C |
|------------------|---------|-----------------------|
|------------------|---------|-----------------------|

| DPAK +Diode | D ² PAK +Diode | TO-220 +Diode |
|----------------|------------------------------|------------------|
|----------------|------------------------------|------------------|

| | | |
|-----|---------------|----|
| 320 | Logic Level | 30 |
| | Fully Clamped | 20 |
| 375 | 0-10 KHz | 30 |

| | | |
|--|--|--------------|
| | STGB20NB32LZ STGB10NB37LZ STGB20NB37LZ | STGP10NB37LZ |
|--|--|--------------|

| | | |
|-----|----------------|-----|
| 600 | Standard Speed | 3 |
| | low drop | 7 |
| | 0-1 KHz | 10 |
| | | 50 |
| | | 100 |

| | | |
|------------------------------|----------------------------------|---|
| STGD3NB60S (D) STGD7NB60S | STGB3NB60S (D) STGB7NB60S (D) | STGP3NB60S (D) STGP7NB60S (D) STGP10NB60S |
|------------------------------|----------------------------------|---|

| | | |
|-----|--------------|----|
| 600 | Medium Speed | 3 |
| | | 7 |
| | 1-20 KHz | 10 |

| | | |
|--------------------------|---|---|
| STGD3NB60F STGD7NB60F | STGB3NB60F (D) STGB7NB60F (D) STGB10NB60F (D) | STGP3NB60F (D) STGP7NB60F (D) STGP10NB60F (D) |
|--------------------------|---|---|

| | | |
|-----|----------------|----|
| 600 | Fast Switching | 3 |
| | 20-60 KHz | 7 |
| | | 10 |
| | | 12 |
| | | 20 |
| | | 30 |
| | | 50 |

| | | |
|--------------------------|---|---|
| STGD3NB60H STGD7NB60H | STGB3NB60H (D) STGB7NB60H (D) STGB10NB60H (D) | STGP3NB60H (D) STGP7NB60H (D) STGP10NB60H (D) STGP12NB60H STGP20NB60H |
|--------------------------|---|---|

| | | |
|-----|----------------------|----|
| 600 | Short Circuit Rugged | 3 |
| | Fast Switching | 7 |
| | 20-60 KHz | 20 |

| | | |
|--------------------------|----------------------------------|---|
| STGD3NB60K STGD7NB60K | STGB3NB60K (D) STGB7NB60K (D) | STGP3NB60K (D) STGP7NB60K (D) STGP20NB60K |
|--------------------------|----------------------------------|---|

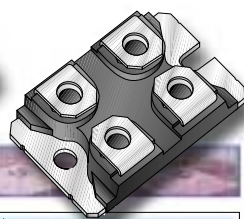
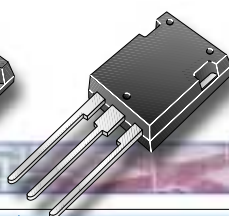
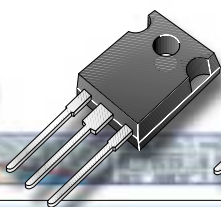
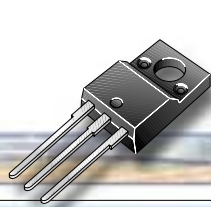
| | | |
|-----|----------------------|----|
| 600 | Hyper Fast Switching | 50 |
| | 60-120 KHz | |

| | | |
|--|--|--|
| | | |
|--|--|--|

| | | |
|------|-----------|---|
| 1200 | Low Speed | 7 |
| | 0-10 KHz | |

| | | |
|---------------|--|--|
| STGD7NB120Z-1 | | |
|---------------|--|--|

In development



**TO-220FP
Full Pak+Diode**

**TO-247
+Diode**

**Max-247
+Diode**

**ISOTOP
+Diode**

| | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|

| | | | |
|------------------------------------|-------------|-----------------|--------------|
| STGP3NB60S(D)FP STGP7NB60S(D)FP | STGW50NB60S | STGY50NB60S (D) | STGE100NB60S |
|------------------------------------|-------------|-----------------|--------------|

| | | | |
|--|--|--|--|
| STGP3NB60F(D)FP STGP7NB60F(D)FP STGP10NB60F(D)FP | | | |
|--|--|--|--|

| | | | |
|--|--|-----------------|-----------------|
| STGP3NB60H(D)FP STGP7NB60H(D)FP STGP10NB60H(D)FP STGP12NB60HD | STGW12NB60H (D) STGW20NB60H (D) STGW30NB60H (D) STGW50NB60H | STGY50NB60H (D) | STGE50NB60H (D) |
|--|--|-----------------|-----------------|

| | | | |
|------------------------------------|-----------------|--|--|
| STGP3NB60H(D)FP STGP7NB60H(D)FP | STGW20NB60K (D) | | |
|------------------------------------|-----------------|--|--|

| | | | |
|--|-------------|--|--|
| | STGW50NB60V | | |
|--|-------------|--|--|

| | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|

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