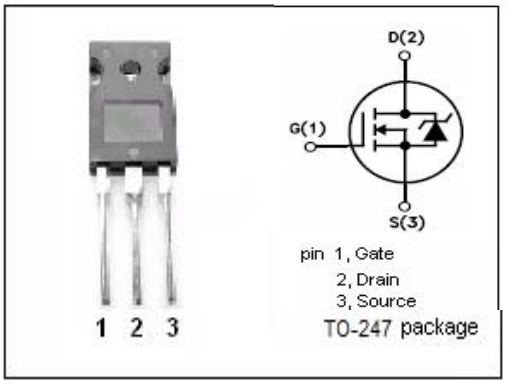
# Isc N-Channel MOSFET Transistor STW45NM50

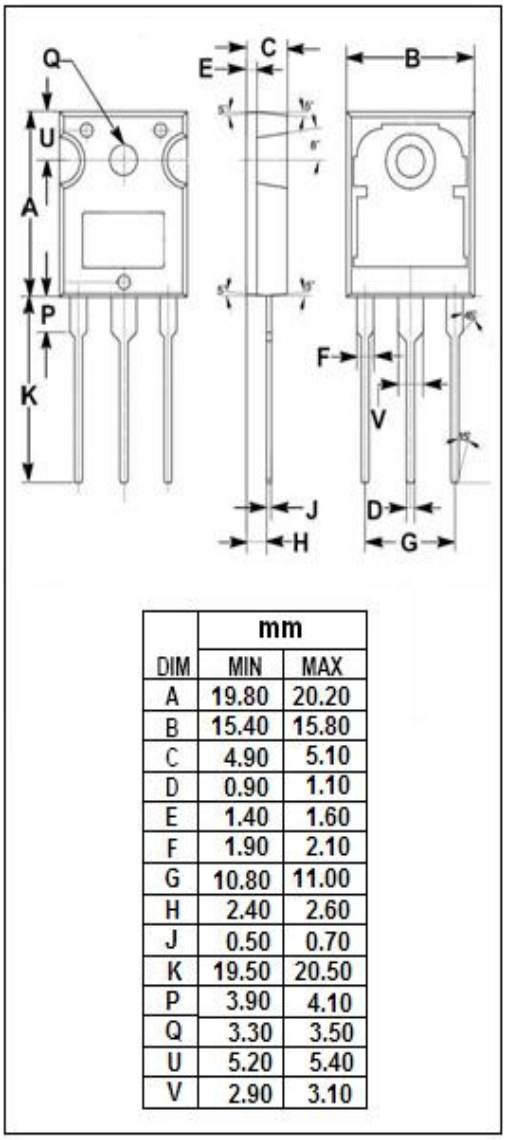



## • FEATURES

- Low input capacitance and gate charge
- Low gate input resistance
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## • APPLICATIONS

- The MDmesh™ family is very suitable for increasing power density of high voltage converters allowing system miniaturization and higher efficiencies.




| DIM | mm MIN | MAX |
|---|---|---|
| A | 19.80 | 20.20 |
| B | 15.40 | 15.80 |
| C | 4.90 | 5.10 |
| D | 0.90 | 1.10 |
| E | 1.40 | 1.60 |
| F | 1.90 | 2.10 |
| G | 10.80 | 11.00 |
| H | 2.40 | 2.60 |
| J | 0.50 | 0.70 |
| K | 19.50 | 20.50 |
| P | 3.90 | 4.10 |
| Q | 3.30 | 3.50 |
| U | 5.20 | 5.40 |
| V | 2.90 | 3.10 |

## • ABSOLUTE MAXIMUM RATINGS($T_a$=25℃)

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{DSS}$ | Drain-Source Voltage | 550 | V |
| $V_{GSS}$ | Gate-Source Voltage | ±30 | V |
| $I_D$ | Drain Current-Continuous@$T_C$=25℃<br>$T_C$=100℃ | 45<br>28.4 | A |
| $I_{DM}$ | Drain Current-Single Pulsed | 180 | A |
| $P_D$ | Total Dissipation | 417 | W |
| $T_{ch}$ | Max. Operating Junction Temperature | 150 | ℃ |
| $T_{stg}$ | Storage Temperature | -65~150 | ℃ |

## • THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---|---|---|---|
| Rth(ch-c) | Channel-to-case thermal resistance | 0.3 | ℃/W |
| Rth(ch-a) | Channel-to-ambient thermal resistance | 30 | ℃/W |

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## ELECTRICAL CHARACTERISTICS

**$T_C$=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| $BV_{DSS}$ | Drain-Source Breakdown Voltage | $V_{GS}$=0V; $I_D$= 0.25mA | 500 | | | V |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS}$=±30V; $I_D$=0.25mA | 3 | | 5 | V |
| $R_{DS(on)}$ | Drain-Source On-Resistance | $V_{GS}$= 10V; $I_D$=22.5A | | 80 | 100 | mΩ |
| $I_{GSS}$ | Gate-Source Leakage Current | $V_{GS}$= ±30V;$V_{DS}$= 0V | | | ±0.1 | μA |
| $I_{DSS}$ | Drain-Source Leakage Current | $V_{DS}$= 550V; $V_{GS}$= 0V; $T_J$=25℃<br>$T_J$=125℃ | | | 10<br>100 | μA |
| $V_{SDF}$ | Diode forward voltage | $I_{SD}$=45A, $V_{GS}$ = 0 V | | | 1.5 | V |