

**isc N-Channel MOSFET Transistor**
**SPI20N60CFD**
**• FEATURES**

- Static drain-source on-resistance:  
 $R_{DS(on)} \leq 0.22\Omega$
- Enhancement mode
- Fast Switching Speed
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**• DESCRIPTION**

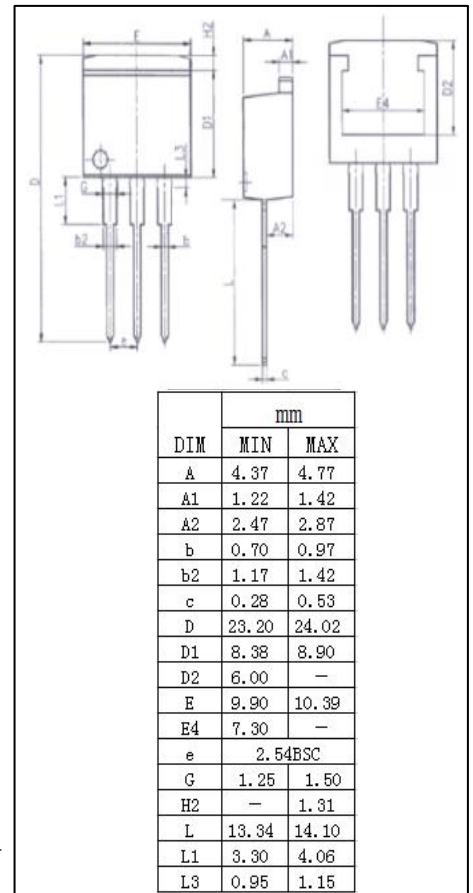
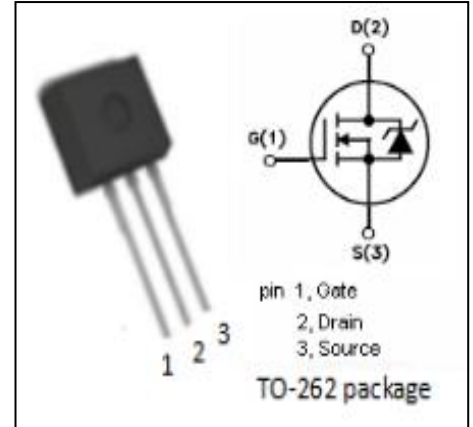
- Ultra low gate charge
- High peak current capability

**• ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )**

| SYMBOL    | PARAMETER                                  | VALUE    | UNIT             |
|-----------|--|----------|------------------|
| $V_{DS}$  | Drain-Source Voltage                       | 600      | V                |
| $V_{GS}$  | Gate-Source Voltage                        | $\pm 20$ | V                |
| $I_D$     | Drain Current-Continuous                   | 20.7     | A                |
| $I_{DM}$  | Drain Current-Single Pulsed                | 52       | A                |
| $P_D$     | Total Dissipation @ $T_c=25^\circ\text{C}$ | 208      | W                |
| $T_j$     | Max. Operating Junction Temperature        | 150      | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature                        | -55~150  | $^\circ\text{C}$ |

**• THERMAL CHARACTERISTICS**

| SYMBOL         | PARAMETER                          | MAX | UNIT               |
|----------------|------------------------------------|-----|--------------------|
| $R_{th(ch-c)}$ | Channel-to-case thermal resistance | 0.6 | $^\circ\text{C/W}$ |



## isc N-Channel MOSFET Transistor

## SPI20N60CFD

## ELECTRICAL CHARACTERISTICS

T<sub>C</sub>=25°C unless otherwise specified

| SYMBOL              | PARAMETER                      | CONDITIONS   | MIN | TYP | MAX  | UNIT |
|---------------------|--------------------------------|--|-----|-----|------|------|
| BV <sub>DSS</sub>   | Drain-Source Breakdown Voltage | V <sub>GS</sub> =0V; I <sub>D</sub> =0.25mA            | 600 |     |      | V    |
| V <sub>GS(th)</sub> | Gate Threshold Voltage         | V <sub>DS</sub> =V <sub>GS</sub> ; I <sub>D</sub> =1mA | 3   |     | 5    | V    |
| R <sub>DS(on)</sub> | Drain-Source On-Resistance     | V <sub>GS</sub> =10V; I <sub>D</sub> =13.1A            |     |     | 0.22 | Ω    |
| I <sub>GSS</sub>    | Gate-Source Leakage Current    | V <sub>GS</sub> =20V; V <sub>DS</sub> =0V              |     |     | 0.1  | μA   |
| I <sub>DSS</sub>    | Drain-Source Leakage Current   | V <sub>DS</sub> =600V; V <sub>GS</sub> = 0V            |     | 2.1 |      | μA   |
| V <sub>SD</sub>     | Diode forward voltage          | I <sub>F</sub> =I <sub>S</sub> ; V <sub>GS</sub> = 0V  |     |     | 1.2  | V    |

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