

## isc N-Channel MOSFET Transistor

## IPI65R420CFD

## • FEATURES

- Static drain-source on-resistance:  
 $R_{DS(on)} \leq 0.42\Omega$
- Enhancement mode
- Fast Switching Speed
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## • DESCRIPTION

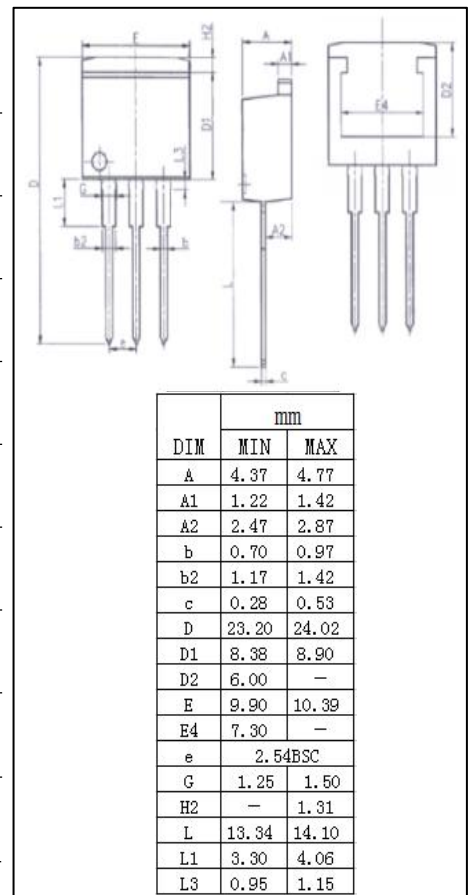
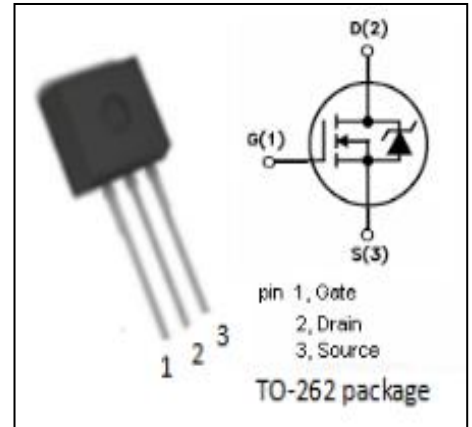
- Provide all benefits of a fast switching SJ MOSFET while offering an extremely fast and robust body diode

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

| SYMBOL    | PARAMETER                                  | VALUE    | UNIT             |
|-----------|--------------------------------------------|----------|------------------|
| $V_{DS}$  | Drain-Source Voltage                       | 650      | V                |
| $V_{GS}$  | Gate-Source Voltage                        | $\pm 20$ | V                |
| $I_D$     | Drain Current-Continuous                   | 8.7      | A                |
| $I_{DM}$  | Drain Current-Single Pulsed                | 27       | A                |
| $P_D$     | Total Dissipation @ $T_c=25^\circ\text{C}$ | 83.3     | 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 | 1.5 | $^\circ\text{C/W}$ |



**isc N-Channel MOSFET Transistor****IPI65R420CFD****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> =1mA                 | 650 |     |      | V    |
| V <sub>GS(th)</sub> | Gate Threshold Voltage         | V <sub>DS</sub> =V <sub>GS</sub> ; I <sub>D</sub> =0.3mA | 3.5 |     | 4.5  | V    |
| R <sub>DS(on)</sub> | Drain-Source On-Resistance     | V <sub>GS</sub> =10V; I <sub>D</sub> =3.4A               |     |     | 0.42 | 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> =650V; V <sub>GS</sub> = 0V              |     |     | 1    | μA   |
| V <sub>SD</sub>     | Diode forward voltage          | I <sub>F</sub> =5.2A; V <sub>GS</sub> = 0V               |     | 0.9 |      | V    |

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