

## isc N-Channel MOSFET Transistor

## IPD65R380C6, IIPD65R380C6

## • FEATURES

- Static drain-source on-resistance:  
 $R_{DS(on)} \leq 0.38 \Omega$
- Enhancement mode:
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## • DESCRIPTION

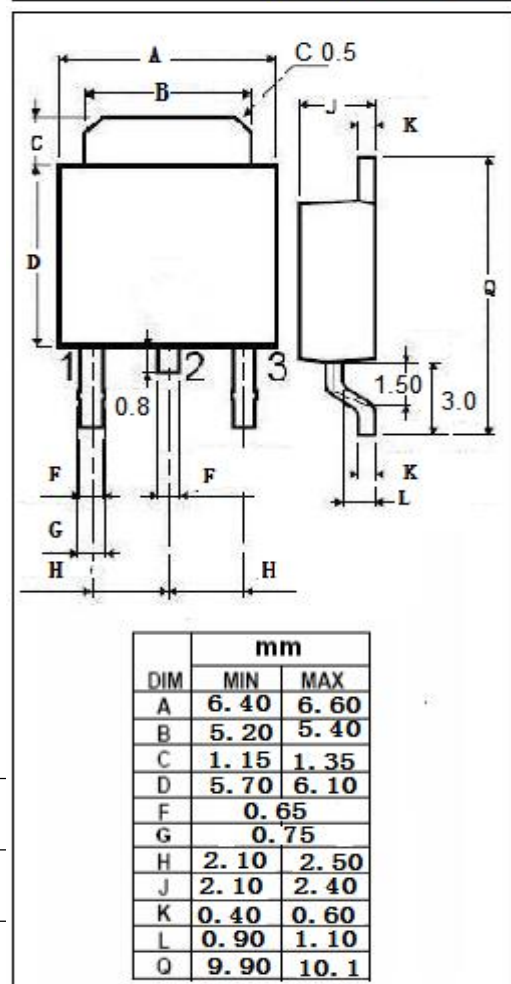
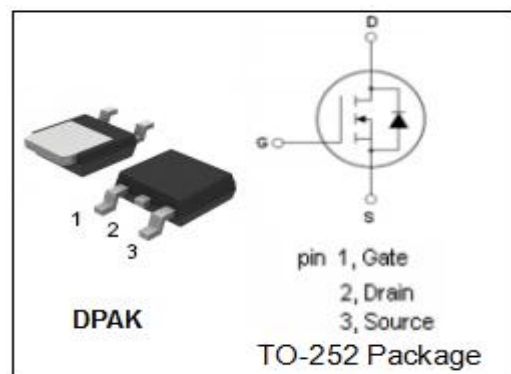
- Fast switching
- Very high commutation ruggedness

• 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                   | 10.6     | A                |
| $I_{DM}$  | Drain Current-Single Pulsed                | 29       | A                |
| $P_D$     | Total Dissipation @ $T_c=25^\circ\text{C}$ | 83       | 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               |
|---------------|---------------------------------------|-----|--------------------|
| $R_{th(j-c)}$ | Channel-to-case thermal resistance    | 1.5 | $^\circ\text{C/W}$ |
| $R_{th(j-a)}$ | Channel-to-ambient thermal resistance | 62  | $^\circ\text{C/W}$ |



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### ELECTRICAL CHARACTERISTICS

$T_C=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL       | PARAMETER                      | CONDITIONS                  | MIN | TYP | MAX  | UNIT     |
|--------------|--------------------------------|-----------------------------|-----|-----|------|----------|
| $BV_{DSS}$   | Drain-Source Breakdown Voltage | $V_{GS}=0V; I_D=1mA$        | 650 |     |      | V        |
| $V_{GS(th)}$ | Gate Threshold Voltage         | $V_{DS}=V_{GS}; I_D=0.32mA$ | 2.5 |     | 3.5  | V        |
| $R_{DS(on)}$ | Drain-Source On-Resistance     | $V_{GS}=10V; I_D=3.2A$      |     |     | 0.38 | $\Omega$ |
| $I_{GSS}$    | Gate-Source Leakage Current    | $V_{GS}=20V; V_{DS}=0V$     |     |     | 0.1  | $\mu A$  |
| $I_{DSS}$    | Drain-Source Leakage Current   | $V_{DS}=650V; V_{GS}=0V$    |     |     | 1    | $\mu A$  |
| $V_{SD}$     | Diode forward voltage          | $I_F=4.9A, V_{GS}=0V$       |     | 0.9 |      | V        |

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