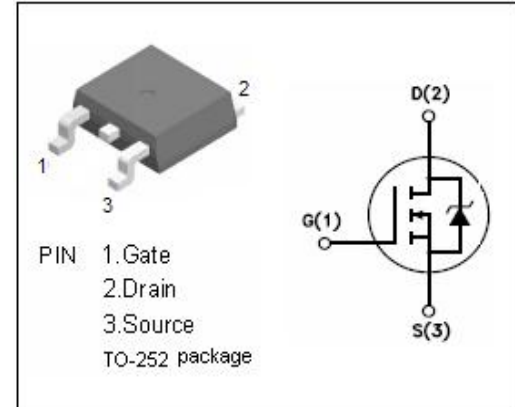


**Isc N-Channel MOSFET Transistor****SUD25N15-52-E3****• FEATURES**

- TrenchFET® Power MOSFET
- 175 ° C Junction Temperature
- 100 % Rg and UIS Tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**• DESCRIPTION**

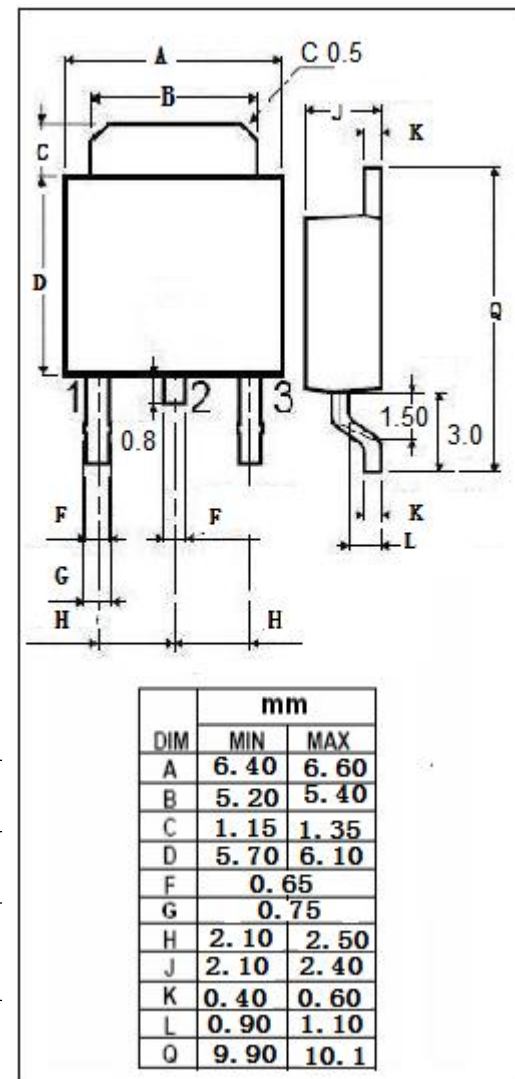
- D Primary Side Switch

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

| SYMBOL    | PARAMETER                                                                                                  | VALUE      | UNIT             |
|-----------|------------------------------------------------------------------------------------------------------------|------------|------------------|
| $V_{DS}$  | Drain-Source Voltage                                                                                       | 150        | V                |
| $V_{GS}$  | Gate-Source Voltage                                                                                        | $\pm 20$   | V                |
| $I_D$     | Drain Current-Continuous@ $T_c=25^\circ\text{C}$<br>( $T_J=175^\circ\text{C}$ )<br>$T_c=125^\circ\text{C}$ | 25<br>14.5 | A                |
| $I_{DM}$  | Drain Current-Single Pulsed                                                                                | 50         | A                |
| $P_D$     | Total Dissipation @ $T_c=25^\circ\text{C}$<br>$T_A=25^\circ\text{C}$                                       | 136<br>3   | W                |
| $T_{ch}$  | Max. Operating Junction Temperature                                                                        | -55~175    | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature                                                                                        | -55~175    | $^\circ\text{C}$ |

**• THERMAL CHARACTERISTICS**

| SYMBOL         | PARAMETER                                                                      | MAX      | UNIT               |
|----------------|--------------------------------------------------------------------------------|----------|--------------------|
| $R_{th(ch-c)}$ | Channel-to-case thermal resistance                                             | 1.1      | $^\circ\text{C/W}$ |
| $R_{th(ch-a)}$ | Channel-to-ambient thermal resistance<br>$t \leq 10\text{sec}$<br>Steady State | 18<br>50 | $^\circ\text{C/W}$ |



**Isc N-Channel MOSFET Transistor****SUD25N15-52-E3****ELECTRICAL CHARACTERISTICS** $T_c=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL       | PARAMETER                      | CONDITIONS                                                                                                                                                                                    | MIN | TYP      | MAX                    | UNIT      |
|--------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------|------------------------|-----------|
| $BV_{DSS}$   | Drain-Source Breakdown Voltage | $V_{GS}=0V; I_D=0.25mA$                                                                                                                                                                       | 150 |          |                        | V         |
| $V_{GS(th)}$ | Gate Threshold Voltage         | $V_{DS}= \pm 20V; I_D=0.25mA$                                                                                                                                                                 | 2   |          | 4                      | V         |
| $R_{DS(on)}$ | Drain-Source On-Resistance     | $V_{GS}=10V; I_D=5A; T_J=25^{\circ}\text{C}$<br>$V_{GS}=10V; I_D=5A; T_J=125^{\circ}\text{C}$<br>$V_{GS}=10V; I_D=5A; T_J=175^{\circ}\text{C}$<br>$V_{GS}=6V; I_D=5A; T_J=25^{\circ}\text{C}$ |     | 42<br>47 | 52<br>109<br>145<br>60 | $m\Omega$ |
| $I_{GSS}$    | Gate-Source Leakage Current    | $V_{GS}= \pm 20V; V_{DS}=0V$                                                                                                                                                                  |     |          | $\pm 0.1$              | $\mu A$   |
| $I_{DSS}$    | Drain-Source Leakage Current   | $V_{DS}=150V; V_{GS}=0V; T_J=25^{\circ}\text{C}$<br>$T_J=125^{\circ}\text{C}$<br>$T_J=175^{\circ}\text{C}$                                                                                    |     |          | 1<br>50<br>250         | mA        |
| $V_{SDF}$    | Diode forward voltage          | $I_F=25A, V_{GS}=0V$                                                                                                                                                                          |     | 0.9      | 1.5                    | V         |

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