

isc N-Channel MOSFET Transistor

6N50

DESCRIPTION

- Drain Current  $I_D = 6A @ T_C = 25^{\circ}C$
- Drain Source Voltage-  
:  $V_{DSS} = 500V (Min)$
- Fast Switching Speed

APPLICATIONS

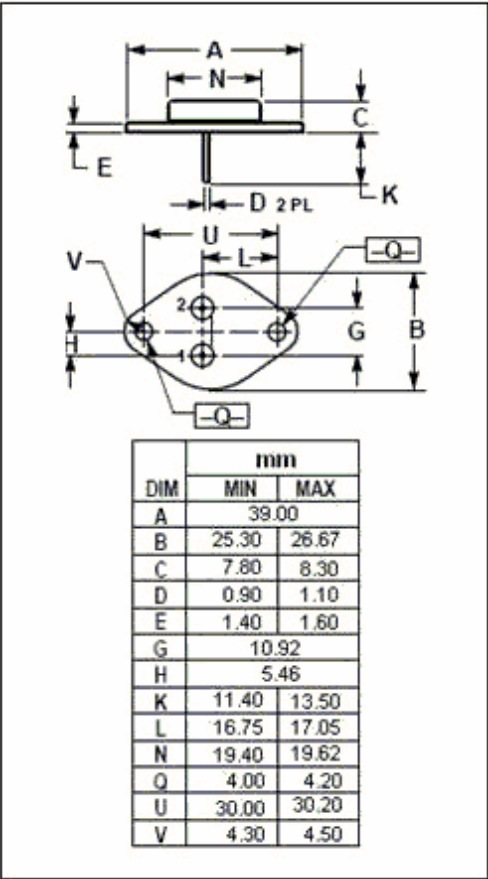
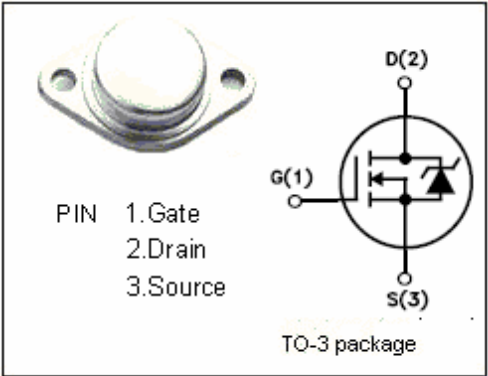
- General purpose power amplifier

ABSOLUTE MAXIMUM RATINGS( $T_C = 25^{\circ}C$ )

| SYMBOL        | PARAMETER                                     | VALUE    | UNIT        |
|---------------|-----------------------------------------------|----------|-------------|
| $V_{DSS}$     | Drain-Source Voltage ( $V_{GS} = 0$ )         | 500      | V           |
| $V_{GS}$      | Gate-Source Voltage                           | $\pm 30$ | V           |
| $I_D$         | Drain Current-continuous@ $T_C = 25^{\circ}C$ | 6        | A           |
| $I_{D(puls)}$ | Pulse Drain Current                           | 15       | A           |
| $P_{tot}$     | Total Dissipation@ $T_C = 25^{\circ}C$        | 100      | W           |
| $T_j$         | Max. Operating Junction Temperature           | 150      | $^{\circ}C$ |
| $T_{stg}$     | Storage Temperature Range                     | -55~150  | $^{\circ}C$ |

• THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                               | MAX  | UNIT          |
|---------------|-----------------------------------------|------|---------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case    | 1.67 | $^{\circ}C/W$ |
| $R_{th\ j-a}$ | Thermal Resistance, Junction to Ambient | 62.5 | $^{\circ}C/W$ |



## isc N-Channel MOSFET Transistor

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• ELECTRICAL CHARACTERISTICS ( $T_C=25^\circ\text{C}$ )

| SYMBOL        | PARAMETER                       | CONDITIONS                                                                          | MIN | TYPE | MAX       | UNIT          |
|---------------|---------------------------------|-------------------------------------------------------------------------------------|-----|------|-----------|---------------|
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage  | $V_{GS}=0; I_D=1\text{mA}$                                                          | 500 |      |           | V             |
| $V_{GS(th)}$  | Gate Threshold Voltage          | $V_{DS}=V_{GS}; I_D=1\text{mA}$                                                     | 2.0 |      | 4.0       | V             |
| $V_{SD}$      | Diode Forward On-Voltage        | $I_S=3\text{A}; V_{GS}=0$                                                           |     |      | 1.4       | V             |
| $R_{DS(on)}$  | Drain-Source On-Resistance      | $V_{GS}=10\text{V}; I_D=3\text{A}$                                                  |     |      | 1.25      | $\Omega$      |
| $I_{GSS}$     | Gate-Body Leakage Current       | $V_{GS}= \pm 30\text{V}; V_{DS}=0$                                                  |     |      | $\pm 100$ | nA            |
| $I_{DSS}$     | Zero Gate Voltage Drain Current | $V_{DS}=400\text{V}; V_{GS}=0$                                                      |     |      | 10        | $\mu\text{A}$ |
| $C_{iss}$     | Input Capacitance               | $V_{DS}=25\text{V};$<br>$V_{GS}=0\text{V};$<br>$f_T=1\text{MHz}$                    |     |      | 1500      | pF            |
| $C_{rss}$     | Reverse Transfer Capacitance    |                                                                                     |     |      | 200       |               |
| $C_{oss}$     | Output Capacitance              |                                                                                     |     |      | 250       |               |
| $t_r$         | Rise Time                       | $V_{GS}=10\text{V};$<br>$I_D=3\text{A};$<br>$V_{DD}=250\text{V};$<br>$R_L=50\Omega$ |     | 40   |           | ns            |
| $t_{d(on)}$   | Turn-on Delay Time              |                                                                                     |     | 15   |           |               |
| $t_f$         | Fall Time                       |                                                                                     |     | 60   |           |               |
| $t_{d(off)}$  | Turn-off Delay Time             |                                                                                     |     | 190  |           |               |