

isc N-Channel MOSFET Transistor

9N50

• DESCRIPTION

- Drain Current  $I_D = 9A @ T_C = 25^\circ C$
- Drain Source Voltage-  
:  $V_{DSS} = 500V(\text{Min})$
- Fast Switching Speed

• APPLICATIONS

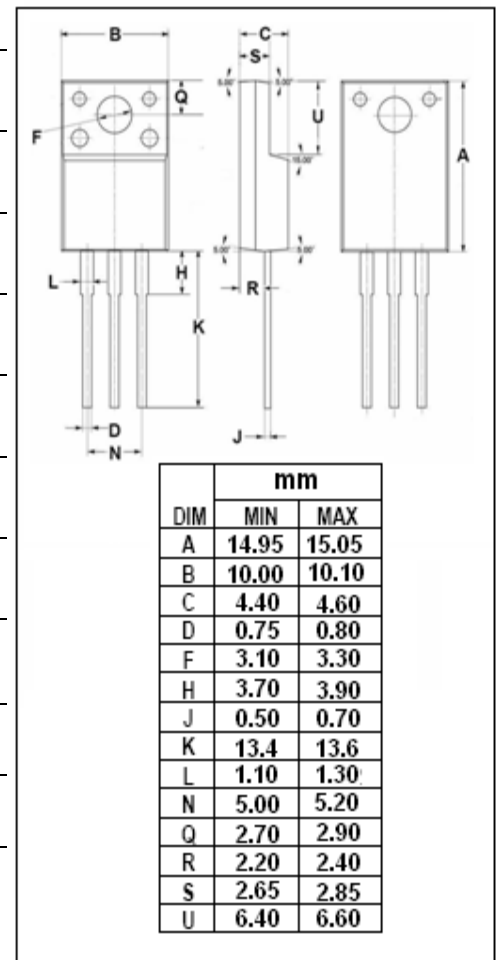
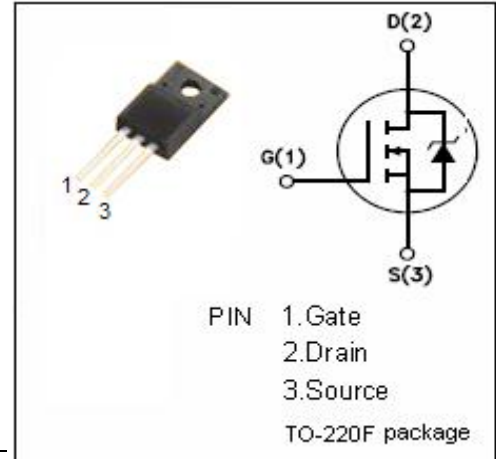
- General purpose power amplifier

• 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                           | $\pm 20$ | V          |
| $I_D$                | Drain Current-continuous @ $T_C = 25^\circ C$ | 9        | A          |
| $I_{D(\text{puls})}$ | Pulse Drain Current                           | 36       | A          |
| $P_{\text{tot}}$     | Total Dissipation @ $T_C = 25^\circ C$        | 44       | W          |
| $T_j$                | Max. Operating Junction Temperature           | 150      | $^\circ C$ |
| $T_{\text{stg}}$     | Storage Temperature Range                     | -55~150  | $^\circ C$ |

• THERMAL CHARACTERISTICS

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



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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  | $V_{GS}=0; I_D=250\mu\text{A}$       | 500 |      |           | V             |
| $V_{GS(th)}$  | Gate Threshold Voltage          | $V_{DS}=V_{GS}; I_D=250\mu\text{A}$  | 2.0 |      | 4.0       | V             |
| $V_{SD}$      | Diode Forward On-Voltage        | $I_S=9\text{A}; V_{GS}=0$            |     |      | 1.4       | V             |
| $R_{DS(on)}$  | Drain-Source On-Resistance      | $V_{GS}=10\text{V}; I_D=4.5\text{A}$ |     |      | 0.85      | $\Omega$      |
| $I_{GSS}$     | Gate-Body Leakage Current       | $V_{GS}=\pm 20\text{V}; V_{DS}=0$    |     |      | $\pm 100$ | nA            |
| $I_{DSS}$     | Zero Gate Voltage Drain Current | $V_{DS}=500\text{V}; V_{GS}=0$       |     |      | 1         | $\mu\text{A}$ |
| $C_{iss}$     | Input Capacitance               | $V_{DS}=25\text{V};$                 |     | 790  |           | pF            |
| $C_{rss}$     | Reverse Transfer Capacitance    | $V_{GS}=0\text{V};$                  |     | 24   |           |               |
| $C_{oss}$     | Output Capacitance              | $f_T=1\text{MHz}$                    |     | 130  |           |               |
| $t_r$         | Rise Time                       | $V_{GS}=10\text{V};$                 |     |      | 140       | ns            |
| $t_{d(on)}$   | Turn-on Delay Time              | $I_D=9\text{A};$                     |     |      | 45        |               |
| $t_f$         | Fall Time                       | $V_{DD}=250\text{V};$                |     |      | 125       |               |
| $t_{d(off)}$  | Turn-off Delay Time             | $R_L=25\Omega$                       |     |      | 195       |               |