

isc N-Channel MOSFET Transistor

2SK1378

DESCRIPTION

- Drain Current  $-I_D=10A@ T_C=25^{\circ}C$
- Drain Source Voltage-  
:  $V_{DSS}=400V(\text{Min})$
- Fast Switching Speed

APPLICATIONS

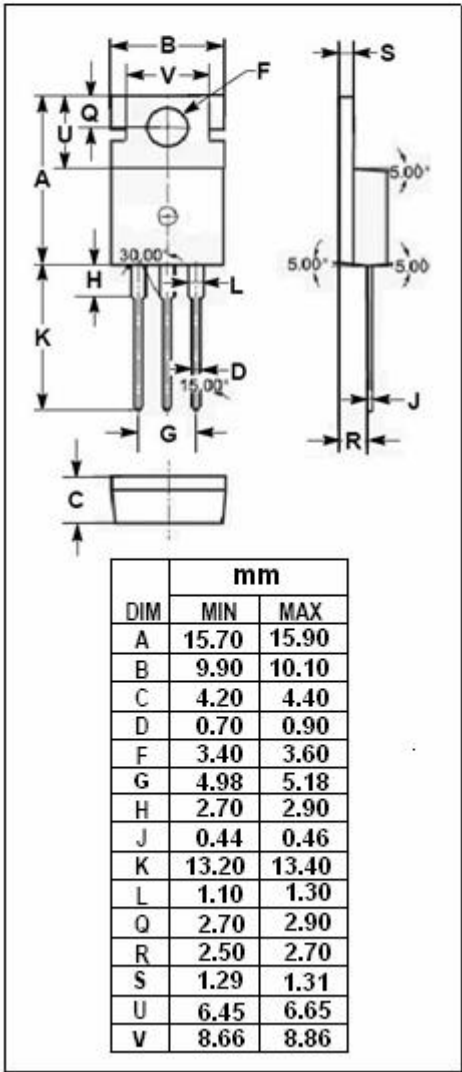
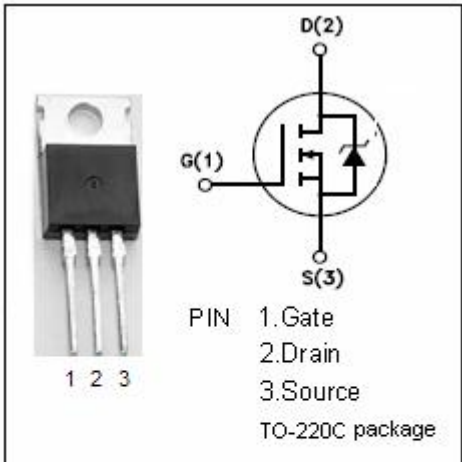
- Designed for high voltage, high speed power switching

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

| SYMBOL    | ARAMETER                                   | VALUE    | UNIT        |
|-----------|--------------------------------------------|----------|-------------|
| $V_{DSS}$ | Drain-Source Voltage ( $V_{GS}=0$ )        | 400      | V           |
| $V_{GS}$  | Gate-Source Voltage                        | $\pm 30$ | V           |
| $I_D$     | Drain Current-continuous@ $TC=25^{\circ}C$ | 10       | A           |
| $P_{tot}$ | Total Dissipation@ $TC=25^{\circ}C$        | 125      | 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    | 2.77 | $^{\circ}C/W$ |
| $R_{th\ j-a}$ | Thermal Resistance,Junction to Ambient | 62.5 | $^{\circ}C/W$ |



**isc N-Channel Mosfet Transistor****2SK1378****• ELECTRICAL CHARACTERISTICS (T<sub>C</sub>=25°C)**

| SYMBOL               | PARAMETER                        | CONDITIONS                                                      | MIN | TYP  | MAX  | UNIT |
|----------------------|----------------------------------|-----------------------------------------------------------------|-----|------|------|------|
| V <sub>(BR)DSS</sub> | Drain-Source Breakdown Voltage   | V <sub>GS</sub> =0; I <sub>D</sub> = 0.25mA                     | 400 |      |      | V    |
| V <sub>GS(th)</sub>  | Gate Threshold Voltage           | V <sub>DS</sub> =10 V <sub>GS</sub> ; I <sub>D</sub> =0.25mA    | 2.0 |      | 4.0  | V    |
| R <sub>DS(on)</sub>  | Drain-Source On-stage Resistance | V <sub>GS</sub> =10V; I <sub>D</sub> =5A                        |     | 0.35 | 0.55 | Ω    |
| I <sub>GSS</sub>     | Gate Source Leakage Current      | V <sub>GS</sub> = ±25V; V <sub>DS</sub> = 0                     |     |      | ±100 | nA   |
| I <sub>DSS</sub>     | Zero Gate Voltage Drain Current  | V <sub>DS</sub> =400V; V <sub>GS</sub> = 0                      |     |      | 250  | uA   |
| tr                   | Rise time                        | V <sub>GS</sub> =10V; I <sub>D</sub> =10A; R <sub>L</sub> =20 Ω |     | 16   |      | ns   |
| ton                  | Turn-on time                     |                                                                 |     | 40   |      | ns   |
| tf                   | Fall time                        |                                                                 |     | 14   |      | ns   |
| toff                 | Turn-off time                    |                                                                 |     | 80   |      | ns   |