

## isc N-Channel MOSFET Transistor

## SPA20N60C3

## • FEATURES

- New revolutionary high voltage technology
- Ultra low gate charge
- High peak current capability
- Improved transconductance
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## • APPLICATIONS

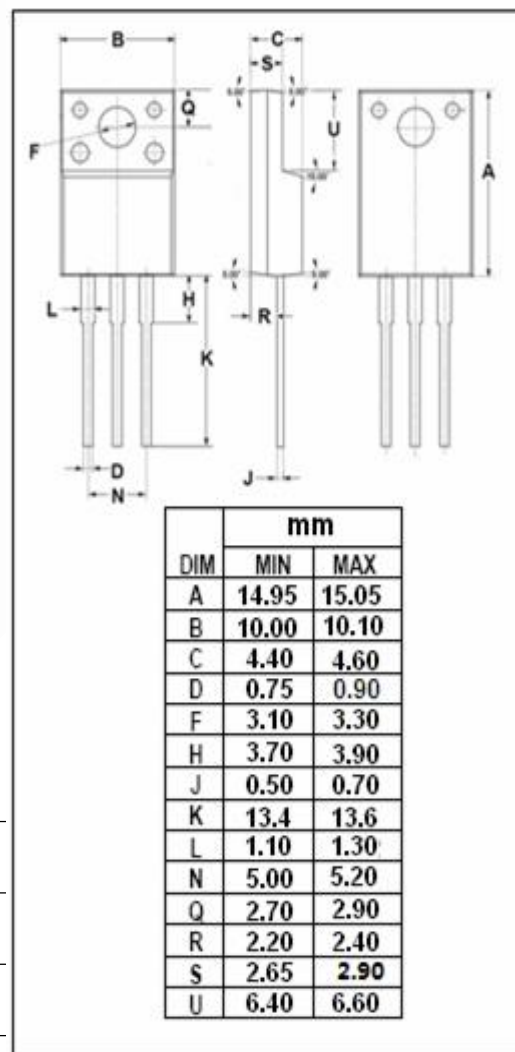
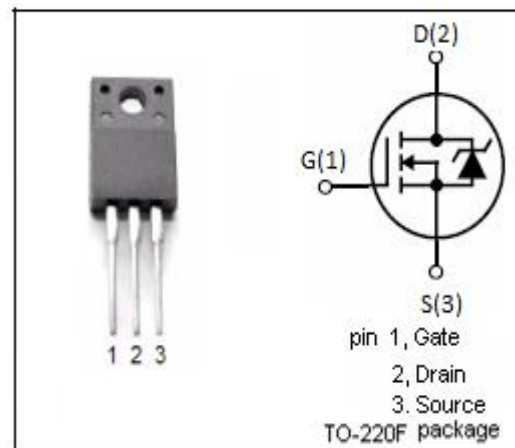
- Switching applications

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

| SYMBOL    | PARAMETER                                                                       | VALUE        | UNIT               |
|-----------|---------------------------------------------------------------------------------|--------------|--------------------|
| $V_{DS}$  | Drain-Source Voltage                                                            | 600          | V                  |
| $V_{GS}$  | Gate-Source Voltage                                                             | $\pm 30$     | V                  |
| $I_D$     | Drain Current-Continuous@ $T_c=25^{\circ}\text{C}$<br>$T_c=100^{\circ}\text{C}$ | 20.7<br>13.1 | A                  |
| $I_{DM}$  | Drain Current-Single Pulsed                                                     | 62.1         | A                  |
| $P_D$     | Total Dissipation                                                               | 34.5         | W                  |
| $T_j$     | Operating Junction Temperature                                                  | -55~150      | $^{\circ}\text{C}$ |
| $T_{stg}$ | Storage Temperature                                                             | -55~150      | $^{\circ}\text{C}$ |

## • THERMAL CHARACTERISTICS

| SYMBOL         | PARAMETER                             | MAX | UNIT                 |
|----------------|---------------------------------------|-----|----------------------|
| $R_{th(ch-c)}$ | Channel-to-case thermal resistance    | 3.6 | $^{\circ}\text{C/W}$ |
| $R_{th(ch-a)}$ | Channel-to-ambient thermal resistance | 62  | $^{\circ}\text{C/W}$ |



**isc N-Channel MOSFET Transistor****SPA20N60C3****ELECTRICAL CHARACTERISTICS****T<sub>C</sub>=25°C unless otherwise specified**

| SYMBOL              | PARAMETER                      | CONDITIONS                                                                                  | MIN | TYP | MAX      | UNIT |
|---------------------|--------------------------------|---------------------------------------------------------------------------------------------|-----|-----|----------|------|
| BV <sub>DSS</sub>   | Drain-Source Breakdown Voltage | V <sub>GS</sub> =0V; I <sub>D</sub> = 0.25mA                                                | 600 |     |          | V    |
| V <sub>GS(th)</sub> | Gate Threshold Voltage         | V <sub>DS</sub> =±30V; I <sub>D</sub> =1mA                                                  |     | 3   | 3.9      | V    |
| R <sub>DS(on)</sub> | Drain-Source On-Resistance     | V <sub>GS</sub> = 10V; I <sub>D</sub> =13.1A                                                |     | 160 | 190      | mΩ   |
| I <sub>GSS</sub>    | Gate-Source Leakage Current    | V <sub>GS</sub> = ±30V; V <sub>DS</sub> = 0V                                                |     |     | ±0.1     | μA   |
| I <sub>DSS</sub>    | Drain-Source Leakage Current   | V <sub>DS</sub> = 600V; V <sub>GS</sub> = 0V; T <sub>J</sub> =25°C<br>T <sub>J</sub> =125°C |     |     | 1<br>100 | μA   |
| V <sub>SDF</sub>    | Diode forward voltage          | I <sub>SD</sub> =20.7A, V <sub>GS</sub> = 0 V                                               |     |     | 1.2      | V    |