

# Isc N-Channel MOSFET Transistor

## IPB320N20N3G

### • FEATURES

- With To-263(D2PAK) package
- Low input capacitance and gate charge
- Low gate input resistance
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### • APPLICATIONS

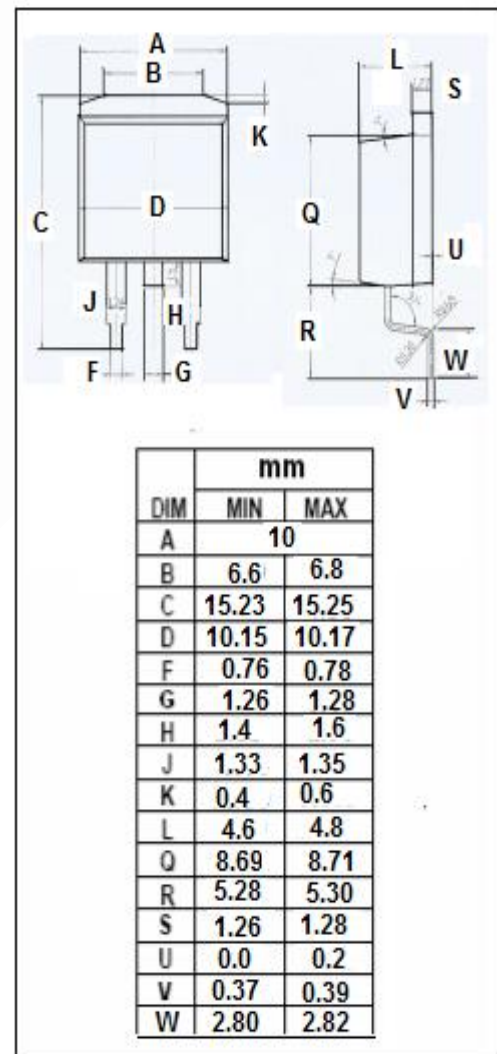
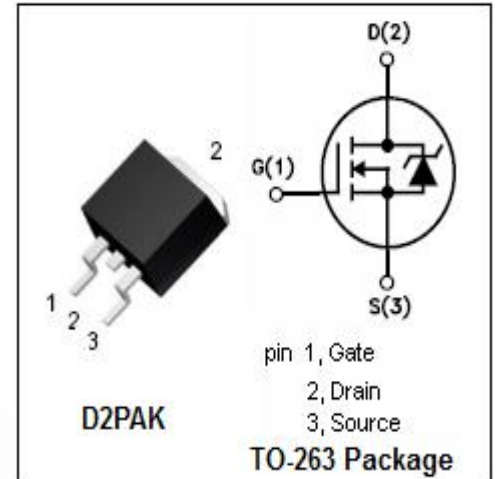
- Switching applications

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

| SYMBOL    | PARAMETER                                                                         | VALUE    | UNIT               |
|-----------|-----------------------------------------------------------------------------------|----------|--------------------|
| $V_{DS}$  | Drain-Source Voltage                                                              | 200      | V                  |
| $V_{GS}$  | Gate-Source Voltage                                                               | $\pm 20$ | V                  |
| $I_D$     | Drain Current-Continuous<br>$T_c=25^{\circ}\text{C}$<br>$T_c=100^{\circ}\text{C}$ | 34<br>22 | A                  |
| $I_{DM}$  | Drain Current-Single Pulsed                                                       | 136      | A                  |
| $P_D$     | Total Dissipation @ $T_c=25^{\circ}\text{C}$                                      | 136      | W                  |
| $T_{ch}$  | Max. Operating Junction Temperature                                               | 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 | 40  | $^{\circ}\text{C/W}$ |



**Isc N-Channel MOSFET Transistor****IPB320N20N3G****ELECTRICAL CHARACTERISTICS** $T_c=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL       | PARAMETER                      | CONDITIONS                                                                                            | MIN | TYP | MAX       | UNIT      |
|--------------|--------------------------------|-------------------------------------------------------------------------------------------------------|-----|-----|-----------|-----------|
| $BV_{DSS}$   | Drain-Source Breakdown Voltage | $V_{GS}=0V; I_D=1.0mA$                                                                                | 200 |     |           | V         |
| $V_{GS(th)}$ | Gate Threshold Voltage         | $V_{DS}=V_{GS}; I_D=0.09mA$                                                                           | 2.0 |     | 4.0       | V         |
| $R_{DS(on)}$ | Drain-Source On-Resistance     | $V_{GS}=10V; I_D=34A$                                                                                 |     | 28  | 32        | $m\Omega$ |
| $I_{GSS}$    | Gate-Source Leakage Current    | $V_{GS}=\pm 20V; V_{DS}=0V$                                                                           |     |     | $\pm 0.1$ | $\mu A$   |
| $I_{DSS}$    | Drain-Source Leakage Current   | $V_{DS}=160V; V_{GS}=0V; T_j=25^{\circ}\text{C}$<br>$V_{DS}=160V; V_{GS}=0V; T_j=125^{\circ}\text{C}$ |     |     | 1<br>100  | $\mu A$   |
| $V_{SDF}$    | Diode forward voltage          | $I_{SD}=34A, V_{GS}=0V$                                                                               |     | 1.0 | 1.2       | V         |