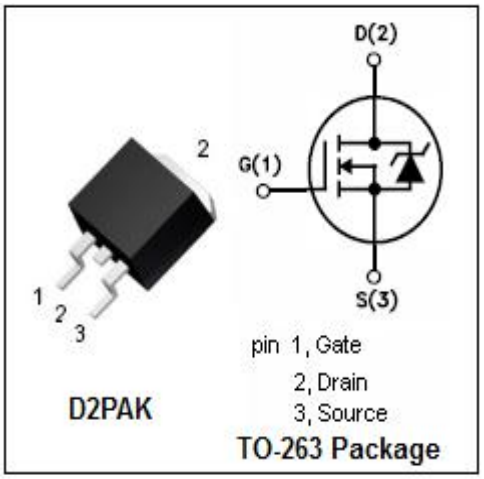
# isc N-Channel MOSFET Transistor IPB042N10N3G




- **FEATURES**
- With TO-263(D2PAK) packaging
- Ultra-fast body diode
- High speed switching
- Very low on-resistence
- Easy to use
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operationz

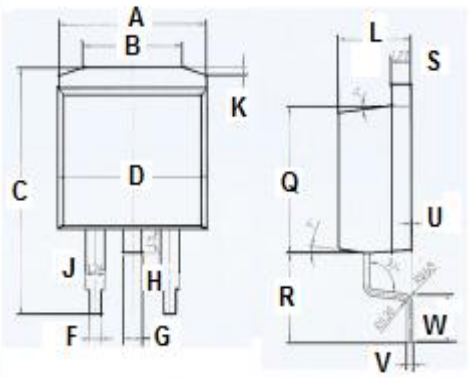
- **APPLICATIONS**
- Switching applications

- **ABSOLUTE MAXIMUM RATINGS($T_a$=25℃)**

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{DSS}$ | Drain-Source Voltage | 100 | V |
| $V_{GSS}$ | Gate-Source Voltage | ±20 | V |
| $I_D$ | Drain Current-Continuous@Tc=25℃<br>Tc=100℃ | 137<br>150 | A |
| $I_{DM}$ | Drain Current-Single Pulsed | 548 | A |
| $P_D$ | Total Dissipation | 214 | W |
| $T_j$ | Operating Junction Temperature | -55~175 | ℃ |
| $T_{stg}$ | Storage Temperature | -55~175 | ℃ |

- **THERMAL CHARACTERISTICS**

| SYMBOL | PARAMETER | MAX | UNIT |
|---|---|---|---|
| Rth(ch-c) | Channel-to-case thermal resistance | 0.7 | ℃/W |
| Rth(ch-a) | Channel-to-ambient thermal resistance | 62 | ℃/W |




| DIM | mm MIN | MAX |
|---|---|---|
| A | 10 | |
| B | 6.6 | 6.8 |
| C | 15.23 | 15.25 |
| D | 10.15 | 10.17 |
| F | 0.76 | 0.78 |
| G | 1.26 | 1.28 |
| H | 1.4 | 1.6 |
| J | 1.33 | 1.35 |
| K | 0.4 | 0.6 |
| L | 4.6 | 4.8 |
| Q | 8.69 | 8.71 |
| R | 5.28 | 5.30 |
| S | 1.26 | 1.28 |
| U | 0.0 | 0.2 |
| V | 0.37 | 0.39 |
| W | 2.80 | 2.82 |

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## ELECTRICAL CHARACTERISTICS

**$T_C$=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| $BV_{DSS}$ | Drain-Source Breakdown Voltage | $V_{GS}$=0V; $I_D$= 1mA | 100 | | | V |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS}$=±20V; $I_D$=0.43mA | 2 | | 3.5 | V |
| $R_{DS(on)}$ | Drain-Source On-Resistance | $V_{GS}$= 10V; $I_D$=100A | | 3.6 | 4.2 | mΩ |
| $I_{GSS}$ | Gate-Source Leakage Current | $V_{GS}$= ±20V;$V_{DS}$= 0V | | | ±0.1 | μA |
| $I_{DSS}$ | Drain-Source Leakage Current | $V_{DS}$= 100V; $V_{GS}$= 0V@Tj=25℃<br>Tj=125℃ | | | 1<br>100 | μA |
| $V_{SDF}$ | Diode forward voltage | $I_{SD}$=100A, $V_{GS}$ = 0 V | | | 1.2 | V |