

isc N-Channel MOSFET Transistor

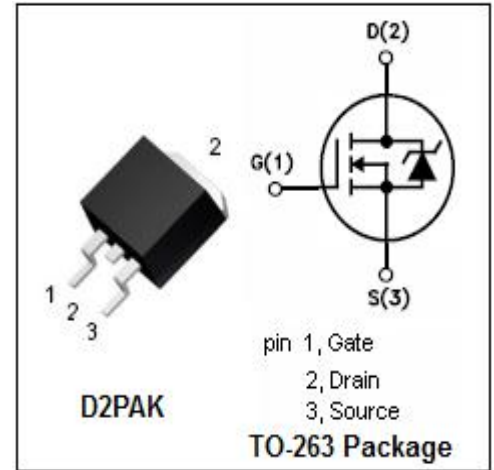
IPB042N10N3G

• FEATURES

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

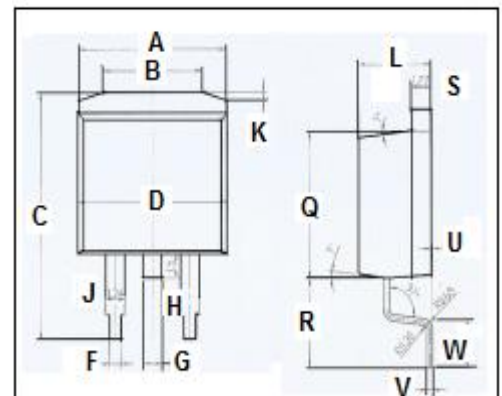
• APPLICATIONS

- Switching applications



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

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



| 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 |

• THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|----------------|---------------------------------------|-----|--------------------|
| $R_{th(ch-c)}$ | Channel-to-case thermal resistance | 0.7 | $^\circ\text{C/W}$ |
| $R_{th(ch-a)}$ | Channel-to-ambient thermal resistance | 62 | $^\circ\text{C/W}$ |

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ELECTRICAL CHARACTERISTICS

T_C=25°C 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@T _j =25°C T _j =125°C | | | 1 100 | μA |
| V _{SDF} | Diode forward voltage | I _{SD} =100A, V _{GS} = 0 V | | | 1.2 | V |

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