

**isc N-Channel MOSFET Transistor**

**SPW20N60S5**

**ISPW20N60S5**

**• FEATURES**

- Static drain-source on-resistance:  
 $R_{ds(on)} \leq 190m\Omega$
- Enhancement mode:
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**• DESCRIPTION**

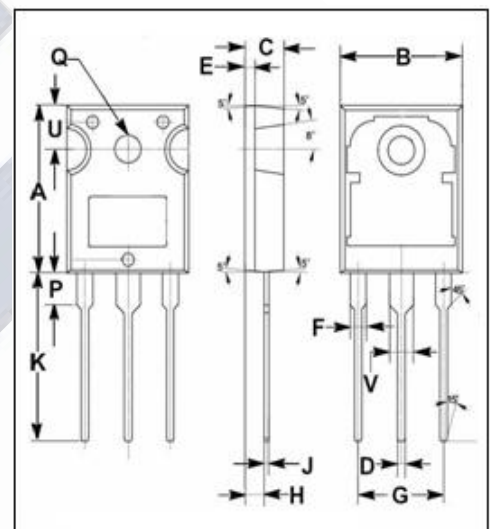
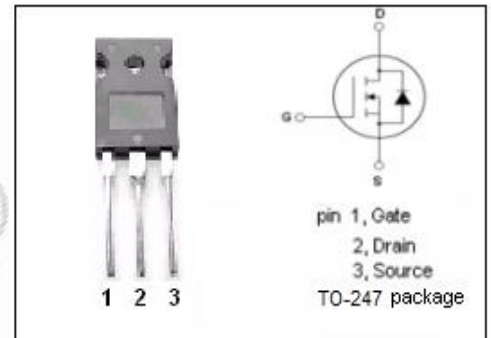
- Improved transconductance

**• ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)**

| SYMBOL           | PARAMETER                               | VALUE   | UNIT |
|------------------|---|---------|------|
| V <sub>DSS</sub> | Drain-Source Voltage                    | 600     | V    |
| V <sub>GS</sub>  | Gate-Source Voltage                     | ±20     | V    |
| I <sub>D</sub>   | Drain Current-Continuous                | 20      | A    |
| I <sub>DM</sub>  | Drain Current-Single Pulsed             | 40      | A    |
| P <sub>D</sub>   | Total Dissipation @T <sub>c</sub> =25°C | 208     | W    |
| T <sub>j</sub>   | Max. Operating Junction Temperature     | 150     | °C   |
| T <sub>stg</sub> | Storage Temperature                     | -55~150 | °C   |

**• THERMAL CHARACTERISTICS**

| SYMBOL               | PARAMETER                             | MAX | UNIT |
|----------------------|---------------------------------------|-----|------|
| R <sub>th(j-c)</sub> | Channel-to-case thermal resistance    | 0.6 | °C/W |
| R <sub>th(j-a)</sub> | Channel-to-ambient thermal resistance | 50  | °C/W |



| DIM | mm    |       |
|-----|-------|-------|
|     | MIN   | MAX   |
| A   | 19.80 | 20.20 |
| B   | 15.40 | 15.80 |
| C   | 4.90  | 5.10  |
| D   | 0.90  | 1.10  |
| E   | 1.40  | 1.60  |
| F   | 1.90  | 2.10  |
| G   | 10.80 | 11.00 |
| H   | 2.40  | 2.60  |
| J   | 0.50  | 0.70  |
| K   | 19.50 | 20.50 |
| P   | 3.90  | 4.10  |
| Q   | 3.30  | 3.50  |
| U   | 5.20  | 5.40  |
| V   | 2.90  | 3.10  |

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**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> =V <sub>GS</sub> ; I <sub>D</sub> =1mA | 3.5 |     | 5.5 | V    |
| R <sub>DS(on)</sub> | Drain-Source On-Resistance     | V <sub>GS</sub> =10V; I <sub>D</sub> =13A              |     |     | 190 | mΩ   |
| I <sub>GSS</sub>    | Gate-Source Leakage Current    | V <sub>GS</sub> = 20V; 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            |     |     | 5   | μA   |
| V <sub>SD</sub>     | Diode forward voltage          | I <sub>F</sub> =I <sub>S</sub> , V <sub>GS</sub> = 0V  |     |     | 1.2 | V    |