

## isc N-Channel MOSFET Transistor

## FQD13N10

## • FEATURES

- Static drain-source on-resistance:  
 $R_{DS(on)} \leq 0.18 \Omega$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## • DESCRIPTION

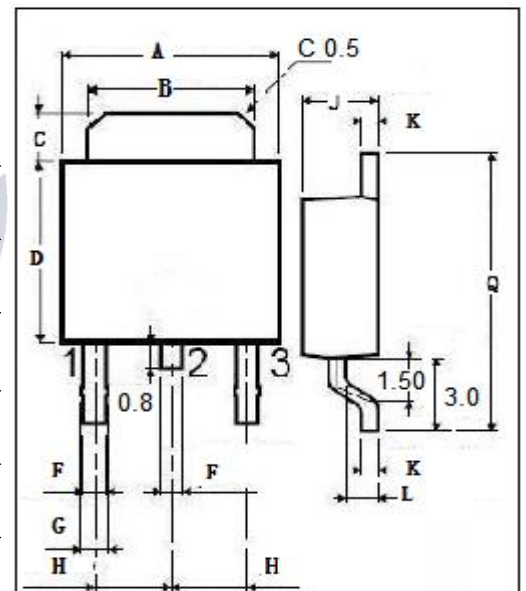
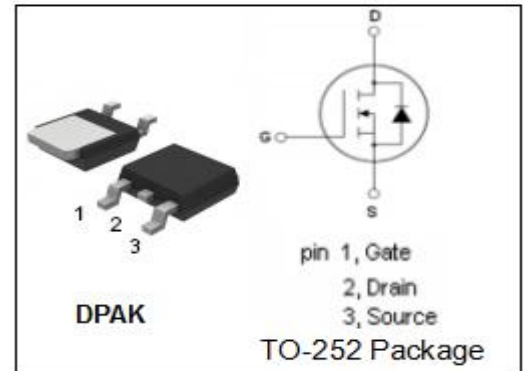
- Switching applications

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

| SYMBOL    | PARAMETER                                  | VALUE    | UNIT             |
|-----------|--------------------------------------------|----------|------------------|
| $V_{DS}$  | Drain-Source Voltage                       | 100      | V                |
| $V_{GS}$  | Gate-Source Voltage                        | $\pm 25$ | V                |
| $I_D$     | Drain Current-Continuous                   | 10       | A                |
| $I_{DM}$  | Drain Current-Single Pulsed                | 40       | A                |
| $P_D$     | Total Dissipation @ $T_c=25^\circ\text{C}$ | 40       | W                |
| $T_j$     | Max. Operating Junction Temperature        | 150      | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature                        | -55~150  | $^\circ\text{C}$ |

## • THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                          | MAX | UNIT               |
|---------------|------------------------------------|-----|--------------------|
| $R_{th(j-c)}$ | Channel-to-case thermal resistance | 3.1 | $^\circ\text{C/W}$ |



| DIM | mm   |      |
|-----|------|------|
|     | MIN  | MAX  |
| A   | 6.40 | 6.60 |
| B   | 5.20 | 5.40 |
| C   | 1.15 | 1.35 |
| D   | 5.70 | 6.10 |
| F   | 0.65 |      |
| G   | 0.75 |      |
| H   | 2.10 | 2.50 |
| J   | 2.10 | 2.40 |
| K   | 0.40 | 0.60 |
| L   | 0.90 | 1.10 |
| Q   | 9.90 | 10.1 |

**isc N-Channel MOSFET Transistor****FQD13N10****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> =250 μA                        | 100 |     |      | V    |
| V <sub>GS(th)</sub> | Gate Threshold Voltage         | V <sub>DS</sub> =V <sub>GS</sub> ; I <sub>D</sub> =250 μA          | 2   |     | 4    | V    |
| R <sub>DS(on)</sub> | Drain-Source On-Resistance     | V <sub>GS</sub> =10V; I <sub>D</sub> =5A                           |     |     | 0.18 | Ω    |
| I <sub>GSS</sub>    | Gate-Source Leakage Current    | V <sub>GS</sub> = ±25V                                             |     |     | ±100 | nA   |
| I <sub>DSS</sub>    | Drain-Source Leakage Current   | V <sub>DS</sub> = 100V; V <sub>GS</sub> = 0V                       |     |     | 1    | μA   |
|                     |                                | V <sub>DS</sub> = 80V; V <sub>GS</sub> = 0V; T <sub>C</sub> =125°C |     |     | 10   | μA   |
| V <sub>SD</sub>     | Diode forward voltage          | I <sub>SD</sub> = 10A, V <sub>GS</sub> = 0V                        |     |     | 1.5  | V    |

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