

## isc N-Channel MOSFET Transistor

FDP8440

## FEATURES

- Drain Current  $-I_D = 277A @ T_C = 25^\circ C$
- Drain Source Voltage-  
:  $V_{DS} = 40V(\text{Min})$
- Static Drain-Source On-Resistance  
:  $R_{DS(on)} = 2.2m\Omega (\text{Max}) @ V_{GS} = 10V$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## DESCRIPTION

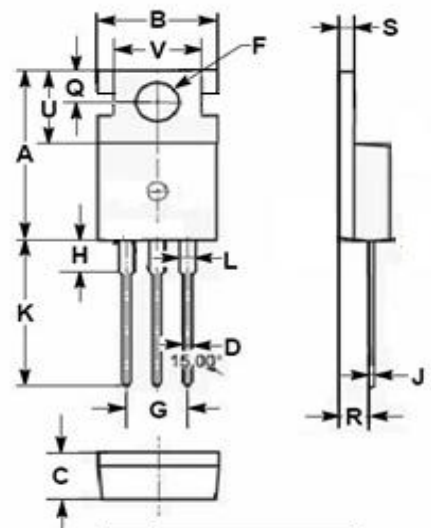
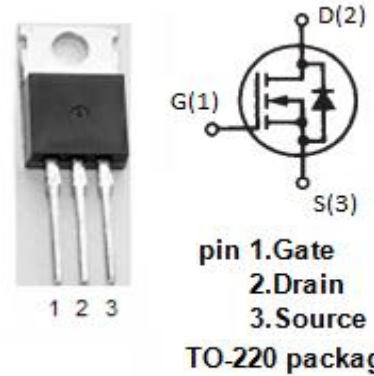
- motor drive, DC-DC converter, power switch and solenoid drive.

ABSOLUTE MAXIMUM RATINGS( $T_a = 25^\circ C$ )

| SYMBOL    | PARAMETER                              | VALUE    | UNIT       |
|-----------|----------------------------------------|----------|------------|
| $V_{DS}$  | Drain-Source Voltage                   | 40       | V          |
| $V_{GS}$  | Gate-Source Voltage-Continuous         | $\pm 20$ | V          |
| $I_D$     | Drain Current-Continuous               | 277      | A          |
| $I_{DM}$  | Drain Current-Single Pluse             | 500      | A          |
| $P_D$     | Total Dissipation @ $T_C = 25^\circ C$ | 306      | W          |
| $T_J$     | Max. Operating Junction Temperature    | 175      | $^\circ C$ |
| $T_{stg}$ | Storage Temperature                    | -55~175  | $^\circ C$ |

## THERMAL CHARACTERISTICS

| SYMBOL       | PARAMETER                            | MAX  | UNIT         |
|--------------|--------------------------------------|------|--------------|
| $R_{th j-c}$ | Thermal Resistance, Junction to Case | 0.49 | $^\circ C/W$ |



| DIM | mm    |       |
|-----|-------|-------|
|     | MIN   | MAX   |
| A   | 15.50 | 15.90 |
| B   | 9.80  | 10.20 |
| C   | 4.20  | 4.50  |
| D   | 0.70  | 0.90  |
| F   | 3.40  | 3.70  |
| G   | 4.98  | 5.18  |
| H   | 2.68  | 2.90  |
| J   | 0.44  | 0.60  |
| K   | 12.80 | 13.40 |
| L   | 1.20  | 1.45  |
| Q   | 2.70  | 2.90  |
| R   | 2.30  | 2.70  |
| S   | 1.29  | 1.35  |
| U   | 6.45  | 6.65  |
| V   | 8.66  | 8.86  |

## isc N-Channel MOSFET Transistor

## FDP8440

## ELECTRICAL CHARACTERISTICS

T<sub>C</sub>=25°C unless otherwise specified

| SYMBOL               | PARAMETER                       | CONDITIONS                                                  | MIN | MAX  | UNIT |
|----------------------|---------------------------------|-------------------------------------------------------------|-----|------|------|
| V <sub>(BR)DSS</sub> | Drain-Source Breakdown Voltage  | V <sub>GS</sub> = 0; I <sub>D</sub> = 0.25mA                | 40  | --   | V    |
| V <sub>GS(th)</sub>  | Gate Threshold Voltage          | V <sub>DS</sub> = V <sub>GS</sub> ; I <sub>D</sub> = 0.25mA | 1.0 | 3.0  | V    |
| R <sub>DS(on)</sub>  | Drain-Source On-Resistance      | V <sub>GS</sub> = 4.5V; I <sub>D</sub> =80A                 | --  | 2.4  | mΩ   |
| R <sub>DS(on)</sub>  | Drain-Source On-Resistance      | V <sub>GS</sub> = 10V; I <sub>D</sub> =80A                  | --  | 2.2  | mΩ   |
| I <sub>GSS</sub>     | Gate-Body Leakage Current       | V <sub>GS</sub> = ±20V; V <sub>DS</sub> = 0                 | --  | ±100 | nA   |
| I <sub>DSS</sub>     | Zero Gate Voltage Drain Current | V <sub>DS</sub> =32V; V <sub>GS</sub> = 0                   | --  | 1    | uA   |
| V <sub>SD</sub>      | Forward On-Voltage              | I <sub>S</sub> =80A; V <sub>GS</sub> = 0                    | --  | 1.25 | V    |
| V <sub>SD</sub>      | Forward On-Voltage              | I <sub>S</sub> =40A; V <sub>GS</sub> = 0                    | --  | 1.0  | V    |

## NOTICE:

ISC reserves the rights to make changes of the content herein the datasheet at any time without notification. The information contained herein is presented only as a guide for the applications of our products.

ISC products are intended for usage in general electronic equipment. The products are not designed for use in equipment which require specialized quality and/or reliability, or in equipment which could have applications in hazardous environments, aerospace industry, or medical field. Please contact us if you intend our products to be used in these special applications.

ISC makes no warranty or guarantee regarding the suitability of its products for any particular purpose, nor does ISC assume any liability arising from the application or use of any products, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages.

