

# isc N-Channel MOSFET Transistor

# FQL40N50

### • FEATURES

- High breakdown voltage
- Fast Switching Speed
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### • APPLICATIONS

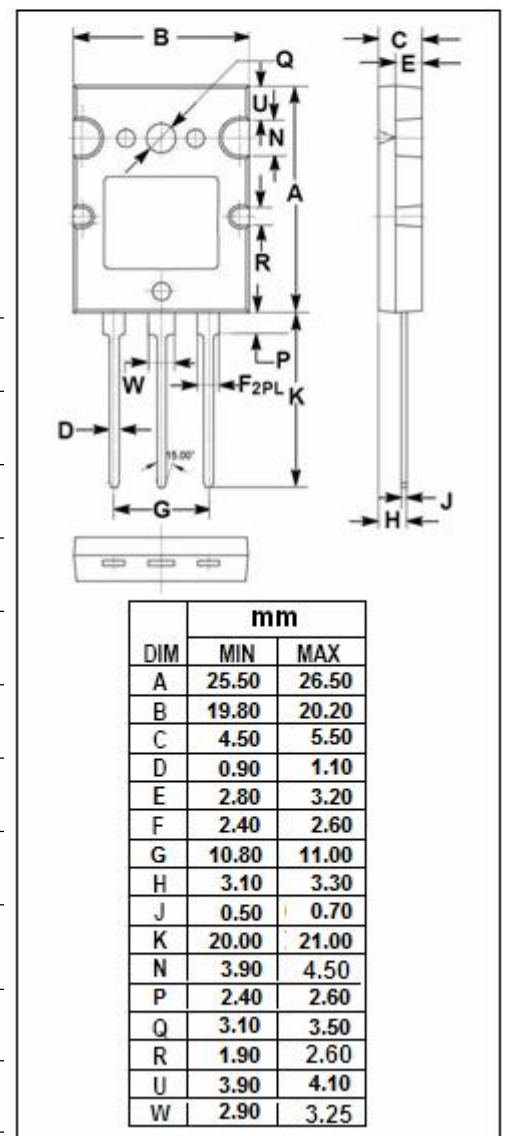
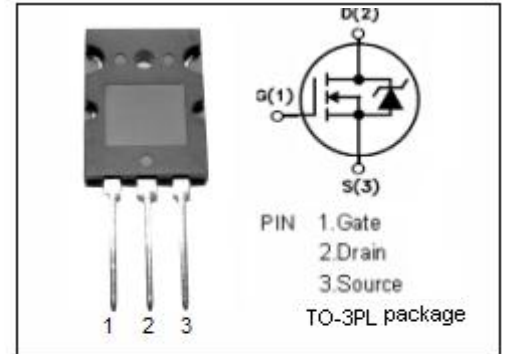
- High speed power switching
- Power factor correction, motor drive and welding machine

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DSS}$	Drain-Source Voltage	500	V
$V_{GS}$	Gate-Source Voltage	$\pm 30$	V
$I_D$	Drain Current-Continuous	40	A
$I_{DM}$	Drain Current-Single Pulsed	160	A
$P_D$	Total Dissipation @ $T_c=25^{\circ}\text{C}$	460	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
$R_{th(ch-c)}$	Channel-to-case thermal resistance	0.27	$^{\circ}\text{C/W}$



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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> =250 μ A	500			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> ; I <sub>D</sub> =250 μ A	3		5	V
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> =10V; I <sub>D</sub> =20A			0.11	Ω
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> = ±30V; V <sub>DS</sub> =0V			±100	nA
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =500V; V <sub>GS</sub> = 0V			1	μ A
		V <sub>DS</sub> =400V; V <sub>GS</sub> = 0V; T <sub>C</sub> =125°C			10	
V <sub>SD</sub>	Diode forward voltage	I <sub>F</sub> =40A; V <sub>GS</sub> = 0V			1.4	V

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