

# Isc N-Channel MOSFET Transistor

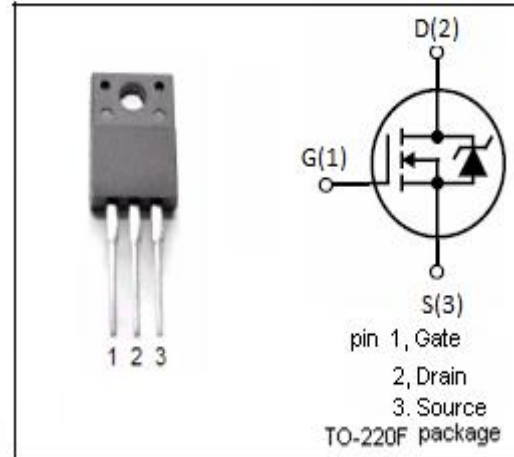
# FDPF12N50NZ

**• FEATURES**

- With TO-220F package
- Low input capacitance and gate charge
- Reduced switching and conduction losses
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

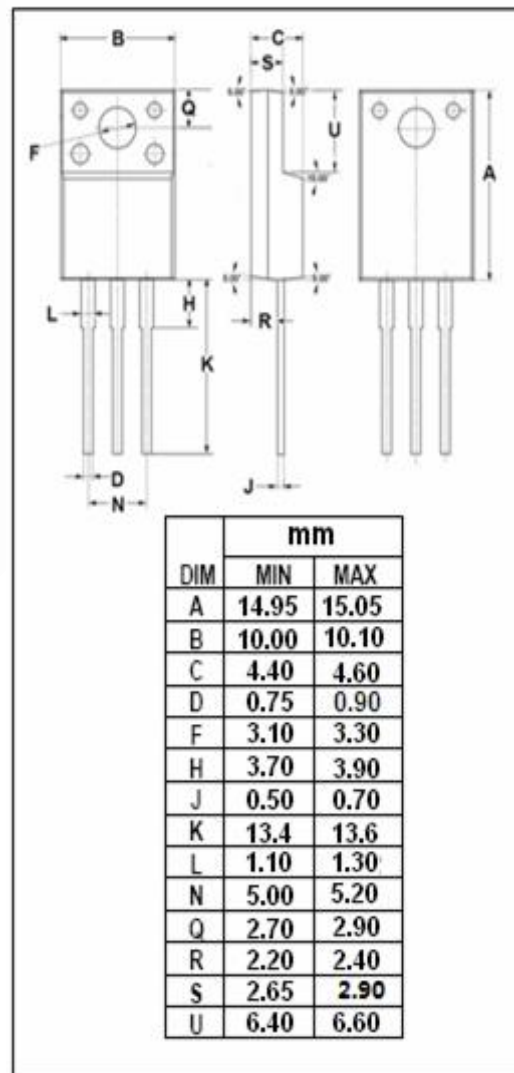
**• APPLICATIONS**

- Switching applications



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

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>DSS</sub>	Drain-Source Voltage	500	V
V <sub>GSS</sub>	Gate-Source Voltage	±25	V
I <sub>D</sub>	Drain Current-Continuous @T <sub>c</sub> =25°C (V <sub>GS</sub> at 10V) T <sub>c</sub> =100°C	11.5 6.9	A
I <sub>DM</sub>	Drain Current-Single Pulsed	46	A
P <sub>D</sub>	Total Dissipation @T <sub>c</sub> =25°C	42	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
Rth(ch-c)	Channel-to-case thermal resistance	3.0	°C/W
Rth(ch-a)	Channel-to-ambient thermal resistance	62.5	°C/W

**Isc N-Channel MOSFET Transistor****FDPF12N50NZ****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V; I_D=0.25mA$	500			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}; I_D=0.25mA$	3.0		5.0	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V; I_D=5.72A$		460	520	$m\Omega$
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS}=\pm 25V; V_{DS}=0V$			$\pm 10$	$\mu A$
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS}=500V; V_{GS}=0V; T_J=25^{\circ}\text{C}$ $V_{DS}=400V; V_{GS}=0V; T_J=150^{\circ}\text{C}$			1 10	$\mu A$
$V_{SDF}$	Diode forward voltage	$I_{SD}=11.5A, V_{GS}=0V$			1.4	V