

# Isc N-Channel MOSFET Transistor

# FDP12N50NZ

### • 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

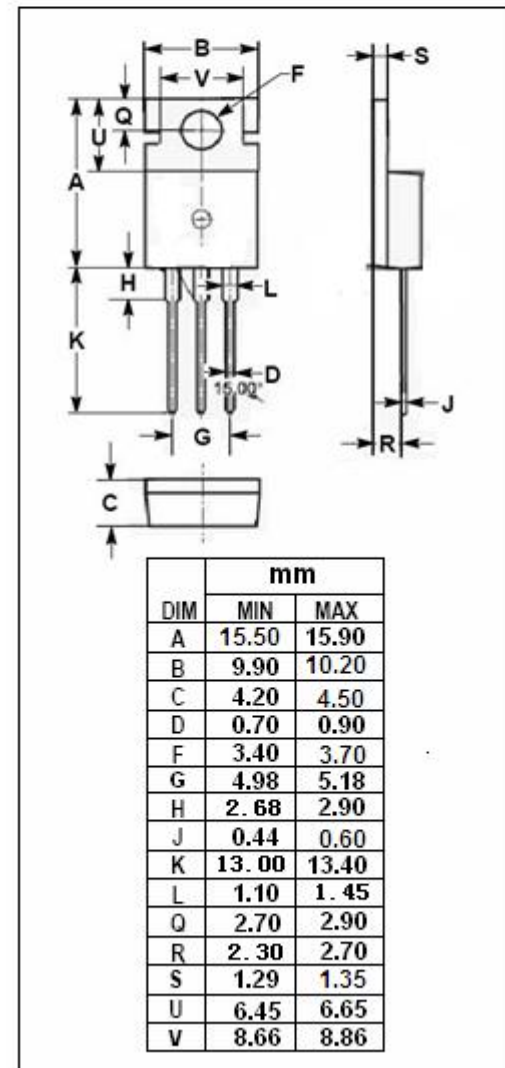
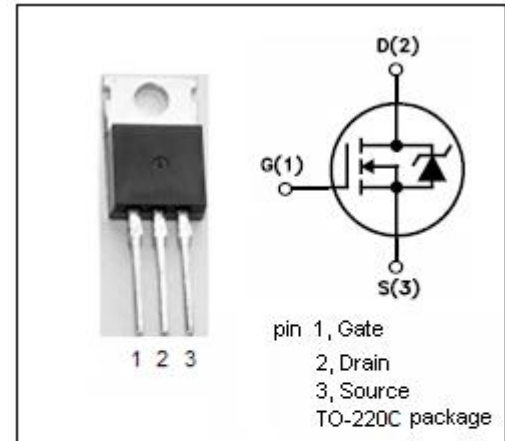
- Switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DS}$	Drain-Source Voltage	500	V
$V_{GS}$	Gate-Source Voltage	$\pm 25$	V
$I_D$	Drain Current-Continuous ( $V_{GS}$ at 10V) @ $T_c=25^{\circ}\text{C}$ $T_c=100^{\circ}\text{C}$	11.5 6.9	A
$I_{DM}$	Drain Current-Single Pulsed	46	A
$P_D$	Total Dissipation @ $T_c=25^{\circ}\text{C}$	170	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	0.73	$^{\circ}\text{C}/\text{W}$
$R_{th(ch-a)}$	Channel-to-ambient thermal resistance	62.5	$^{\circ}\text{C}/\text{W}$



**Isc N-Channel MOSFET Transistor****FDP12N50NZ****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

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