

## Isc N-Channel MOSFET Transistor

## SPA12N50C3

## • FEATURES

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

## • APPLICATIONS

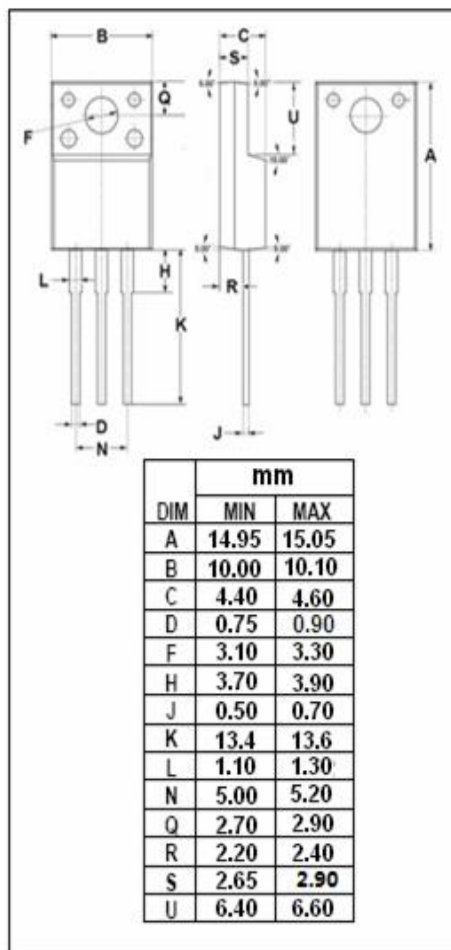
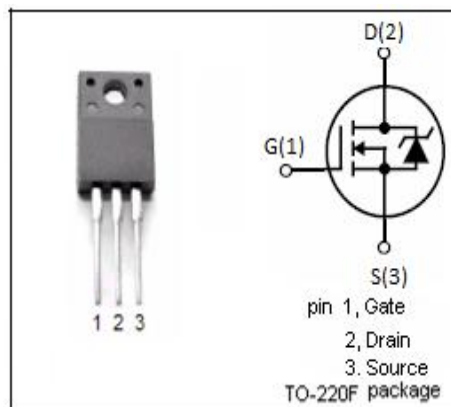
- Switching applications

• 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	$\pm 20$	V
$I_D$	Drain Current-Continuous @ $T_c=25^\circ\text{C}$ ( $V_{GS}$ at 10V) $T_c=100^\circ\text{C}$	11.6 7	A
$I_{DM}$	Drain Current-Single Pulsed	34.8	A
$P_D$	Total Dissipation @ $T_c=25^\circ\text{C}$	33	W
$T_j$	Max. Operating Junction Temperature	-55~150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~150	$^\circ\text{C}$

## • THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th(ch-c)}$	Channel-to-case thermal resistance	3.8	$^\circ\text{C/W}$
$R_{th(ch-a)}$	Channel-to-ambient thermal resistance	80	$^\circ\text{C/W}$



**Isc N-Channel MOSFET Transistor****SPA12N50C3****• ELECTRICAL CHARACTERISTICS****T<sub>c</sub>=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYPE	MAX	UNIT
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V; I <sub>D</sub> =0.25mA	500			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> ; I <sub>D</sub> =500uA	2.1	3	3.9	V
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> = 10V; I <sub>D</sub> =7A		0.34 0.92	0.38	Ω
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> = ±20V; 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; T <sub>j</sub> =25°C V <sub>DS</sub> =500V; V <sub>GS</sub> = 0V; T <sub>j</sub> =150°C		0.1	1 100	μ A
V <sub>SDF</sub>	Diode forward voltage	I <sub>SD</sub> =11.6A, V <sub>GS</sub> = 0 V		1	1.2	V

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