

## Isc N-Channel MOSFET Transistor

## SPA21N50C3

## • FEATURES

- Drain Source Voltage-  
:  $V_{DS}=500V(\text{Min})$
- Static Drain-Source On-Resistance  
:  $R_{DS(on)} = 0.19 \Omega (\text{Max})$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## • APPLICATIONS

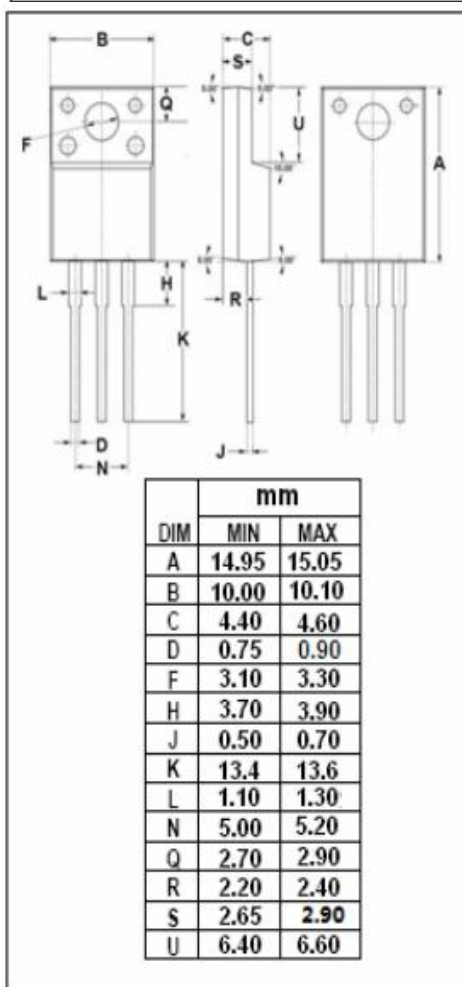
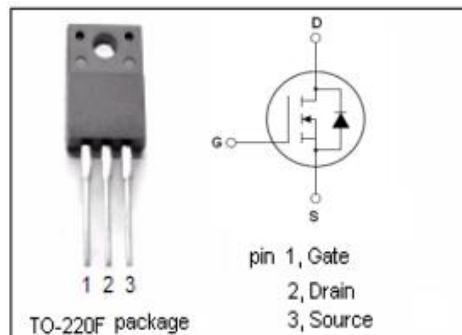
- Switching applications

• 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) $T_c=100^\circ\text{C}$	21 13.1	A
$I_{DM}$	Drain Current-Single Pulsed	63	A
$P_D$	Total Dissipation @ $T_c=25^\circ\text{C}$	34.5	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	3.6	$^\circ\text{C/W}$
$R_{th(ch-a)}$	Channel-to-ambient thermal resistance	80	$^\circ\text{C/W}$



**Isc N-Channel MOSFET Transistor****SPA21N50C3****• ELECTRICAL CHARACTERISTICS** $T_c=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYPE	MAX	UNIT
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V; I_D=0.25mA$	500			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}; I_D=1000\mu A$	2.1	3	3.9	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V; I_D=7A$		0.16	0.19	$\Omega$
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS}=\pm 20V; V_{DS}=0V$			$\pm 100$	nA
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS}=500V; V_{GS}=0V; T_j=25^{\circ}\text{C}$ $V_{DS}=500V; V_{GS}=0V; T_j=150^{\circ}\text{C}$		0.1	1 100	$\mu A$
$V_{SDF}$	Diode forward voltage	$I_{SD}=21A, V_{GS}=0V$		1	1.2	V

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