

# Isc N-Channel MOSFET Transistor

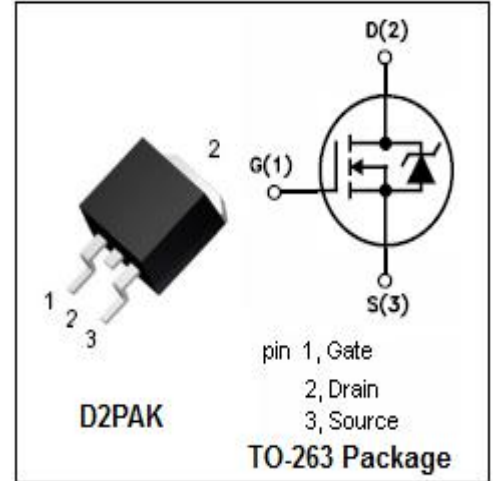
# IRFS31N20D

**• FEATURES**

- With To-263(D2PAK) package
- Low input capacitance and gate charge
- Low gate input resistance
- 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	200	V
V <sub>GSS</sub>	Gate-Source Voltage	±30	V
I <sub>D</sub>	Drain Current-Continuous T <sub>c</sub> =25°C T <sub>c</sub> =100°C	31 21	A
I <sub>DM</sub>	Drain Current-Single Pulsed	124	A
P <sub>D</sub>	Total Dissipation @T <sub>c</sub> =25°C	200	W
T <sub>ch</sub>	Max. Operating Junction Temperature	175	°C
T <sub>stg</sub>	Storage Temperature	-55~175	°C



DIM	mm	
	MIN	MAX
A	10	
B	6.6	6.8
C	15.23	15.25
D	10.15	10.17
F	0.76	0.78
G	1.26	1.28
H	1.4	1.6
J	1.33	1.35
K	0.4	0.6
L	4.6	4.8
Q	8.69	8.71
R	5.28	5.30
S	1.26	1.28
U	0.0	0.2
V	0.37	0.39
W	2.80	2.82

**• THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th(ch-c)</sub>	Channel-to-case thermal resistance	1.05	°C/W
R <sub>th(ch-a)</sub>	Channel-to-ambient thermal resistance	40	°C/W

**Isc N-Channel MOSFET Transistor****IRFS31N20D****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V; I_D=0.25mA$	200			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}; I_D=0.25mA$	3.0		5.5	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V; I_D=18A$			82	$m\Omega$
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS}=\pm 30V; V_{DS}=0V$			$\pm 0.1$	$\mu A$
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS}=200V; V_{GS}=0V; T_j=25^{\circ}\text{C}$ $V_{DS}=200V; V_{GS}=0V; T_j=150^{\circ}\text{C}$			1 100	$\mu A$
$V_{SDF}$	Diode forward voltage	$I_{SD}=18A, V_{GS}=0V$		1.0	1.3	V

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