

## isc N-Channel MOSFET Transistor

IRFB31N20D, IIRFB31N20D

### • FEATURES

- Static drain-source on-resistance:  $R_{DS(on)} \leq 82\text{m}\Omega$
- Enhancement mode
- Fast Switching Speed
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### • DESCRIPTION

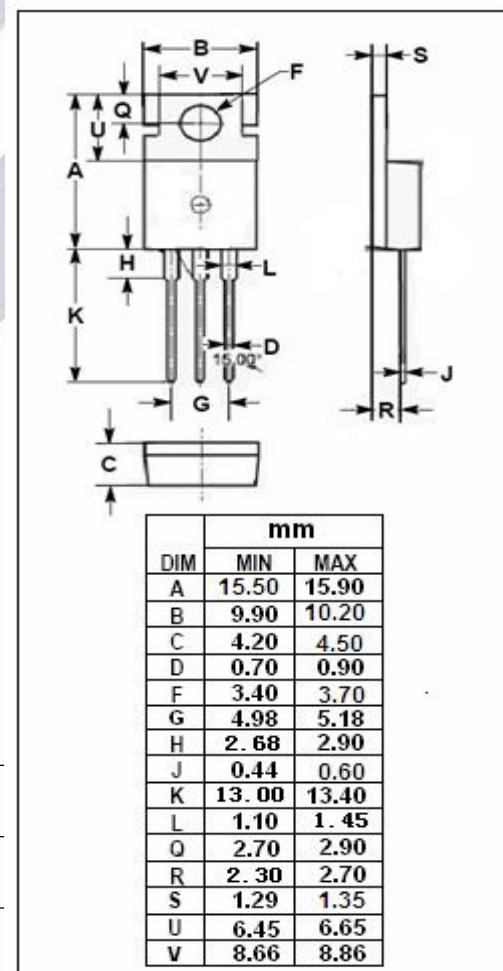
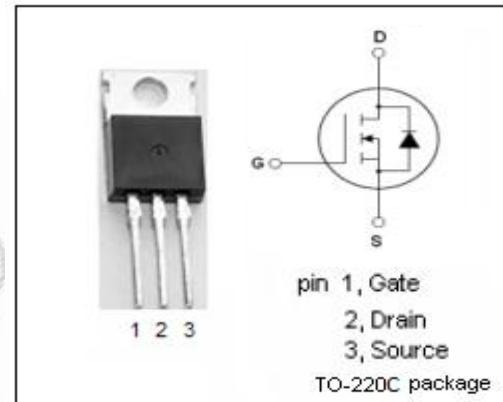
- reliable device for use in a wide variety of applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DSS}$	Drain-Source Voltage	200	V
$V_{GS}$	Gate-Source Voltage	$\pm 30$	V
$I_D$	Drain Current-Continuous	31	A
$I_{DM}$	Drain Current-Single Pulsed	124	A
$P_D$	Total Dissipation @ $T_c=25^\circ\text{C}$	200	W
$T_j$	Max. Operating Junction Temperature	175	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~175	$^\circ\text{C}$

### • THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th(ch-c)}$	Channel-to-case thermal resistance	0.75	$^\circ\text{C}/\text{W}$
$R_{th(ch-a)}$	Channel-to-ambient thermal resistance	62	$^\circ\text{C}/\text{W}$



**isc N-Channel MOSFET Transistor****IRFB31N20D, IIRFB31N20D****ELECTRICAL CHARACTERISTICS** $T_c=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$\text{BV}_{\text{DSS}}$	Drain-Source Breakdown Voltage	$\text{V}_{\text{GS}}=0\text{V}; \text{I}_D = 0.25\text{mA}$	200			V
$\text{V}_{\text{GS(th)}}$	Gate Threshold Voltage	$\text{V}_{\text{DS}}=\text{V}_{\text{GS}}; \text{I}_D = 0.25\text{mA}$	3		5.5	V
$\text{R}_{\text{DS(on)}}$	Drain-Source On-Resistance	$\text{V}_{\text{GS}}=10\text{V}; \text{I}_D=18\text{A}$			82	$\text{m}\Omega$
$\text{I}_{\text{GSS}}$	Gate-Source Leakage Current	$\text{V}_{\text{GS}}=\pm 30\text{V}; \text{V}_{\text{DS}}=0\text{V}$			$\pm 100$	nA
$\text{I}_{\text{DSS}}$	Drain-Source Leakage Current	$\text{V}_{\text{DS}}=200\text{V}; \text{V}_{\text{GS}}= 0\text{V}$			25	$\mu\text{A}$
$\text{V}_{\text{SD}}$	Diode forward voltage	$\text{I}_F=18\text{A}, \text{V}_{\text{GS}} = 0\text{V}$			1.3	V