5 é / Descriptions

N ?ú 3 TO-251 .> / / x « | • 'ož N-CHANNEL MOSFET in a TO-251 Plastic Package.

¤ª / Features

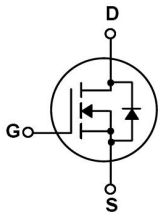
8* 9 U ŧ4 k y > z k) X Y4 k • ¼ , † ½ož

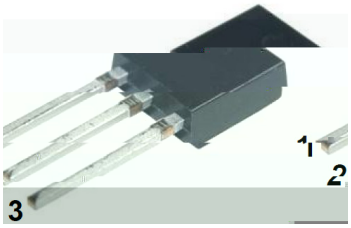
Low $R_{DS(on)}$,low gate charge, low C_{rss}, fast switching.

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9 z 9 è ò y V ñ èo• DC/DC ô Eo• Ž ` " D } › ä | ô Eož

Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products.





PIN1 y G PIN 2 y D PIN 3 y S

Z Ü B , M V / h_{FE} Classifications & Marking

• - ~ ª ¢ož See Marking Instructions.

Ã a ? d / Absolute Maximum Ratings(Ta=25 ;)

@ ƒ Parameter	… Z Symbol	ƒ › Rating	% y Unit
Drain-Source Voltage	V_{DSS}	20	V
Drain Current [G]	I_D(Tc=25)	30	A
	I_D(Tc=100)	20	A
Drain Current - Pulsed [C]	I_{DM}	120	A
Maximum Body-Diode Continuous Current [G]	I_S	30	A
Gate-Source Voltage	V_{GS}	±12	V
Avalanche Current [C]	I_{AS}	12	A
Avalanche energy L=0.5mH [C]	$E_{AS,}$	115	mJ
Power Dissipation [B]	P_D(Tc=25)	100	W
	P_D(Tc=100)	50	W
Power Dissipation [A]	P_{DSM}(T_A=25)	2.5	W
	P_{DSM}(T_A=70)	1.6	W
Junction and Storage Temperature Range	T_j È T_{stg}	-55 150	

Ô4ì × ? d / Electrical Characteristics(Ta=25 ;)

@ ƒ Parameter	… Z Symbol	y ¡ Ú ^ Test Conditions	Â 4 › Min	Á º › Typ	Â Ý › Max	% y Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250 A	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V V_{GS}=0V			1.0	A
		T_J=55°C			5.0	A
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±12V V_{DS}=0V			±0.1	A
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250 A	0.4	1.0	1.2	V
Static Drain-Source On-Resistance	$R_{DS(on)1}$	V_{GS}=10V I_D=30A		10	13	m
	$R_{DS(on)2}$	V_{GS}=4.5V I_D=15A		11	14	m
Diode Forward Voltage	V_{SD}	I_S=30A V_{GS}=0V		0.9	1.35	V

@ ƒ Parameter	… Z Symbol	y ¡ Ú ^ Test Conditions	Â 4 › Min	Á º › Typ	Â Ý › Max	% y Unit

Ô ? d • Ž ¢ / Electrical Characteristic Curve

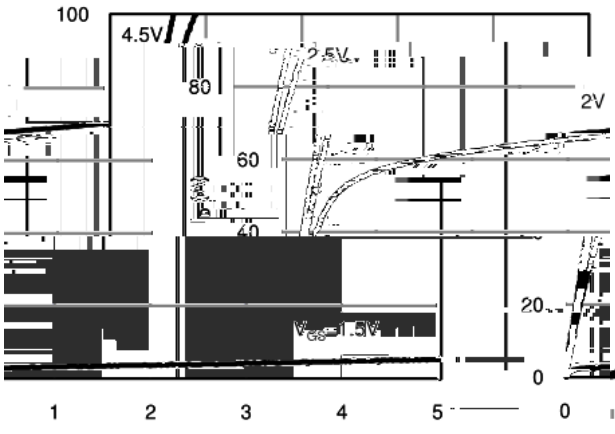


Fig 1: On-Region Characteristics

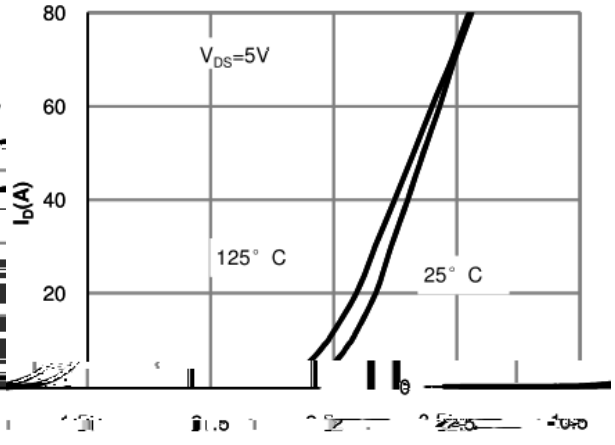
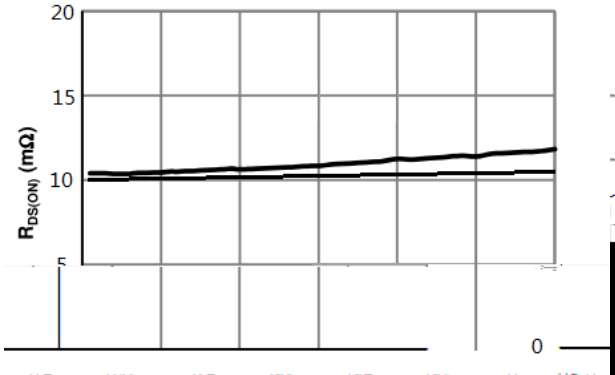
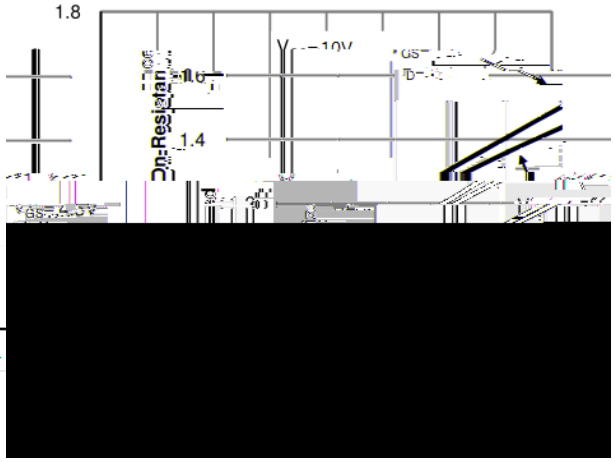
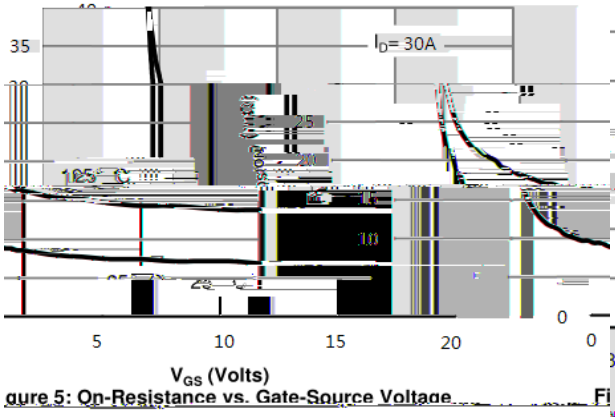


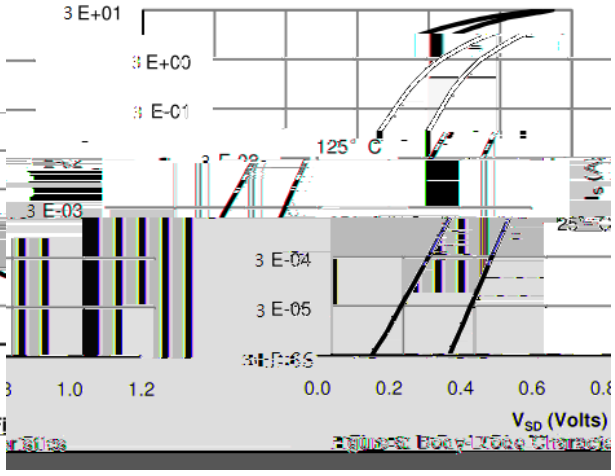
Figure 2: Transfer Characteristics







gure 5: On-Resistance vs. Gate-Source Voltage



Ô ? d • Ž ¢ / Electrical Characteristic Curve

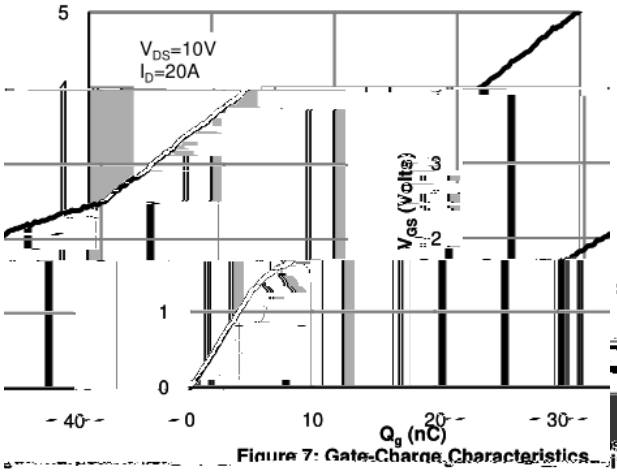


Figure 7: Gate-Charge Characteristics

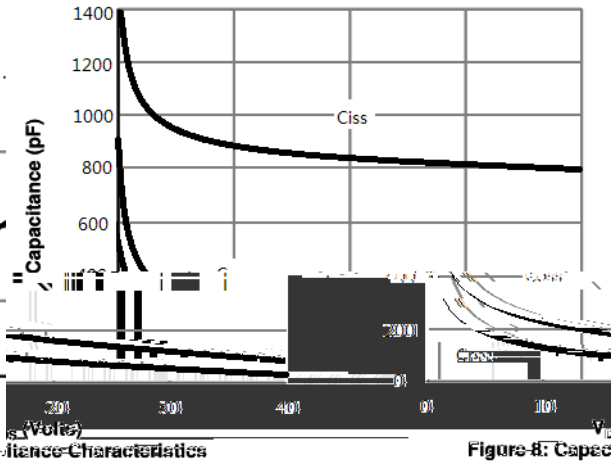
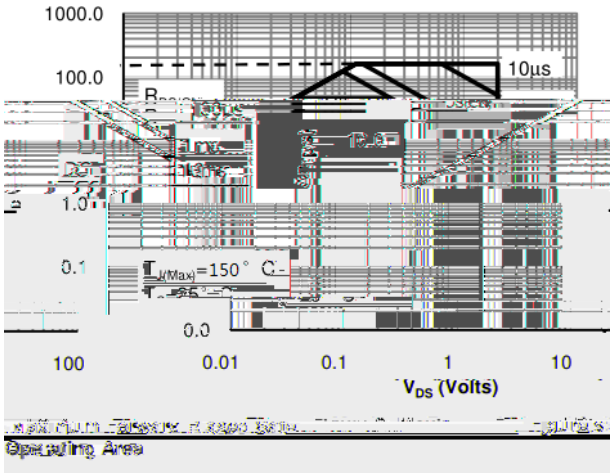


Figure 8: Capac



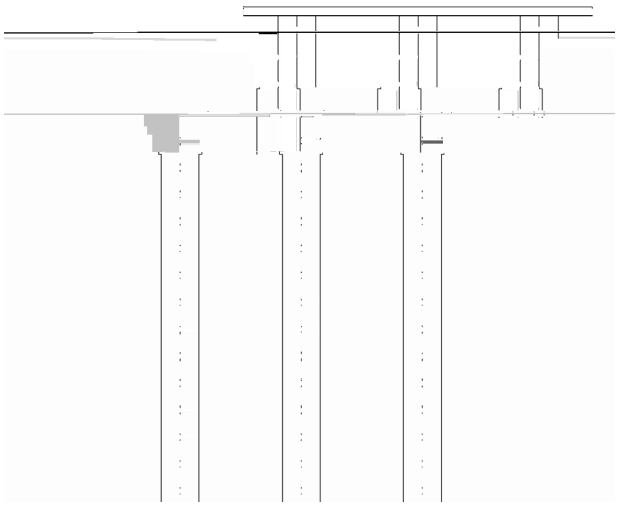
Operating Area



BRCS30N02IP

, M y ƒ / Marking Instructions





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Note:

BR: Company Code

30N02: Product Type Code.

****: Lot No. Code, code change with Lot No.