/ Descriptions

TO-251 N MOS N-CHANNEL MOSFET in a TO-251 Plastic Package.

/ Features

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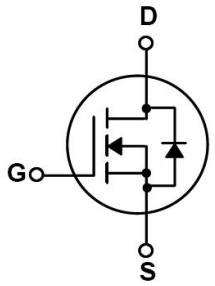
Low gate charge, low crss, fast switching.

/ Applications

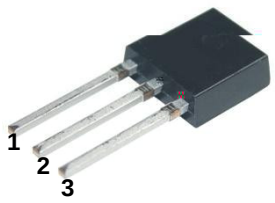
DC/DC

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 D PIN 3 S

/ h_{FE} Classifications & Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

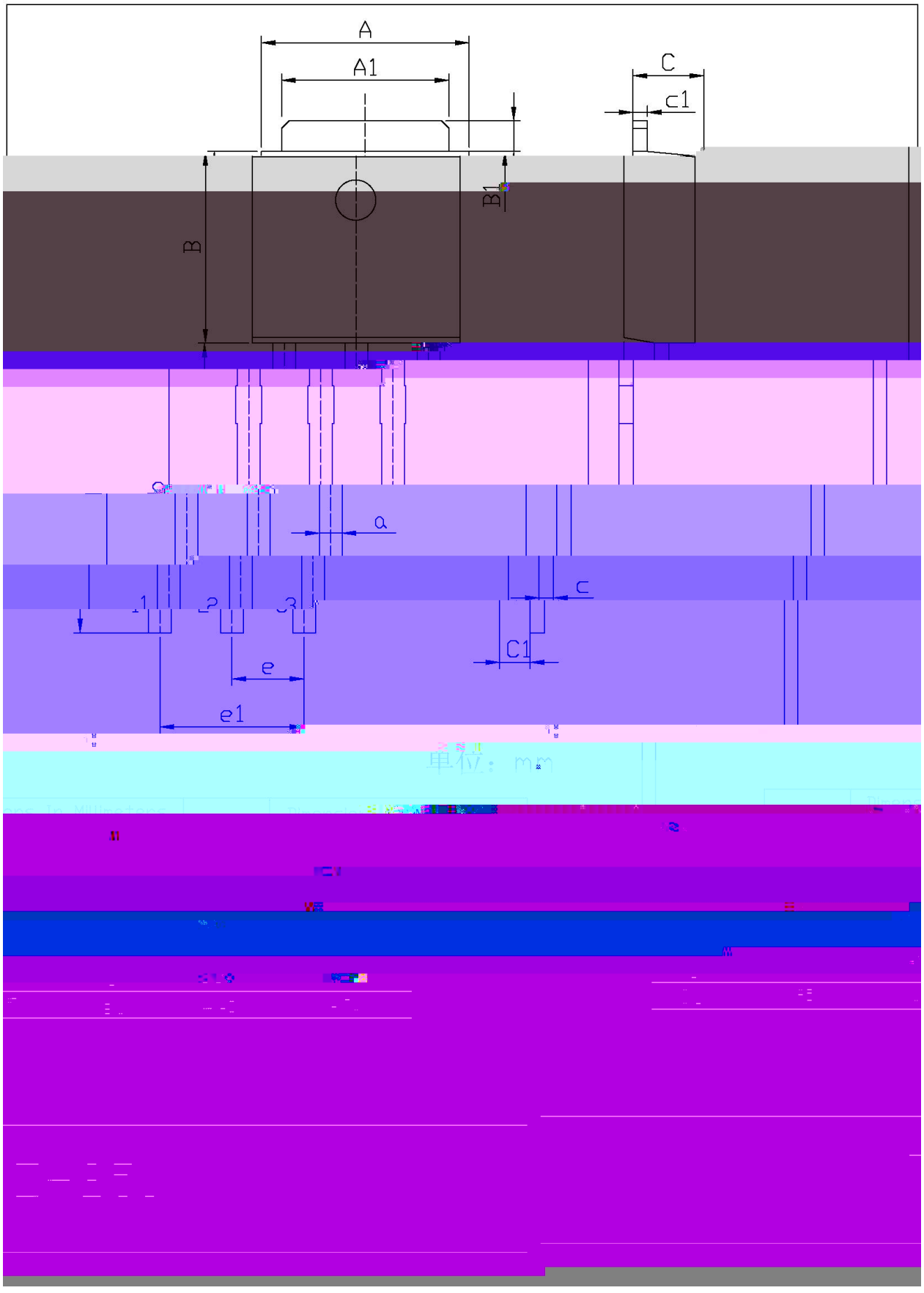
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	500	V
Drain Current	I_D(Tc=25)	5	A
Drain Current	I_D(Tc=100)	2.8	A
Drain Current - Pulsed	I_{DM}	16	A
Gate-Source Voltage	V_{GSS}	±30	V
Avalanche Current	I_{AR}	4	A
Single Pulsed Avalanche Energy	E_{AS}	300	mJ
Repetitive Avalanche Energy	E_{AR}	4.8	mJ
Power Dissipation (T_A=25)	P_D	2.5	W
Power Dissipation (T_C=25)	P_D	45	
Junction and Storage Temperature Range	T_{stg}	-55 to 150	

/ Electrical Characteristics(Ta=25)

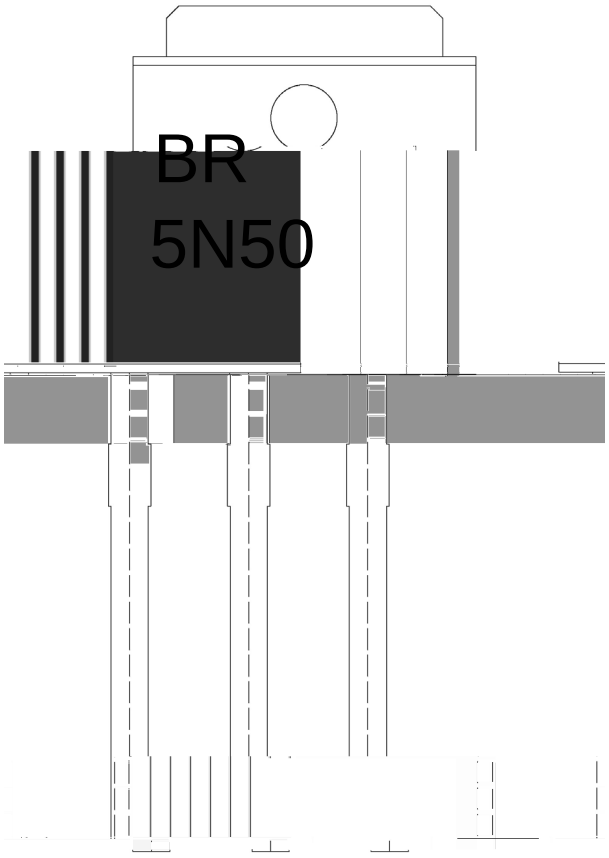
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250 A	500			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=500V V_{GS}=0V			1	A
		V_{DS}=400V T_C=125			10	A
Gate-Body Leakage Current, Forward	I_{GSS}	V_{GS}=±30V V_{DS}=0V			±0.1	A
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250 A	2		4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=2.5A		1.14	1.4	
Forward Transconductance	g_{FS}	V_{DS}=40V I_D=2A		5.2		S
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=5A			1.4	V
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1MHz		480	625	pF
Output Capacitance	C_{oss}			80	105	
Reverse Transfer Capacitance	C_{rss}			15	20	
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=250V I_D=5A R_G=25		12	35	ns
Turn-On Rise Time	t_r			46	100	
Turn-Off Delay Time	$t_{d(off)}$			50	110	
Turn-Off Fall Time	t_f			48	105	

/ Electrical Characteristic Curve

/ Package Dimensions



/ Marking Instructions



BR

5N50

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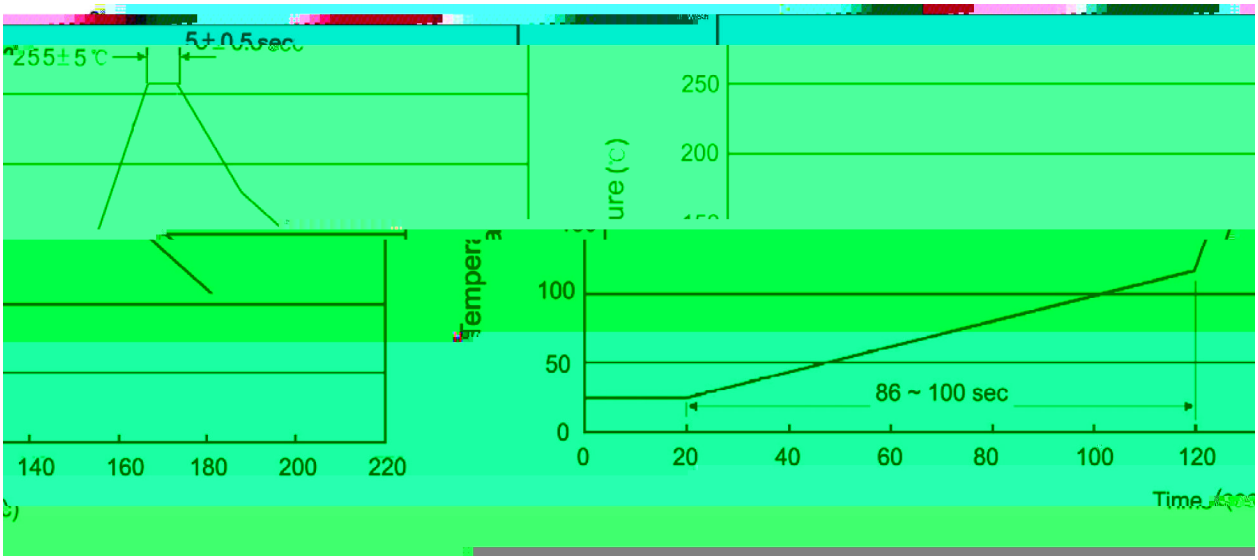
Note:

BR:	Company Code
5N50:	Product Type.
****:	Lot No. Code, code change with Lot No.

( ) / Temperature Profile for Dip Soldering(Pb-Free)



1	25	150		60	90sec;
2	255±5				5±0.5sec;
3			2	10	/sec.

Note:

1.Preheating:25~150 , Time:60~90sec.

2.Peak Temp.:255±5 , Duration:5±0.5sec.

3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

270±5	10±1 sec.	Temp.:270±5	Time:10±1 sec

/ Packaging SPEC.

/ BULK

Package Type	Units					Dimension		(unit mm^3)

/ TUBE

Package Type	Units	Dimension	(unit mm^3)