/ Descriptions

N TO-252

N-Channel MOSFET in a TO-252 Plastic Package.

/ Features

V_{DS}=200V I_D=9A V_{GS}=±20V

$R_{DS(on)}$@10V 0.4 (Type.0.35)

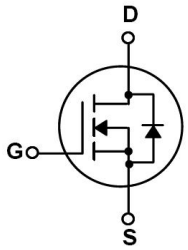
HF Product.

/ Applications

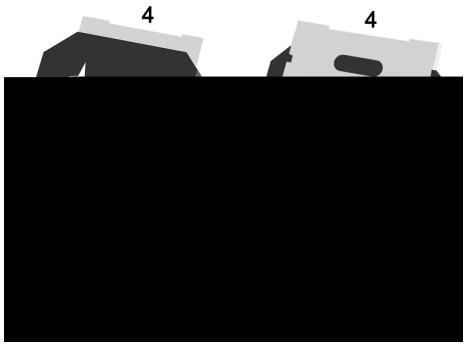
LED

Networking,Load Switch,LED applications.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 4 D PIN 3 S

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

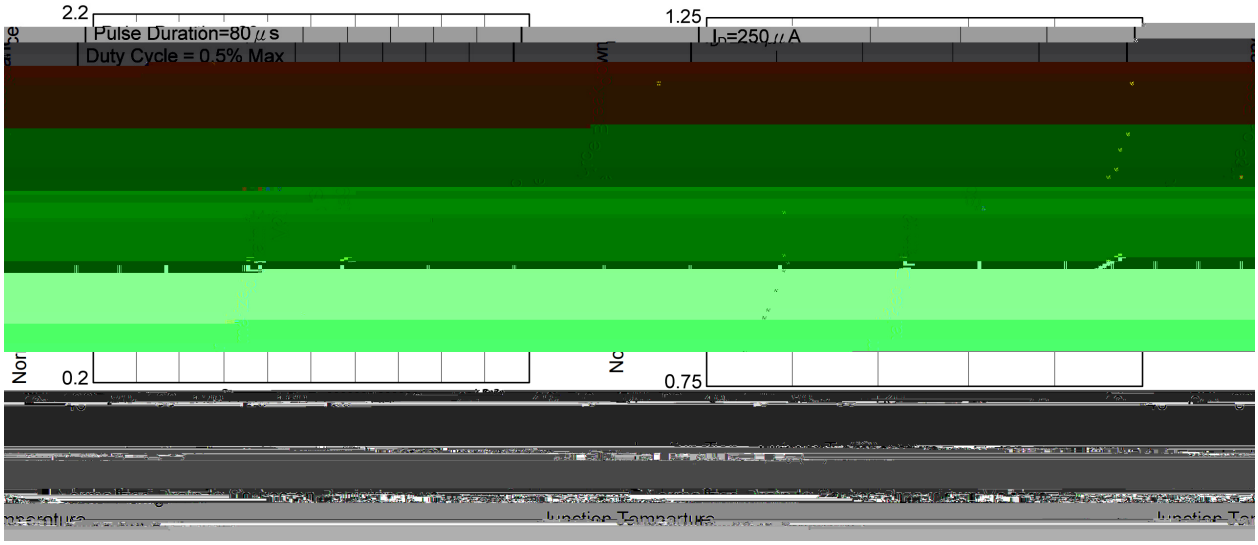
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	200	V
Drain Current	I_D(Tc=25)	9	A
Drain Current - Pulsed	I_{DM}	36	A
Gate-Source Voltage	V_{GS}	±20	V
Single Pulsed Avalanche Energy(L=10mH)	E_{AS}	166	mJ
Avalanche Current(L=10mH)	I_{AS}	5	A
Power Dissipation	P_D(Tc=25)	46	W
Operating and Storage Temperature Range	T_J,T_{STG}	-55 to 150	
Maximum Junction-to-Ambient	R_{JA}	100.3	/W
Maximum Junction-to-Case	R_{JC}	2.7	

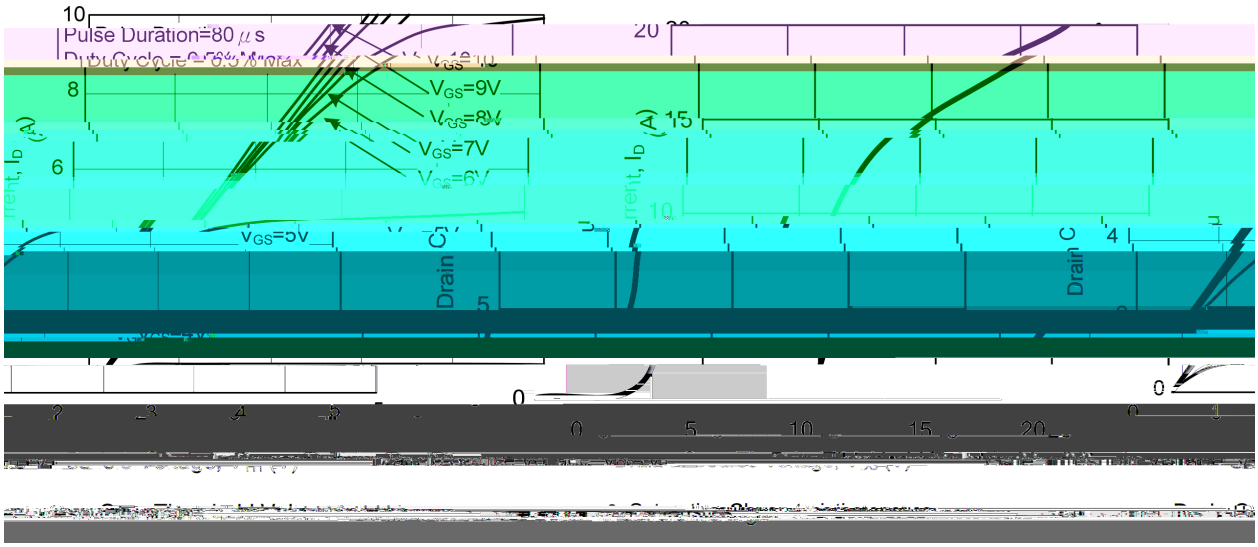
/ Electrical Characteristics(Ta=25)

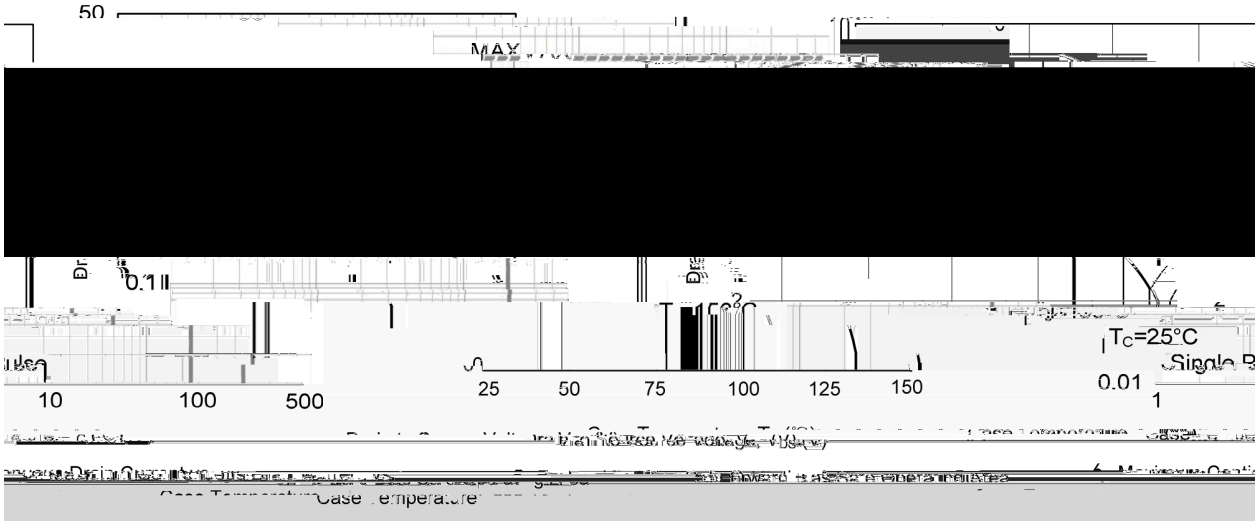
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250 A	200			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=200V V_{GS}=0V			1	A
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250 A	2	3	4	V
Total gate charge	$R_{DS(on)}$	V_{GS}=10V I_D=4.5A		0.35	0.4	
Gate resistance	R_g	VGS=0V VDS=0V, f=1MHz		1.7		
Input Capacitance	C_{iss}	VDS=25V VGS=0V f=1MHz		630		pF
Output Capacitance	C_{oss}			270		
Reverse Transfer Capacitance	C_{rss}			50		
Total Gate Charge	Q_g	VGS=10V, VDS=160V, I_G=1.5mA, I_D=9A		21	30	nC
Gate Source Charge	Q_{gs}			11.2	20	
Gate Drain Charge	Q_{gd}			9.5	15	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V V_{DS}=90V R_L=9.6Ω R_{GEN}=9.1Ω		15	32	ns
Turn-On Rise Time	t_r			33	53	
Turn-Off Delay Time	$t_{d(off)}$			40	55	
Turn-Off Fall Time	t_f			30	45	
Maximum Continuous Drain-Source Diode Forward Current	I_S				9	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}				36	A
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS} = 0 V, I_S = 9.0A			1.2	V
Reverse Recovery Time	t_{rr}	V_{GS} = 0V, I_S = 9.0A, dI_F/dt = 100 A/ s		455		nS
Reverse Recovery Charge	Q_{rr}			3.5		nC

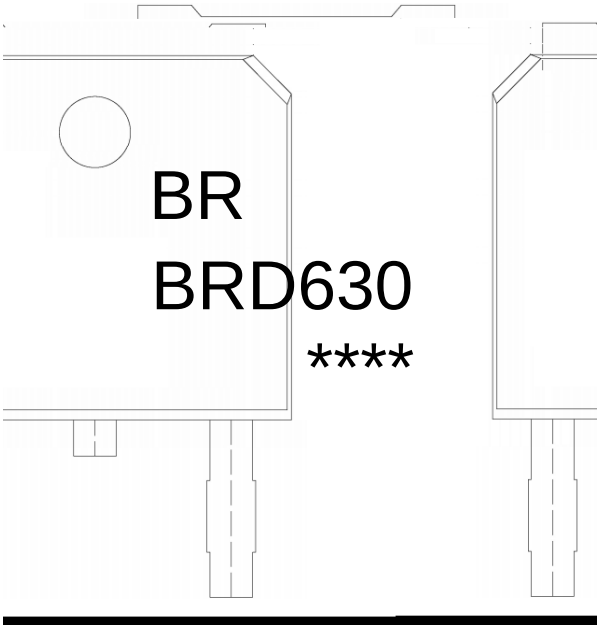
/ Electrical Characteristic Curve







/ Marking Instructions



BR

BRD630

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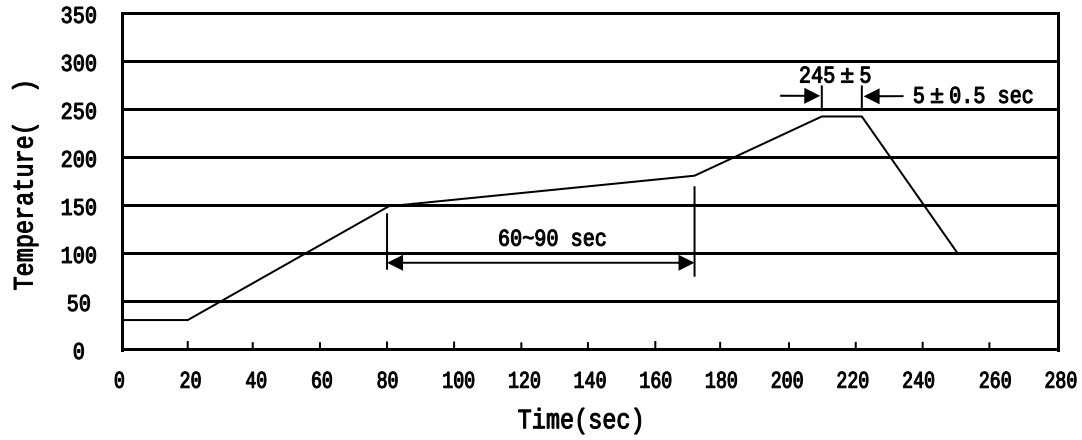
Note:

BR:	Company Code
BRD630:	Product Type Code
****:	Lot No. Code, code change with Lot No

( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

1 150 180 60 90sec; 1.Preheating:150~180 , Time:60~90sec.

2 245±5 5±0.5sec; 2.Peak Temp.:245±5 , Duration:5±0.5sec.

3 2 10 /sec. 3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension		(unit mm^3)
TO-252	2,500	2	5,000	6	30,000	13 ×16	360×360×50	380×335×366

/ TUBE

Package Type	Units					Dimension		(unit mm^3)
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

/ Notices