/ Revised record

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/ Descriptions

TO-252 : MOS

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

/ Features

12(/3!3

Low On-Resistance, fast switching, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

/ Applications

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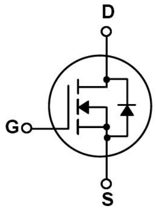
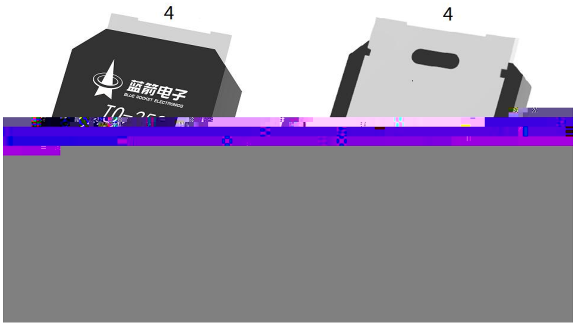
Power Management in DC/DC Converter.For LED Backlight DC-DC Boost Converter Solution, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 D PIN 3 S PIN 4 D

/ Marking

See Marking Instructions.

参数 Parameter		符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage		V_{DS}	100	V
Drain Current		I_D(Tc=25℃)	12	A
Drain Current - Pulsed		I_{DM}	28	A
Gate-Source Voltage		V_{GS}	±20	V
Single Pulsed Avalanche Energy		E_{AS}	35	mJ
Avalanche Current		I_{AS}	2.1	A
Power Dissipation		P_D(Tc=25℃)	21.5	W
Operating and Storage Temperature Range		T_J,T_{stg}	-55 to 150	℃
Junction-to-Ambient	t≤10	$R_{θJA}$	20	℃/W
Junction-to-Ambient	Steady-State		50	
Junction-to-Case	Steady-State	$R_{θJC}$	5.8	

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	100	106		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V V_{GS}=0V			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	1.0	1.8	3.0	V

/ Electrical Characteristics(Ta=25)

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V V_{DS}=50V I_D=5A		6.0		nC
Total Gate Charge	$Q_{g(4.5V)}$			2.9		
Gate Source Charge	Q_{gs}			1.0		
Gate Drain Charge	Q_{gd}			1.1		
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V V_{DS}=50V R_L=10Ω R_{GEN}=3Ω		6.2		ns
Turn-On Rise Time	t_r			2.7		
Turn-Off Delay Time	$t_{d(off)}$			18		
Turn-Off Fall Time	t_f			2.6		

/ Electrical Characteristic Curve

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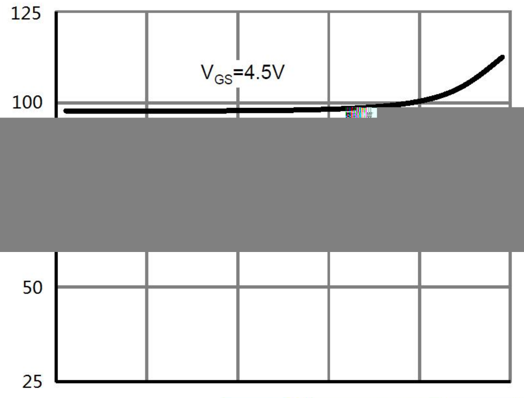

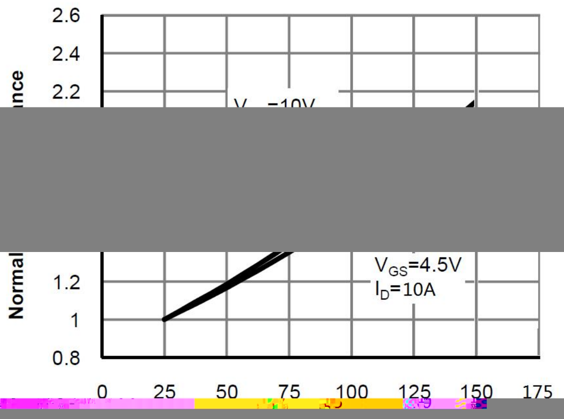

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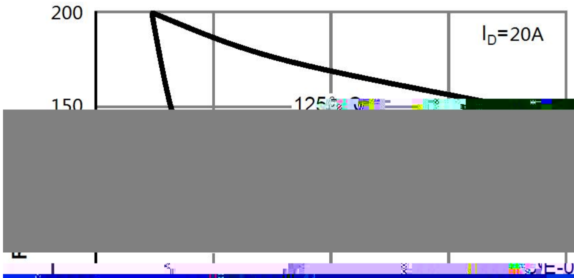

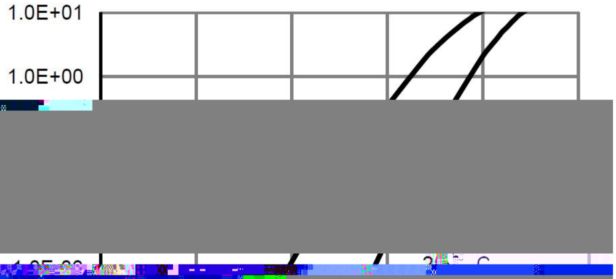

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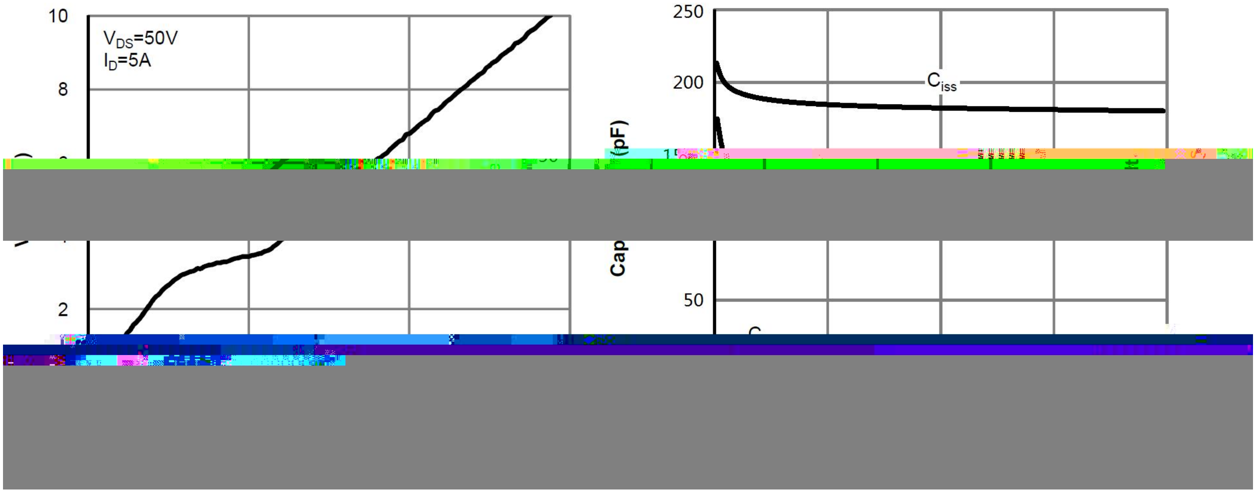
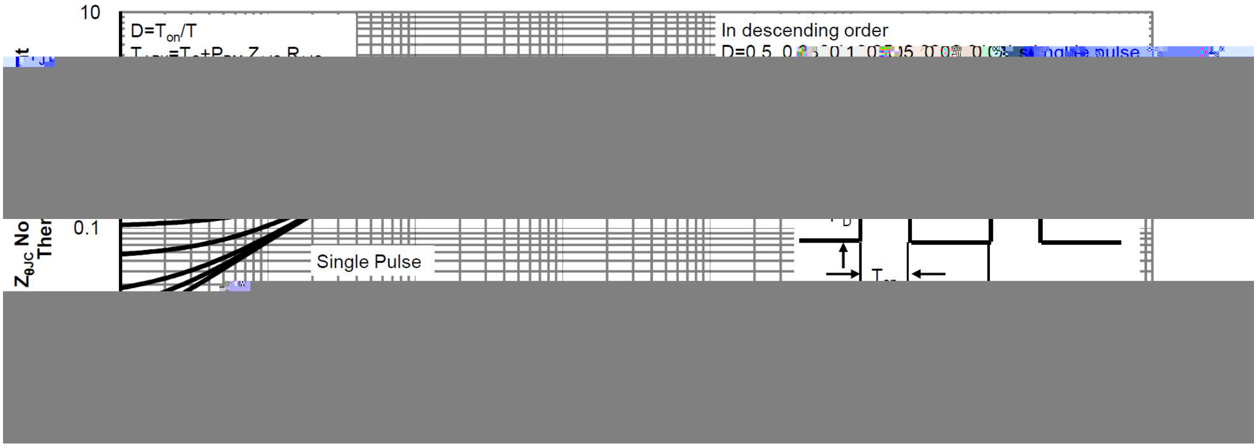
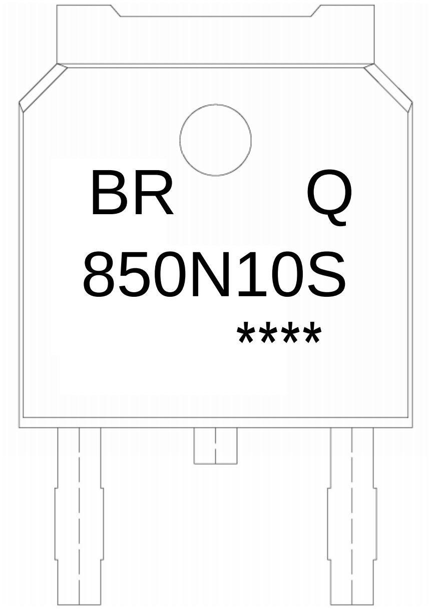
/ Electrical Characteristic Curve





/ Marking Instructions



BR

Q

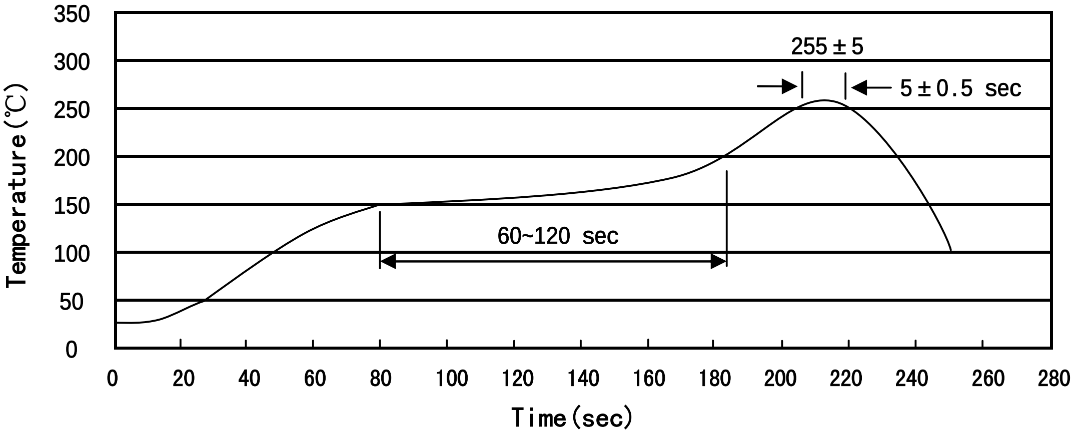
850N10S

****

Note:

BR:	Company Code
Q:	Automobile halogen-free product Code
850N10S:	Product Type
****:	Lot No. Code, code change with Lot No

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



Note:

1 150 200 60 120sec; 1.Preheating:150~200℃, Time:60~120sec.

2 255±5 5±0.5sec; 2.Peak Temp.:255±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 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm^3)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
TO-252	2,500	2	5,000	6	30,000	13″ ×16	360×360×50	380×335×366

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm^3)		
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Tube 套管	Inner Box 盒	Outer Box 箱
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

/ Notices