

/ Revised record

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/ Descriptions

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

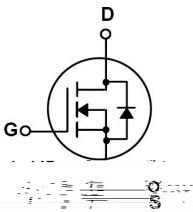
/ Features

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



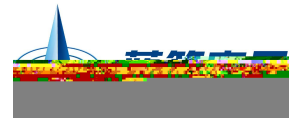
/ Pinning



PIN1 G PIN 2 D PIN 3 S PIN 4 D

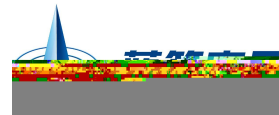
/ Marking

See Marking Instructions.



参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DS}	100	V
Drain Current	$I_D(T_C=25^{\circ}\text{C})$	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	$P_D(T_C=25^{\circ}\text{C})$	21.5	W
Operating and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^{\circ}\text{C}$
Junction-to-Ambient	$t \leq 10$	$R_{\theta JA}$	$^{\circ}\text{C/W}$
Junction-to-Ambient	Steady-State		
Junction-to-Case	Steady-State		

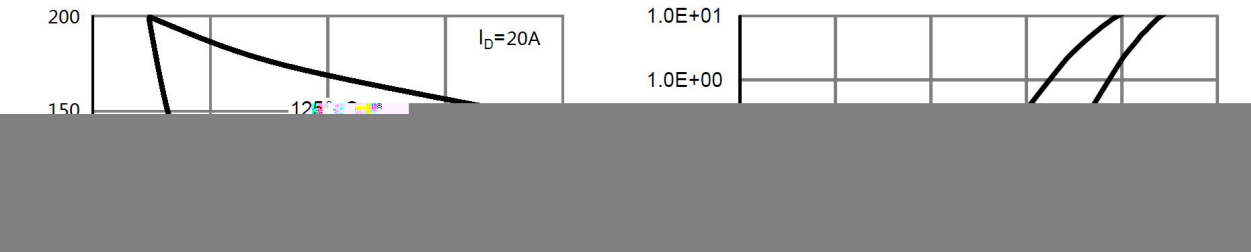
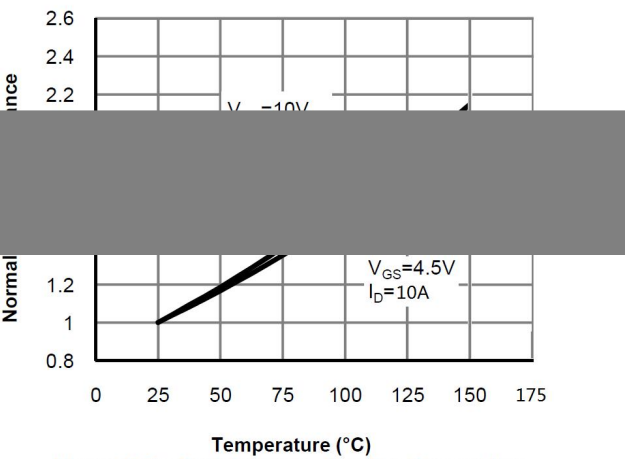
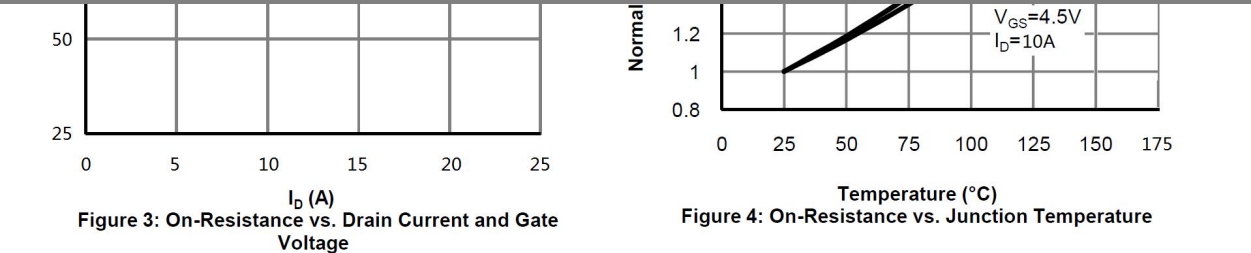
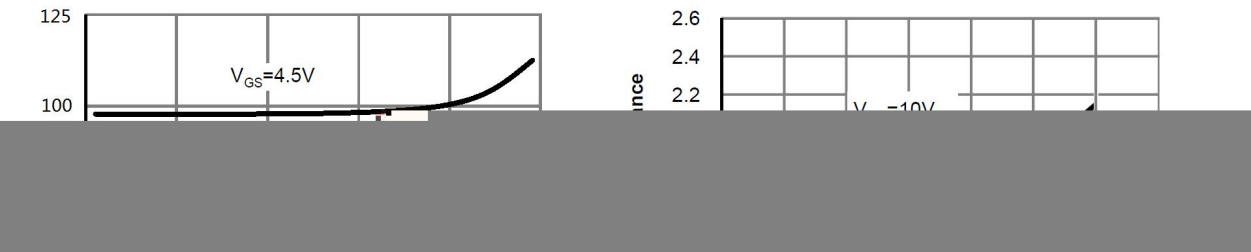
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	100	106	2	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V$ $V_{GS}=0V$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	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	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=50V$ $R_L=10\Omega$ $R_{GEN}=3\Omega$		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



/ Electrical Characteristic Curve

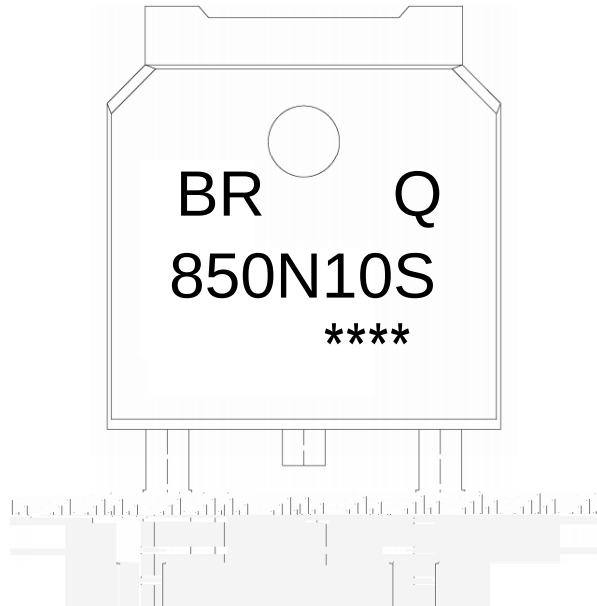


BRCS850N10SDPQ

Rev.A Aug.-2022

DATA SHEET

/ Marking Instructions



BR

Q

850N10S

Note:

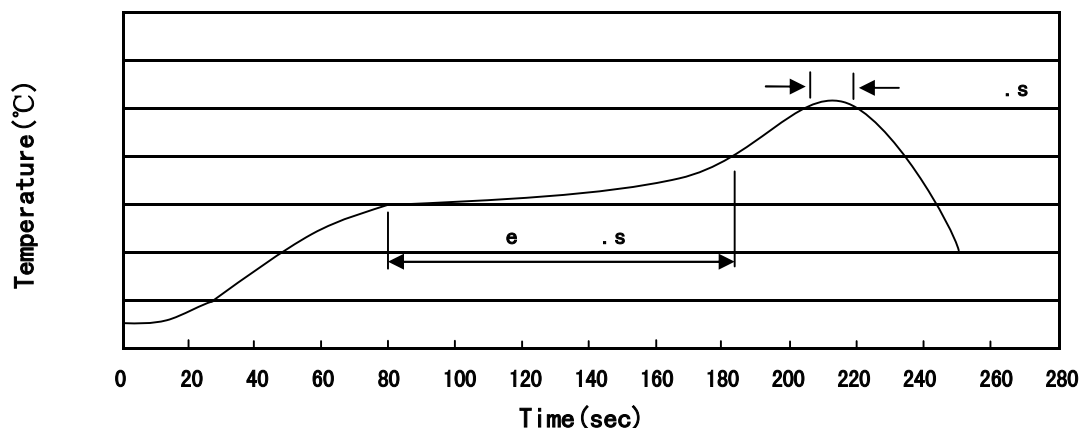
BR: Company Code

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)



说明：

- 1、预热温度 150~200℃，时间 60~120sec;
- 2、峰值温度 255±5℃，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2~10℃/sec.

Note:

- 1.Preheating:150~200℃, Time:60~120sec.
- 2.Peak Temp.:255±5℃, Duration:5±0.5sec.
3. Cooling Speed: 2~10℃/sec.

/ Resistance to Soldering Heat Test Conditions

温度：260±5℃

时间：10±1 sec.

Temp.:260±5℃

Time:10±1 sec

/ Packaging SPEC.

卷盘包装 / 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

套管包装 / 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