

描述 / Descriptions

TO-252 塑封封装 N 沟道场效应管。

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

特征 / Features

$V_{DS}=100V$ $I_D=68A$

$R_{DS(ON)}@10V \leq 8mR$ (Typ. 6.2mR)

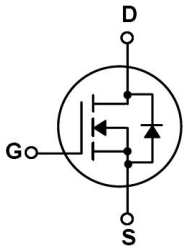
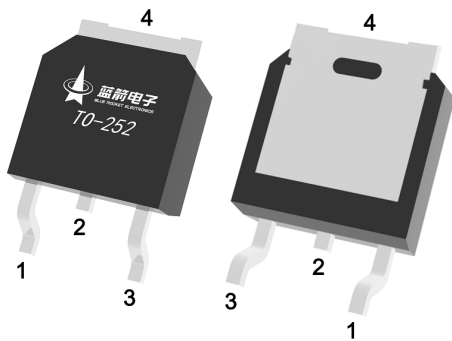
$R_{DS(ON)}@4.5V \leq 12mR$ (Typ. 8.2mR)

无卤产品。HF Product.

用途 / Applications

高频开关和同步整流。

High Frequency Switching and Synchronous Rectification.

内部等效电路 / Equivalent Circuit**引脚排列 / Pinning**

PIN1 : G

PIN 2 : D

PIN 3 : S

PIN 4 : D

印章代码 / Marking

见印章说明。

See Marking Instructions.

极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter		符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage		V _{DS}	100	V
Drain Current - Continuous		I _D	68	A
Drain Current – Pulsed		I _{DM}	156	A
Gate-Source Voltage		V _{GS}	±20	V
Power Dissipation		P _D (T _c =25℃)	75	W
Single Pulse Avalanche Energy(L=0.5mH)		E _{AS}	264.5	mJ
Avalanche Current(L=0.5mH)		I _{AS}	23	A
Junction and Storage Temperature Range		T _j , T _{stg}	-55 to 150	℃
Thermal resistance, junction - ambient	t ≤ 10s	R _{θJA}	20	℃/ W
	Steady-State		50	
Thermal resistance, junction - case	Steady-State	R _{θJC}	1.7	

电性能参数 / Electrical Characteristics(Ta=25°C)

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	109		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V$ $V_{GS}=0V$			1.0	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1	1.8	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20A$		6.2	8	m Ω
	$R_{DS(on)}$	$V_{GS}=4.5V$ $I_D=10A$		8.2	12	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1A$			1.2	V
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$, $f=1\text{MHz}$		1.3		Ω
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0\text{MHz}$		2410		pF
Output Capacitance	C_{oss}			900		
Reverse Transfer Capacitance	C_{rss}			100		
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$, $V_{DS}=50V$, $I_D=20A$		37		nC
Total Gate Charge	$Q_{g(4.5V)}$			17.2		
Gate Source Charge	Q_{gs}			8.5		
Gate Drain Charge	Q_{gd}			5.3		

电性能参数 / Electrical Characteristics(Ta=25°C)

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
Turn-On Delay Time	t _{d(on)}	V _{GS} =10V V _{DS} =50V R _L =2.5Ω R _{GEN} =3Ω		11		ns
Turn-On Rise Time	t _r			4		
Turn-Off Delay Time	t _{d(off)}			32		
Turn-Off Fall Time	t _f			6.3		

电参数曲线图 / Electrical Characteristic Curve

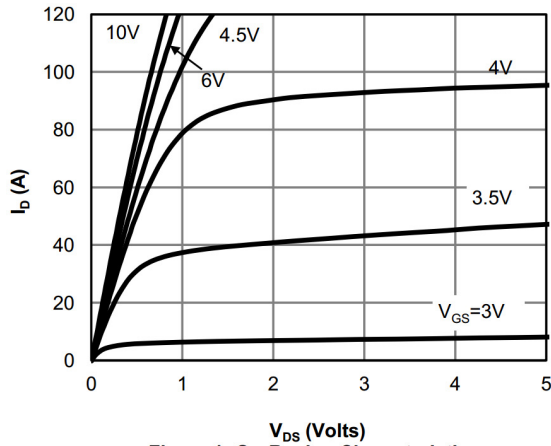


Figure 1: On-Region Characteristics

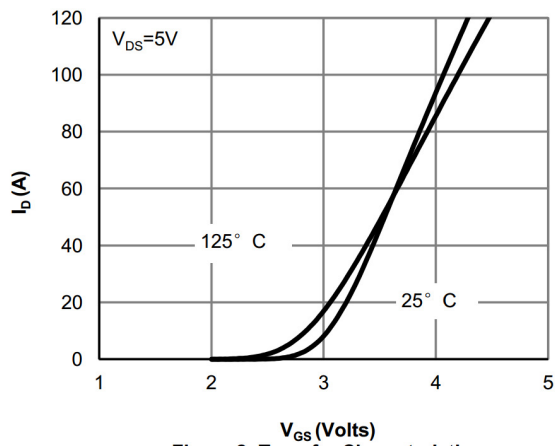


Figure 2: Transfer Characteristics

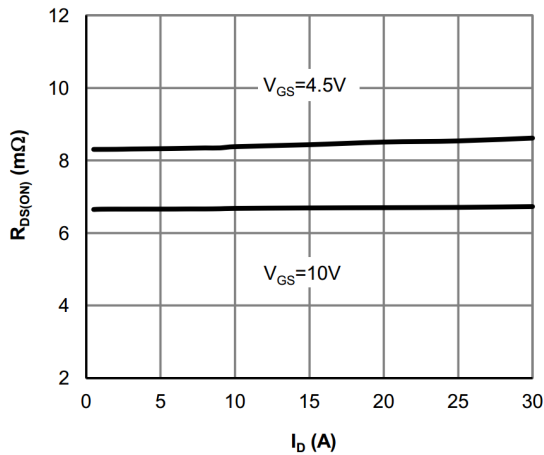


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

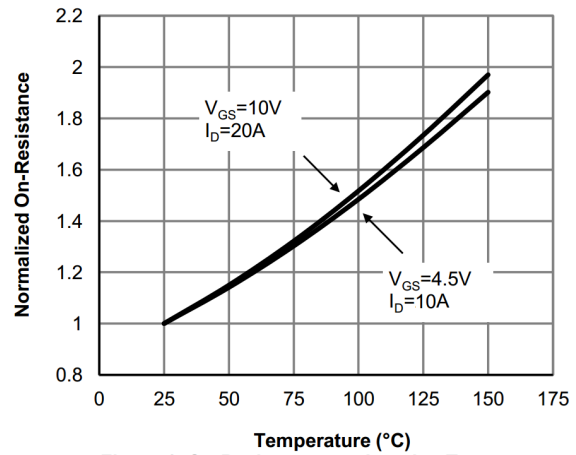


Figure 4: On-Resistance vs. Junction Temperature

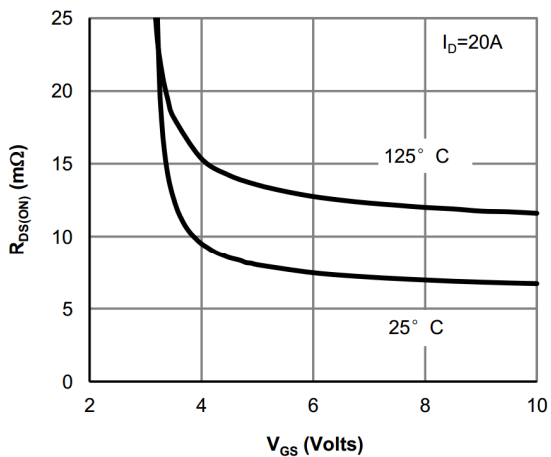


Figure 5: On-Resistance vs. Gate-Source Voltage

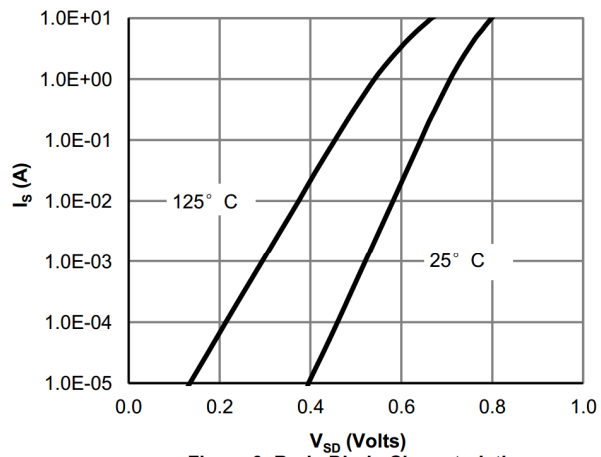
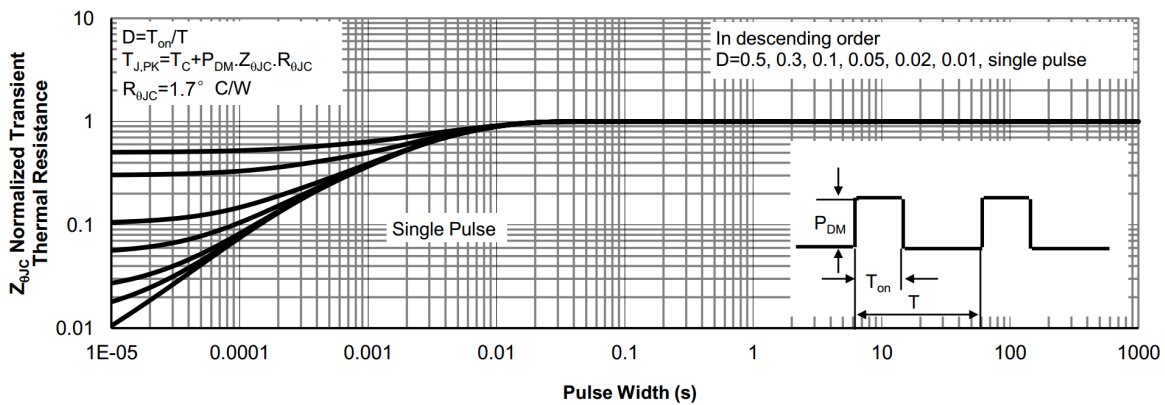
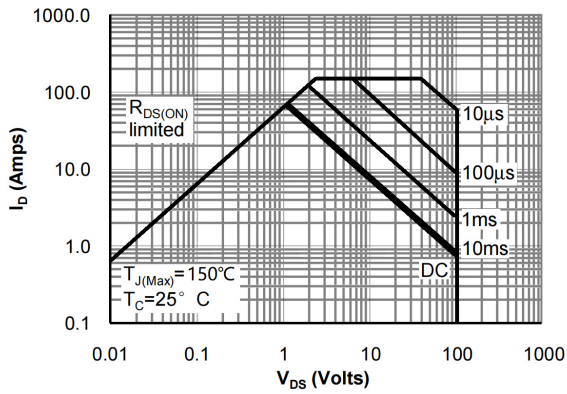
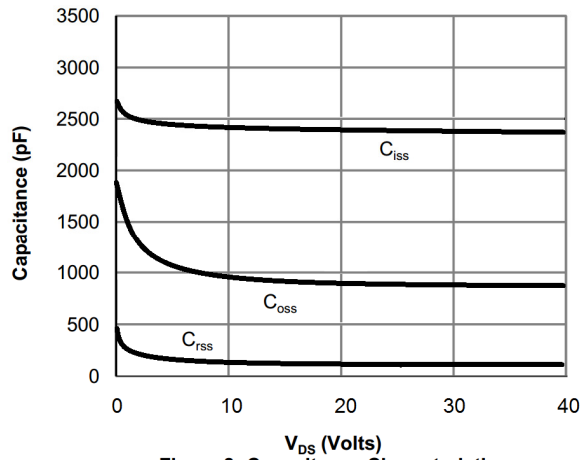
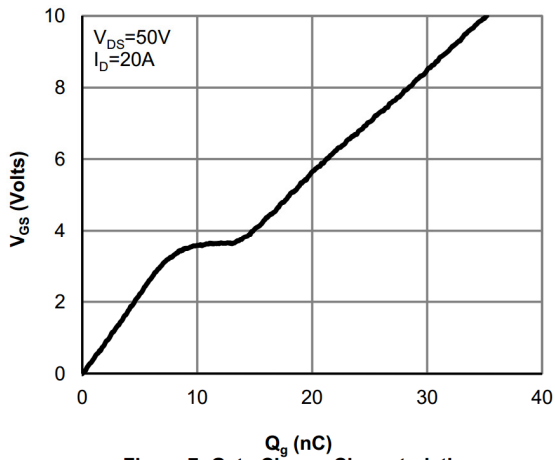
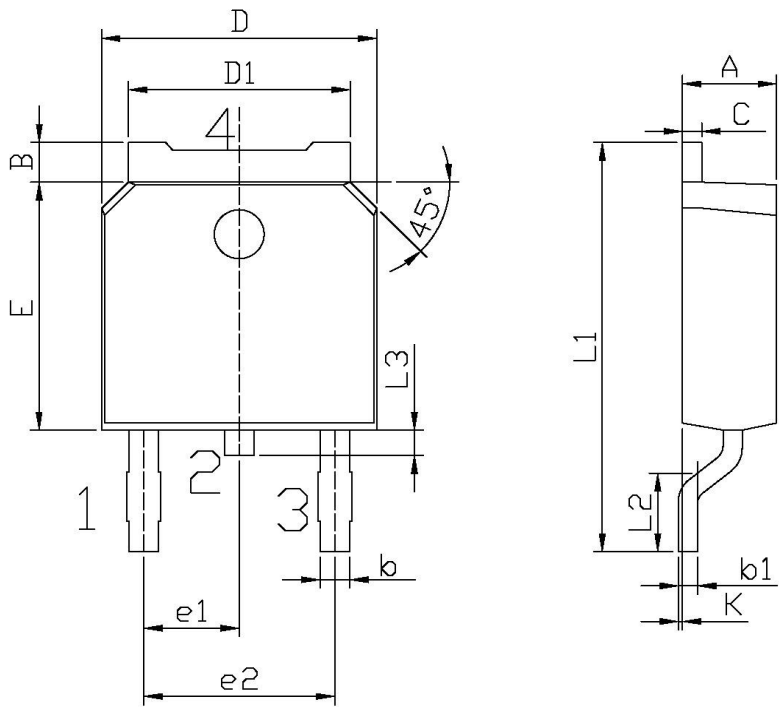


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve



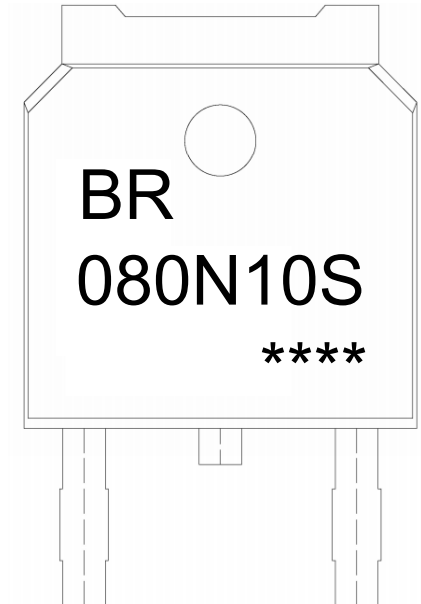
外形尺寸图 / Package Dimensions



单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	2.20	2.40	E	5.95	6.25
B	0.95	1.25	e1	2.24	2.34
b	0.70	0.90	e2	4.43	4.73
b1	0.45	0.55	L1	9.85	10.35
C	0.45	0.55	L2	1.70	2.00
D	6.45	6.75	L3	0.60	0.90
D1	5.10	5.50	K	0.00	0.10

T0-252

**印章说明 / Marking Instructions**

说明：

BR： 为公司代码

080N10S： 为型号代码

****： 为生产批号代码，随生产批号变化

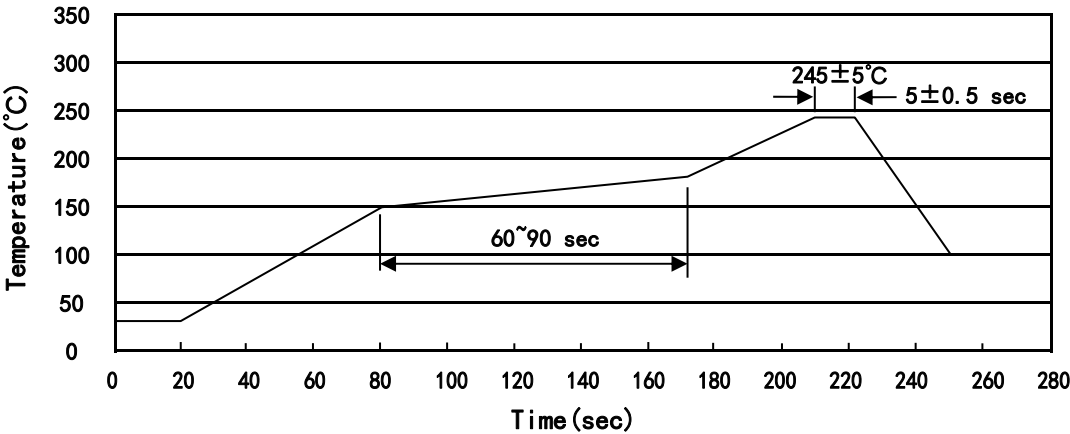
Note:

BR: Company Code

080N10S: Product Type Code

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

回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)



说明：

- 1、预热温度 150~180°C，时间 60~90sec；
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec；
- 3、焊接制程冷却速度为 2~10°C/sec.

Note:

- 1.Preheating:150~180°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5°C 时间：10±1 sec. Temp.:260±5°C Time:10±1 sec

包装规格 / 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

使用说明 / Notices