描述 / Descriptions

TO-252 塑封封装 P 沟道 MOS 场效应管。
P-CHANNEL MOSFET in a TO-252 Plastic Package.

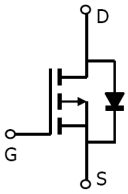
特征 / Features

V_{DS}(V)=-100V ID=-18A
$R_{DS(ON)}$@-10V<90mΩ(Typ.80mR)
$R_{DS(ON)}$@-4.5V<100mΩ(Typ.90mR)
无卤产品。 HF Product.

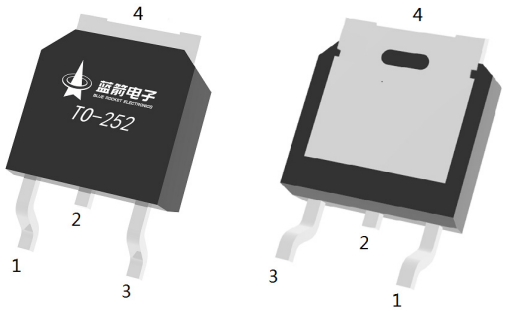
用途 / Applications

工业级DC/DC转换器的电源管理
Power Management of Industrial DC/DC Converter.

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(T_a=25℃)

参数 Parameter		符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage		V_{DS}	-100	V
Drain Current - Continuous		I_D(T_c=25℃)	-18	A
Drain Current – Pulsed		I_{DM}	-54	A
Gate-Source Voltage		V_{GS}	±20	V
Power Dissipation		P_D(T_c=25℃)	65	W
Single Pulse Avalanche Energy(L=0.5mH)		E_{AS}	185	mJ
Avalanche Current(L=0.5mH)		I_{AS}	-21.5	A
Junction and Storage Temperature Range		T_j, T_{stg}	-55 to 150	℃
Thermal resistance, junction - ambient	Steady-State	$R_{\theta JA}$	63	℃/ W
Thermal resistance, junction - case	Steady-State	$R_{\theta JC}$	1.92	

电性能参数 / 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
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250μA V_{GS}=0V	-100	-110		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-100V V_{GS}=0V			-1	uA
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}= ±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=VGS I_D=-250μA	-1	-1.7	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-10A		80	90	mΩ
		V_{GS}=-4.5V, I_D=-10A		90	100	
Diode Forward Voltage	V_{SD}	I_S=-1A, V_{GS}=0V			-1.2	V
Input Capacitance	C_{iss}	V_{DS}=-15V V_{GS}=0V f=1.0MHz		5200		pF
Output Capacitance	C_{oss}			750		
Reverse Transfer Capacitance	C_{rss}			450		
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		4.2		Ω
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=-10V, V_{DS}=-50V, I_D=-5A		5.9		nC
Total Gate Charge	$Q_{g(4.5V)}$			2.7		
Gate Source Charge	Q_{gs}			1.2		
Gate Drain Charge	Q_{gd}			1.2		

电性能参数 / 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
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=-10V V_{DS}=-50V R_L=10Ω R_{GEN}=3Ω		6		ns
Turn-On Rise Time	t_r			2.4		
Turn-Off Delay Time	$t_{d(off)}$			19		
Turn-Off Fall Time	t_f			2.6		

电参数曲线图 / Electrical Characteristic Curve

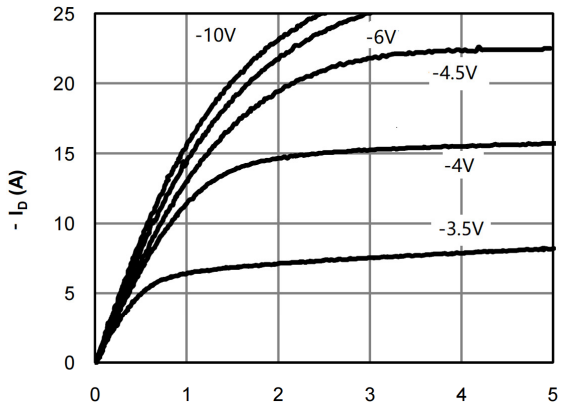


Fig 1: On-Region Characteristics

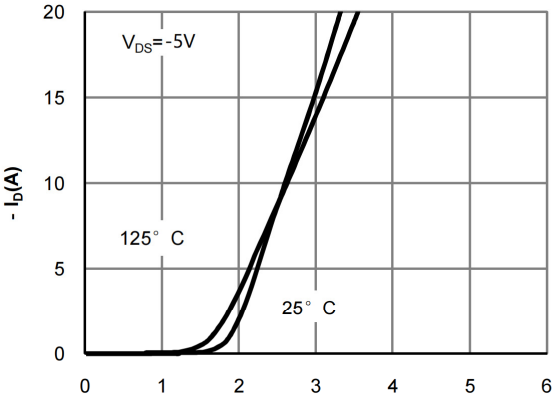


Figure 2: Transfer Characteristics

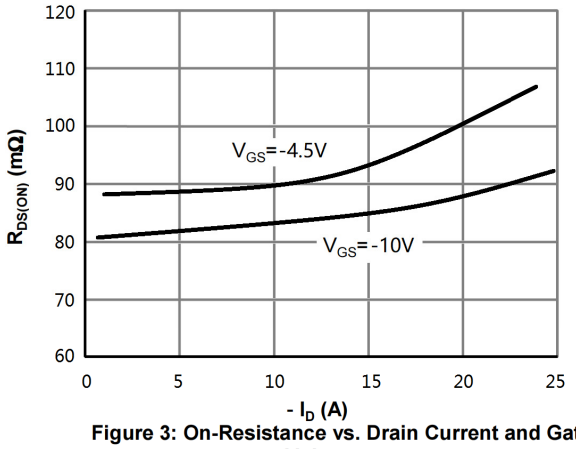


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

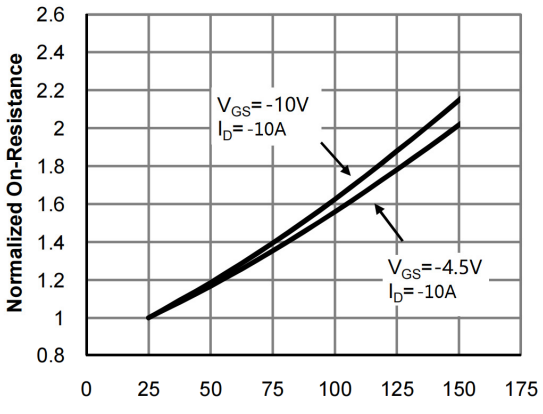


Figure 4: On-Resistance vs. Junction Temperature

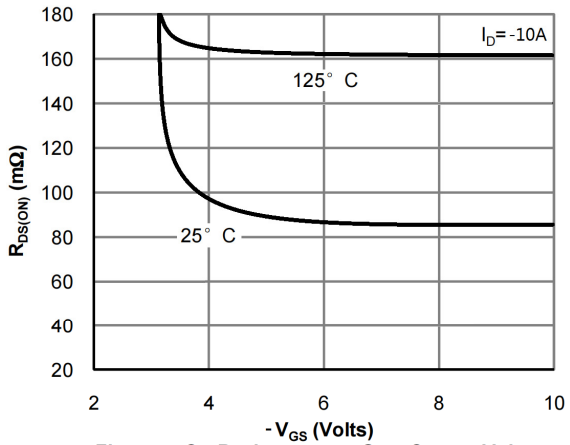


Figure 5: On-Resistance vs. Gate-Source Voltage

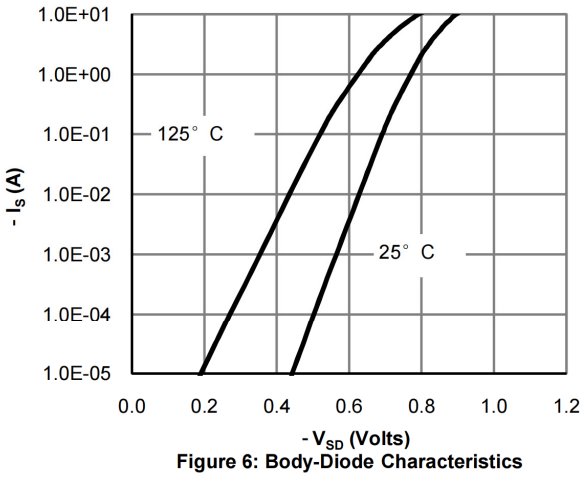


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

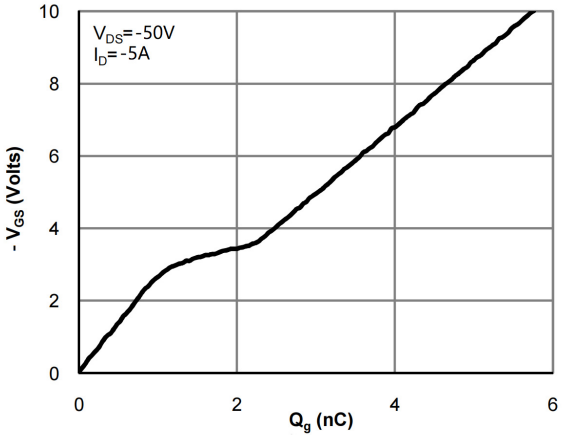


Figure 7: Gate-Charge Characteristics

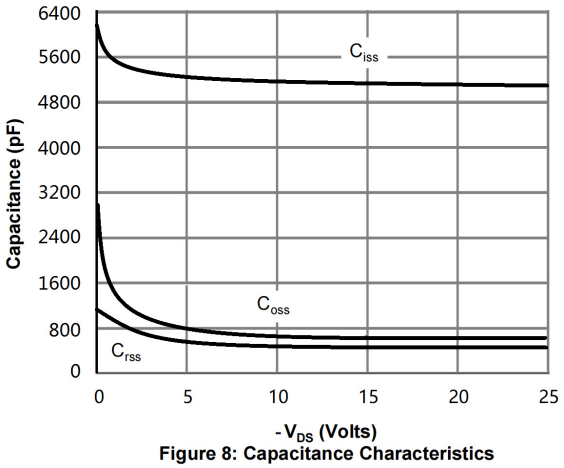


Figure 8: Capacitance Characteristics

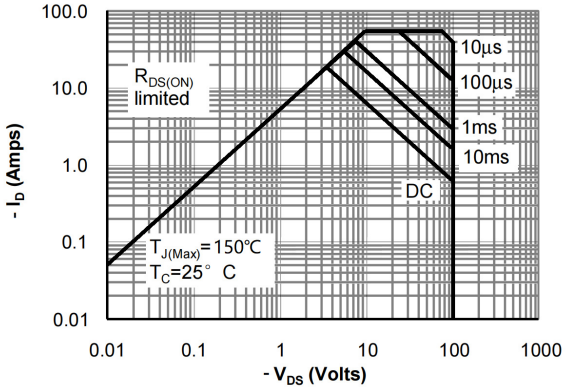


Figure 9: Maximum Forward Biased Safe Operating Area

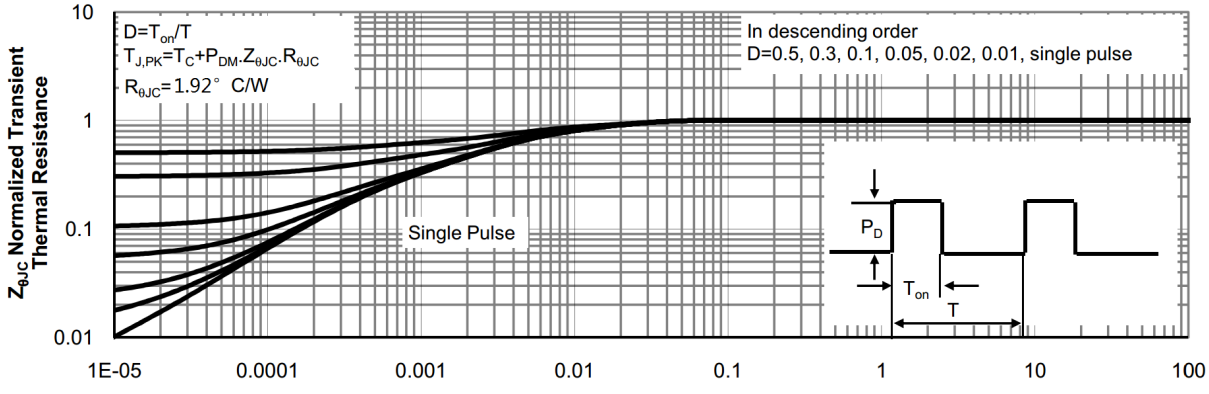
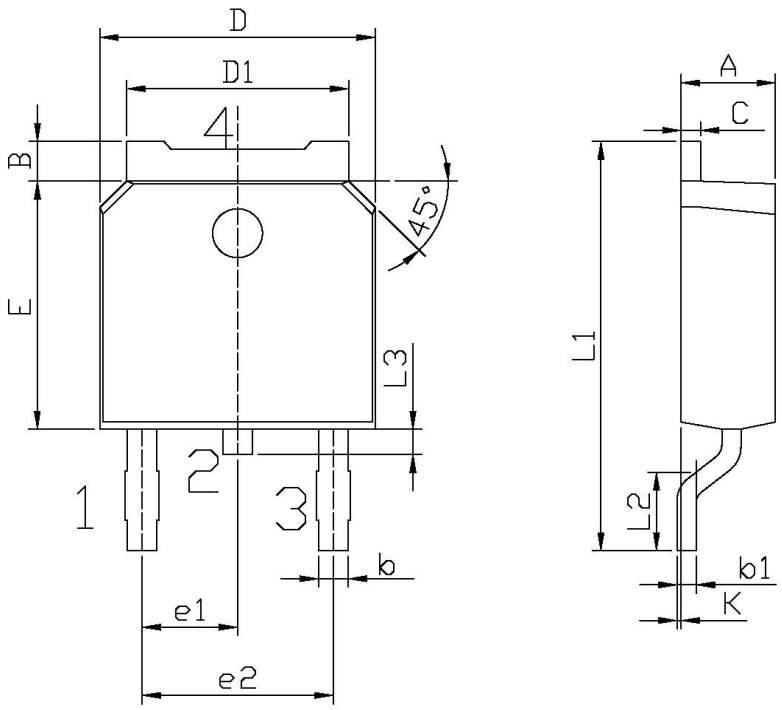


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions

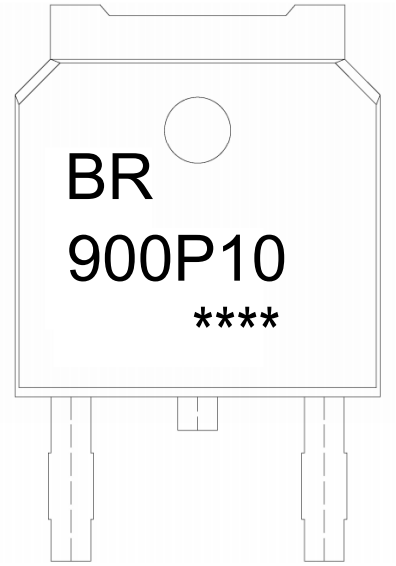


单位：mm

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

TO-252

印章说明 / Marking Instructions



说明：

BR： 为公司代码

900P10： 为产品型号

****： 为生产批号代码，随生产批号变化

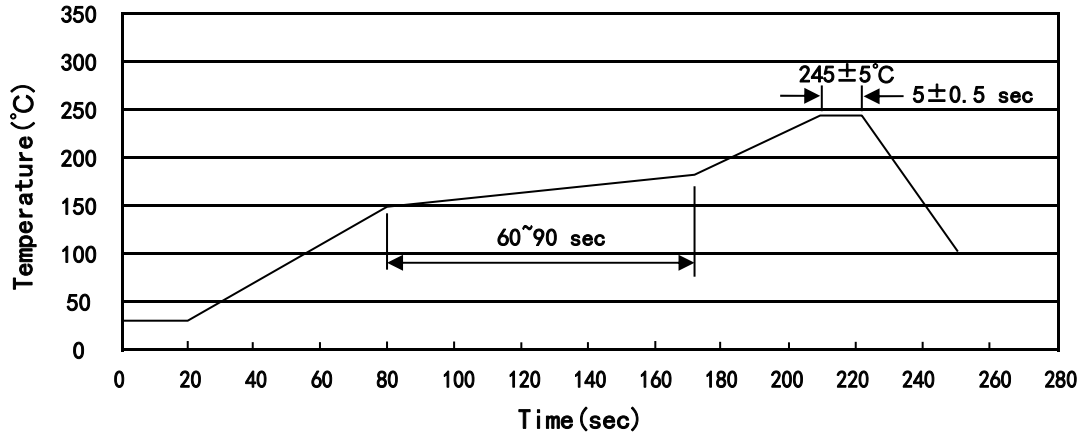
Note:

BR: Company Code

900P10: Product Type

****: 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℃，时间 60～90sec;

2、峰值温度 245±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:150~180℃, Time:60~90sec.

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

3. Cooling Speed: 2~10℃/sec.

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

温度：260±5℃ 时间：10±1 sec. Temp.:260±5℃ 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：mm³)		
	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：mm³)		
	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

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