

描述 / Descriptions

SOP-8 塑封封装 P 沟道场效应管。

P-Channel Enhancement Mode Field Effect Transistor in a SOP-8 Plastic Package.

特征 / Features

$V_{DS} (V) = -40V$

$I_D = -10 A (V_{GS} = \pm 20V)$

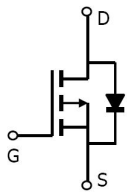
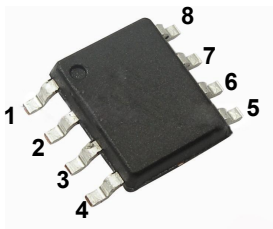
$R_{DS(ON)} < 15m\Omega (V_{GS} = -10V)$

无卤产品。HF Product.

用途 / Applications

用于电源管理，便携式设备和电池供电系统。

Power Management in Notebook computer, Portable Equipment and Battery powered systems.

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

PIN 1 : S	PIN 2 : S	PIN 3 : S	PIN 4 : G
PIN 5 : D	PIN 6 : D	PIN 7 : D	PIN 8 : 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_{DSS}	-40	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	$I_D (T_a=25^\circ\text{C})$	-10	A
Continuous Drain Current	$I_D (T_a=70^\circ\text{C})$	-8	A
Power Dissipation for Single Operation	$P_D (T_a=25^\circ\text{C})$	1.7	W
Power Dissipation for Single Operation	$P_D (T_a=70^\circ\text{C})$	1.1	W
Maximum Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ 150	$^\circ\text{C}$
Thermal Resistance-Junction to Ambient	$R_{\theta JA} (t \leq 10s)$	40	$^\circ\text{C/W}$
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	75	$^\circ\text{C/W}$
Maximum Junction-to-Lead	$R_{\theta JL}$	24	$^\circ\text{C/W}$

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}	$I_D = -250\mu A$ $V_{GS} = 0V$	-40			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -40V$ $V_{GS} = 0V$			-1.0	μA
		$V_{DS} = -40V$ $V_{GS} = 0V$ $T_J = 55^\circ C$			-5.0	
Gate-Body leakage current	I_{GSS}	$V_{DS} = 0V$ $V_{GS} = \pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$ $I_D = -250\mu A$	-1.2	-1.6	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = -10V$ $I_D = -10A$		13.1	15	m Ω
		$V_{GS} = -4.5V$ $I_D = -7A$		18	21	
Forward Transconductance	g_{FS}	$V_{DS} = -5V$ $I_D = -10A$		9.5		S
Diode Forward Voltage	V_{SD}	$I_S = -1A$ $V_{GS} = 0V$		-0.8	-1.0	V
Total Gate Charge	$Q_g(10V)$	$V_{GS} = -10V$ $V_{DS} = -20V$ $I_D = -10A$		42	55	nC
Total Gate Charge	$Q_g(4.5V)$			18.6		
Gate-Source Charge	Q_{gs}			7		
Gate-Drain Charge	Q_{gd}			8.6		
Gate Resistance	R_g	$V_{GS} = 0V$ $f = 1MHz$ $V_{DS} = 0V$		8.5		Ω
Input Capacitance	C_{iss}	$V_{GS} = 0V$ $f = 1MHz$ $V_{DS} = -25V$		3300		pF
Output Capacitance	C_{oss}			135		
Reverse Transfer Capacitance	C_{rss}			177		
Turn-on Delay Time	$t_{d(on)}$	$V_{GS} = -10V$ $V_{DS} = -20V$ $R_L = 2\Omega$ $R_{GEN} = 3\Omega$		9.4		ns
Turn-on Rise Time	t_r			20		
Turn-off Delay Time	$t_{d(off)}$			55		
Turn-off Fall Time	t_f			30		

电参数曲线图 / Electrical Characteristic Curve

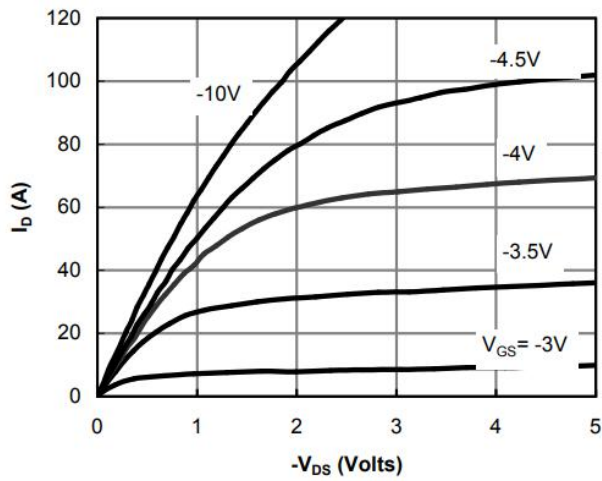


Figure 1: On-Region Characteristics

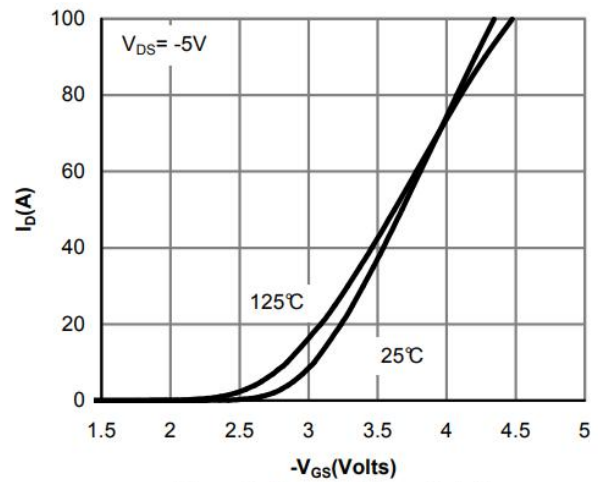


Figure 2: Transfer Characteristics

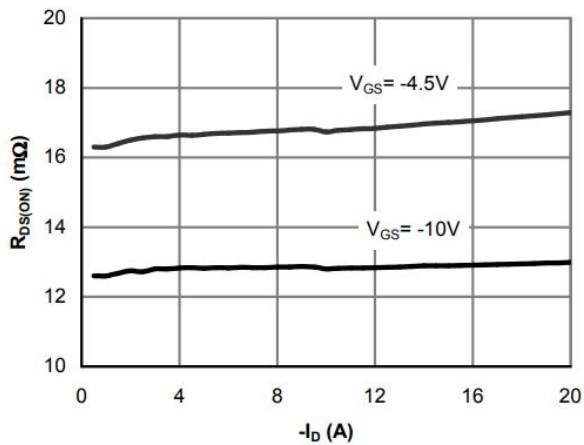


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

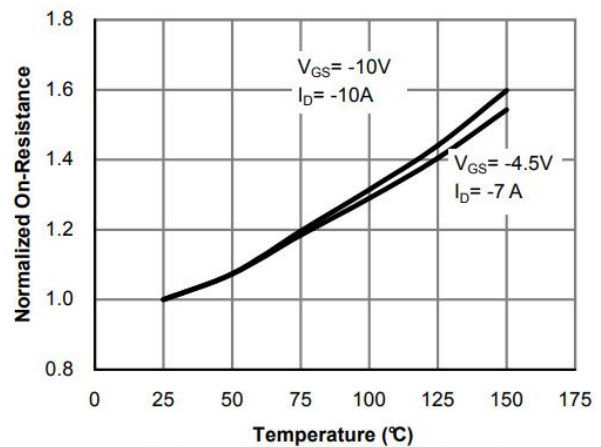


Figure 4: On-Resistance vs. Junction Temperature

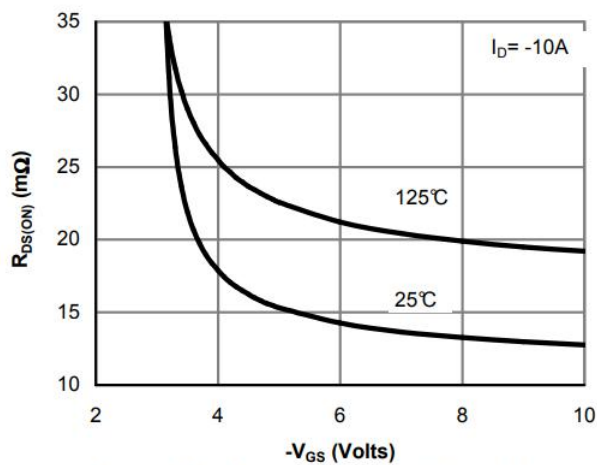


Figure 5: On-Resistance vs. Gate-Source Voltage

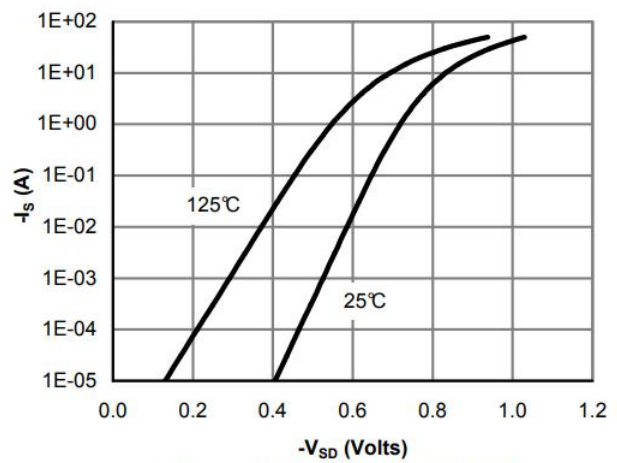
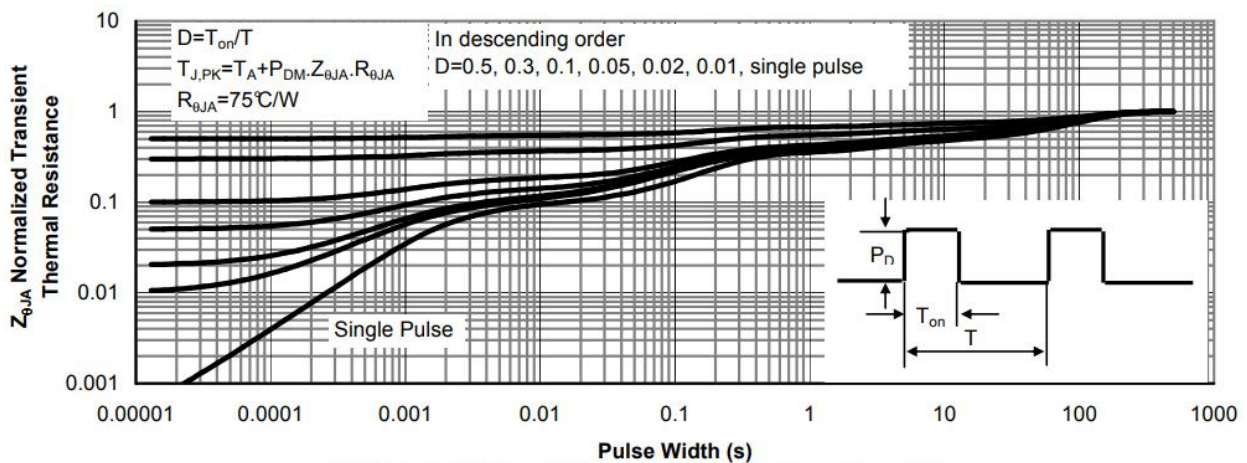
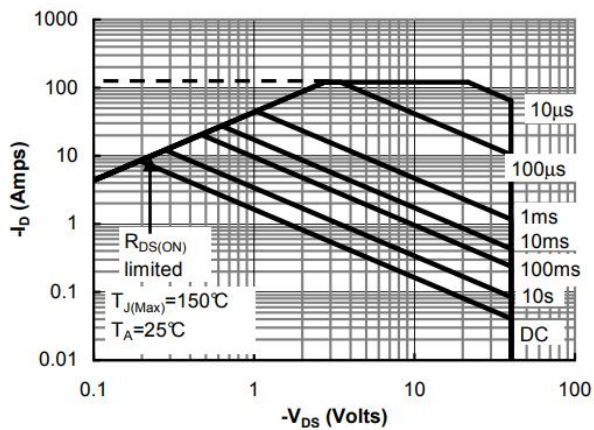
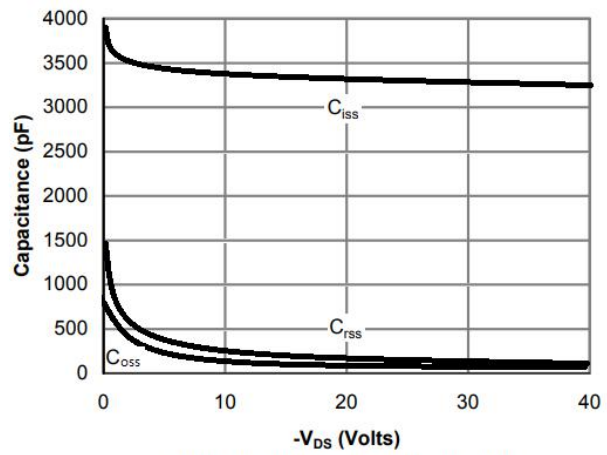
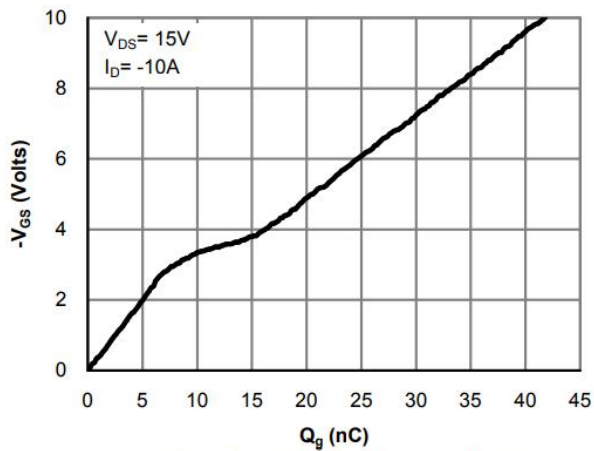


Figure 6: Body-Diode Characteristics

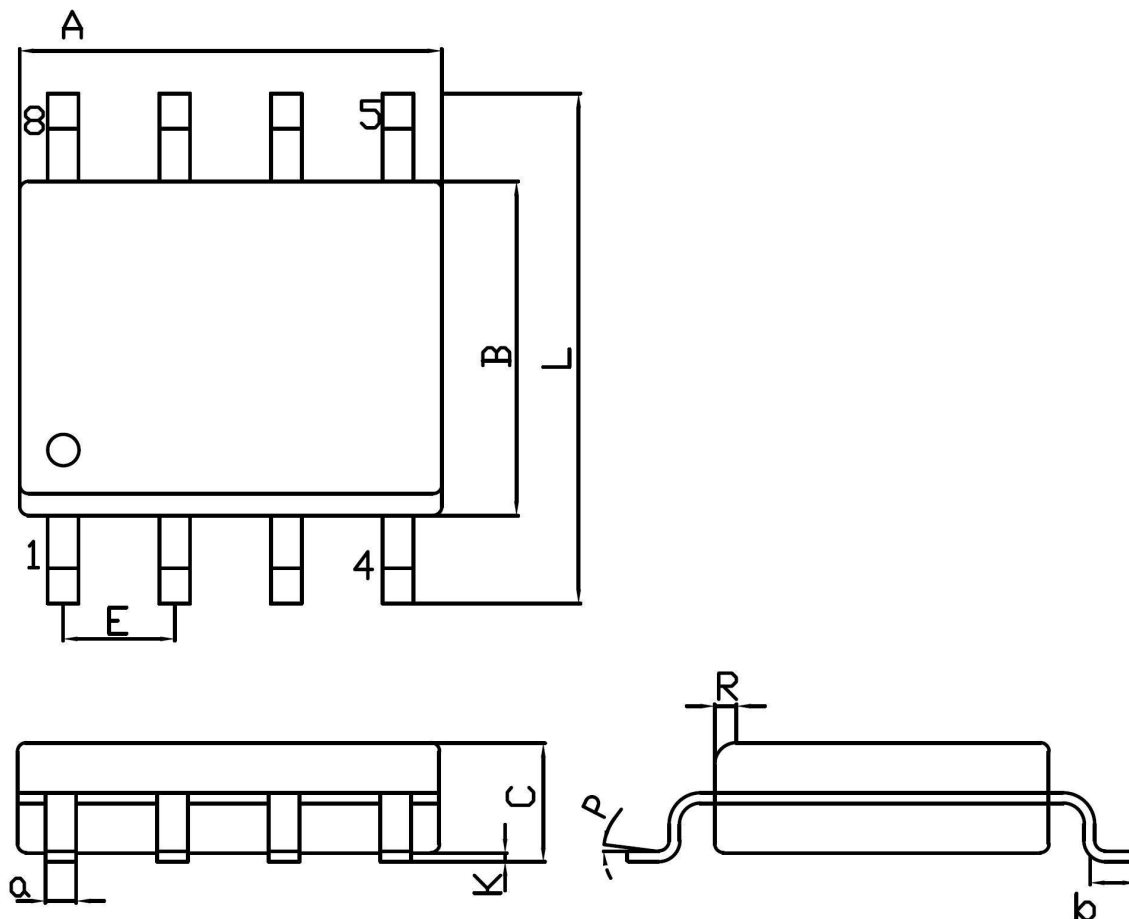
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

SOP-8

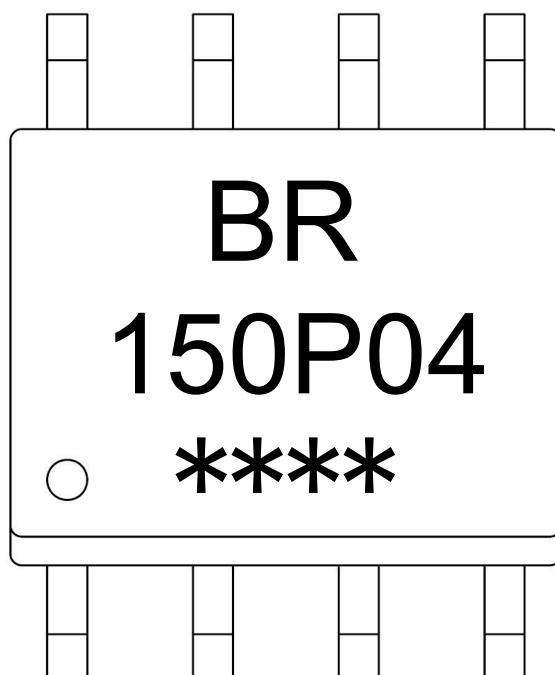
Unit:mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.70	5.10	C	1.35	1.75
B	3.70	4.10	a	0.35	0.49
L	5.80	6.20	R	0.30	0.60
E	1.27BSC		P	0°	7°
K	0.12	0.22	b	0.40	1.25



印章说明 / Marking Instructions



说明：

BR： 为公司代码

150P04： 为型号代码

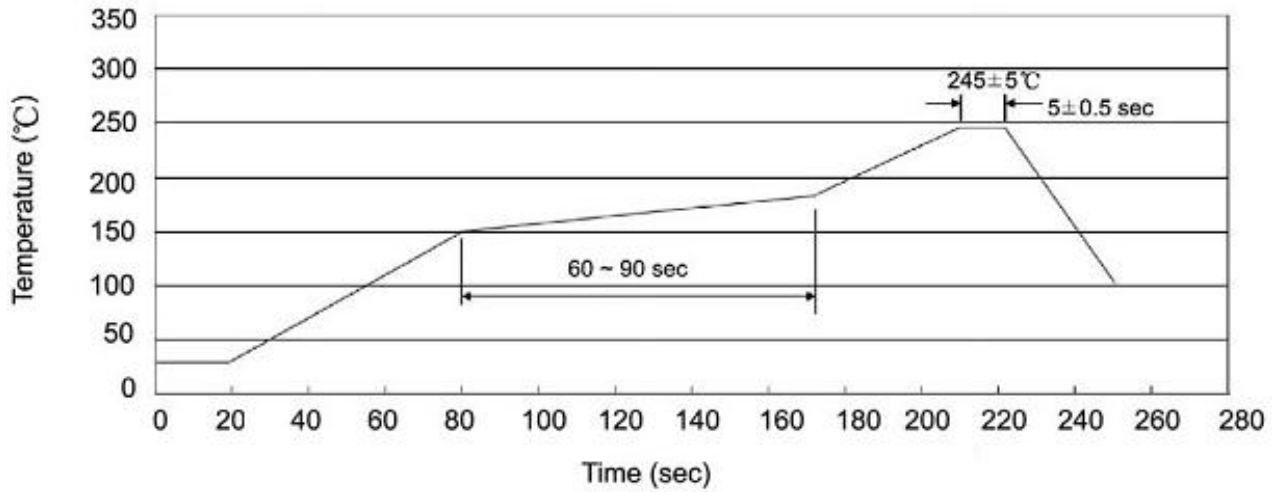
****： 为生产批号代码，随生产批号变化。

Note:

BR: Company Code.

150P04: 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°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
SOP/ESOP-8	4,000	2	8,000	6	48,000	13" ×12	360×360×50	380×335×366

使用说明 / Notices