描述 / Descriptions

SOP-8 塑封封装 P 沟道 MOS 场效应管。
P-Channel Enhancement Mode Field Effect Transistor in a SOP-8 Plastic Package.

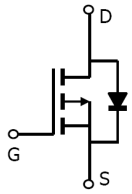
特征 / Features

V_{DS} (V) = -30V
I_D = -8.8 A
$R_{DS(ON)}$ < 23mΩ (V_{GS} = -10V)
$R_{DS(ON)}$ < 35mΩ (V_{GS} = -4.5V)

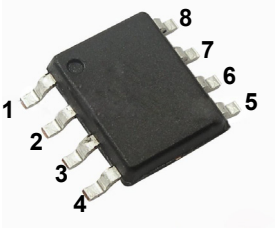
用途 / Applications

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



PIN1：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℃)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DSS}	-30	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current[A]	I_D (T_a=25°C)	-8.8	A
Continuous Drain Current[A]	I_D (T_a=70°C)	-7.0	A
Pulsed Drain Current[B]	I_{DM}	-50	A
Power Dissipation for Single Operation[A]	P_D (T_a=25℃)	2.5	W
Power Dissipation for Single Operation[A]	P_D (T_a=70℃)	1.2	W
Avalanche Current	I_{AR}	-20	A
Repetitive avalanche energy 0.3mH[B]	E_{AR}	50	mJ
Maximum Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～+150	℃
Thermal Resistance-Junction to Ambient[A]	$R_{\theta JA}$	50	℃/W
Thermal Resistance-Junction to Ambient[A]	$R_{\theta JA}$	125	℃/W
Maximum Junction-to-Lead[C]	$R_{\theta JL}$	25	℃/W

Note:

A: The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A = 25°C.The value in any given application depends on the user's specific board design. The current rating is based on the t ≤ 10s thermal resistance rating.

B: Repetitive rating, pulse width limited by junction temperature.

C. The $R_{\theta JA}$ is the sum of the thermal impedance from junction to lead $R_{\theta JL}$ and lead to ambient.

D. The static characteristics in Figures 1 to 6 are obtained using <300μs pulses, duty cycle 0.5% max.

E. These tests are performed with the device mounted on 1 in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A=25°C. The SOA curve provides a single pulse rating.

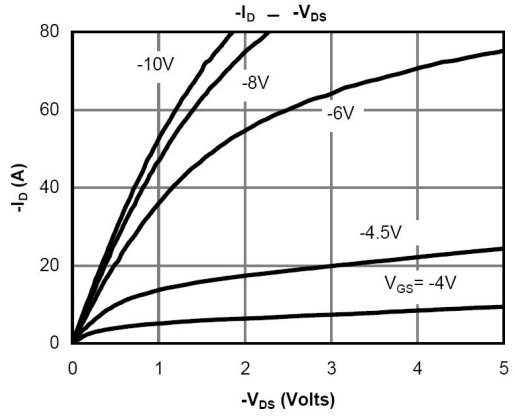
F. The current rating is based on the t ≤ 10s thermal resistance rating.

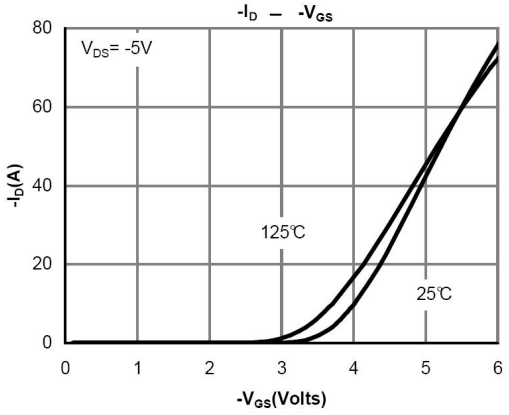
G. E_{AR} and I_{AR} ratings are based on low frequency and duty cycles to keep T_j=25C.

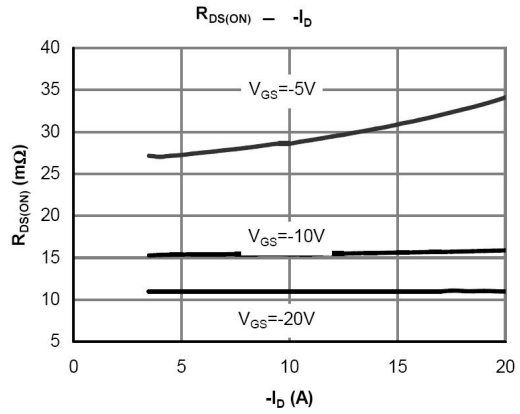
电性能参数 / Electrical Characteristics(Ta=25℃)

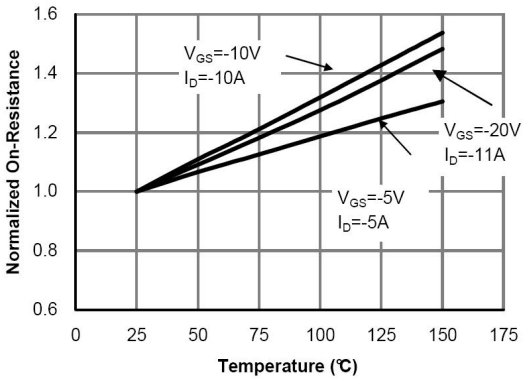
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250μA V_{GS}=0V	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V V_{GS}=0V			-1.0	μA
		V_{DS}=-30V V_{GS}=0V T_J=55°C			-5.0	
Gate-Body leakage current	I_{GSS}	V_{DS}=0V V_{GS}=±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=VGS I_D=-250μA	-1.0	-1.7	-3.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V I_D=-8.8A		18	23	mΩ
		V_{GS}=-10V I_D=-8.8A T_J=125°C		25	32	
		V_{GS}=-4.5V I_D=-6.7A		27	35	
Forward Transconductance	g_{FS}	V_{DS}=-5V I_D=-8.8A		12		S
Diode Forward Voltage	V_{SD}	I_S=-2.1A V_{GS}=0V		-0.73	-1.2	V
Maximum Body-Diode Continuous Current	I_S				-2.1	A
Total Gate Charge	Q_g	V_{GS}=-5V V_{DS}=-15V I_D=-8.8A		17	24	nC
Gate-Source Charge	Q_{gs}			5		
Gate-Drain Charge	Q_{gd}			6		
Input Capacitance	C_{iss}	V_{GS}=0V V_{DS}=-15V f=1MHz		1604		pF
Output Capacitance	C_{oss}			408		
Reverse Transfer Capacitance	C_{rss}			202		
Turn-on Delay Time	$t_{d(ON)}$	V_{GS}=-10V V_{DS}=-15V I_D=-1A R_{GEN}=6Ω		13	23	ns
Turn-on Rise Time	t_r			13.5	24	
Turn-off Delay Time	$t_{d(OFF)}$			42	68	
Turn-off Fall Time	t_f			25	40	

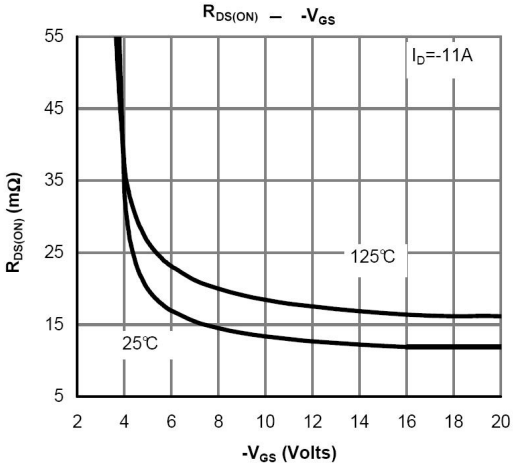
电参数曲线图 / Electrical Characteristic Curve

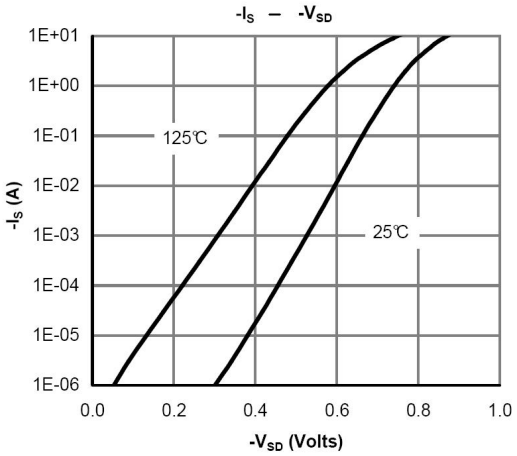




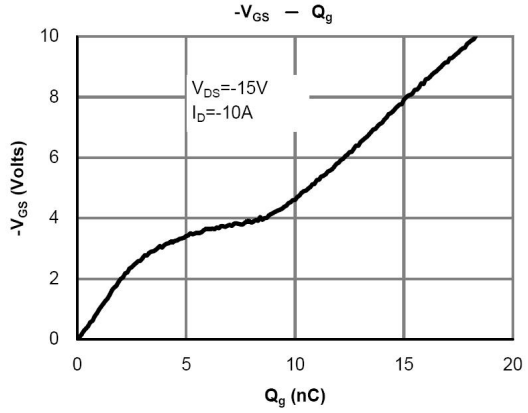


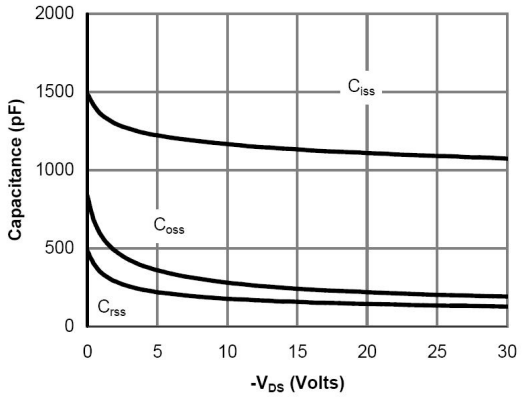


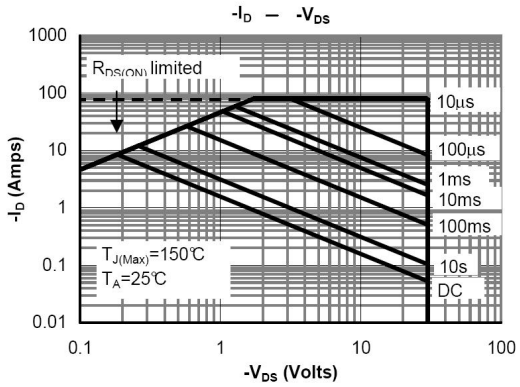


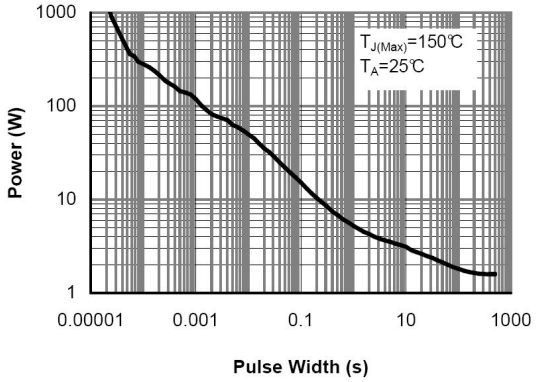


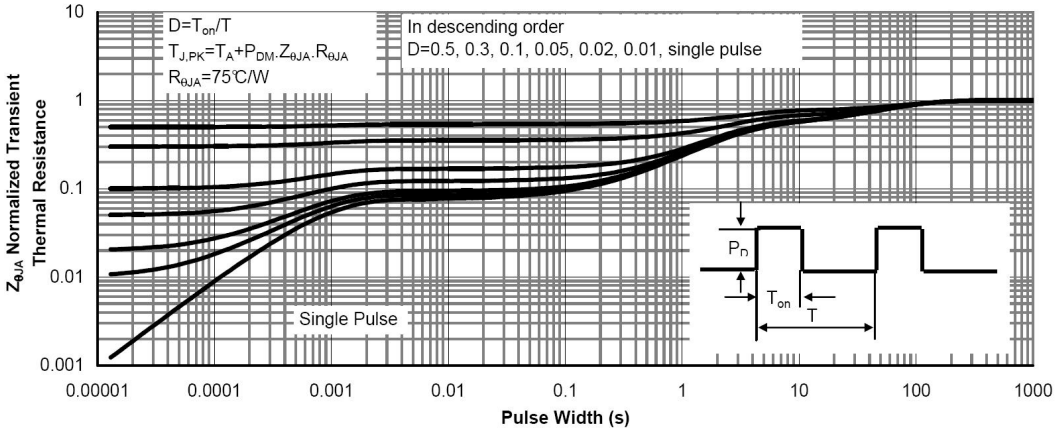
电参数曲线图 / Electrical Characteristic Curve





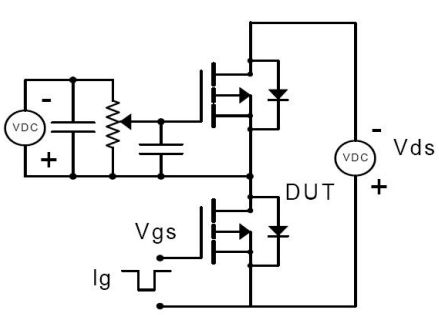


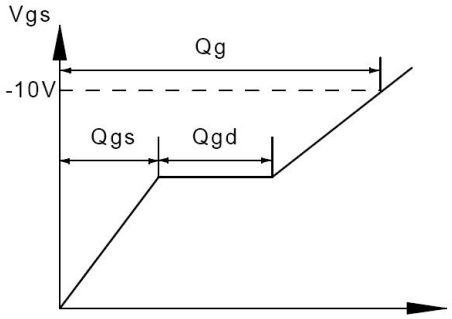




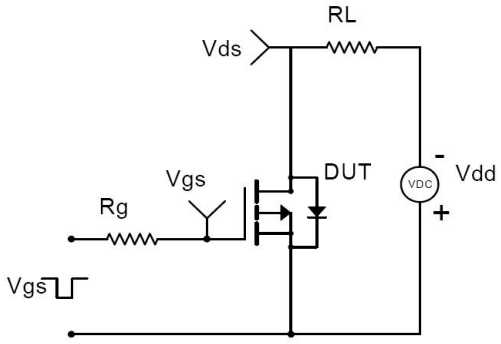
测试波形图 / Test Waveform

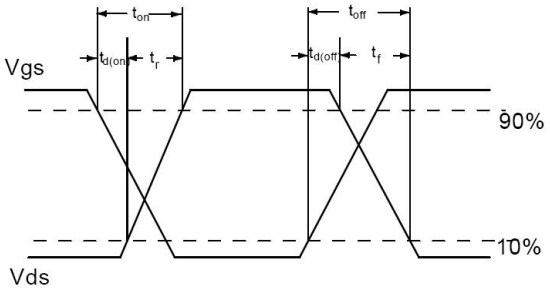
Gate Charge Test Circuit & Waveform



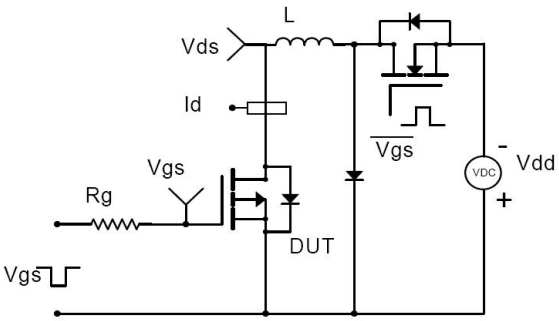


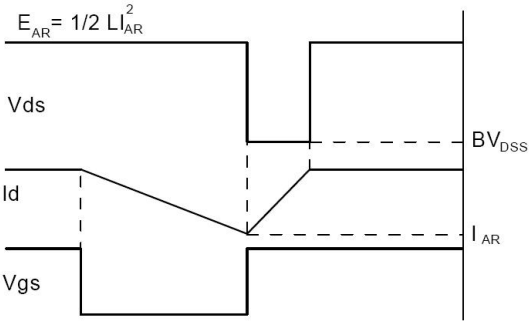
Resistive Switching Test Circuit & Waveforms



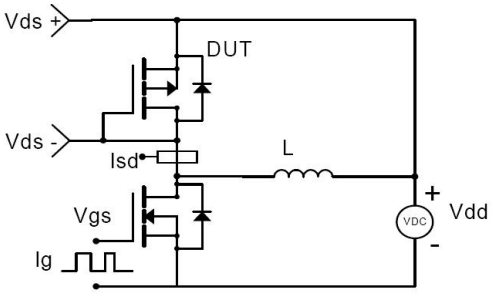


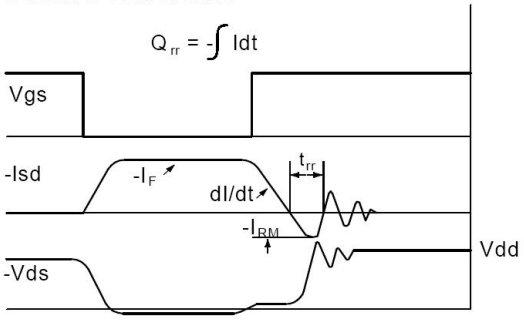
Unclamped Inductive Switching (UIS) Test Circuit & Waveforms





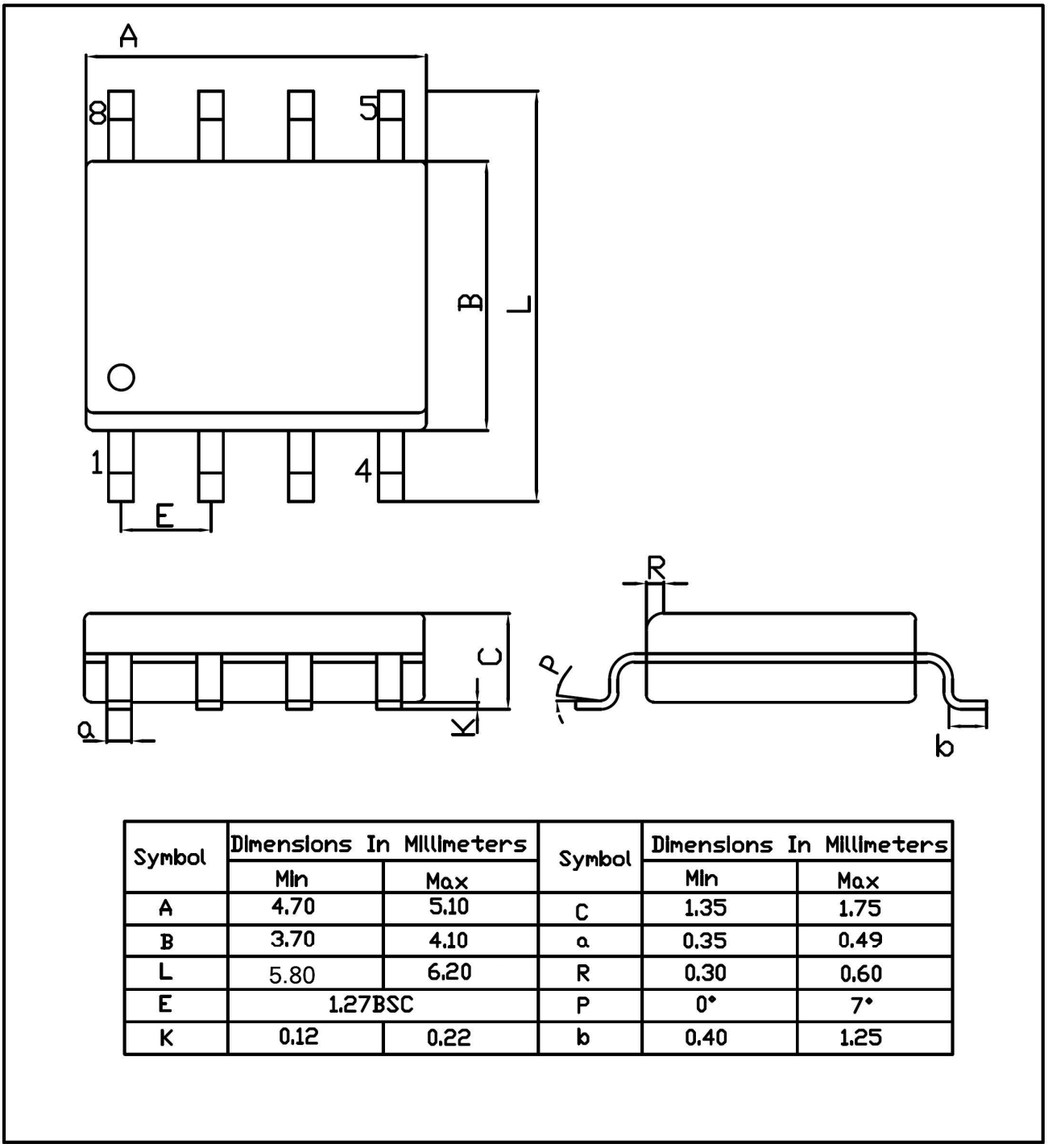
Diode Recovery Test Circuit & Waveforms





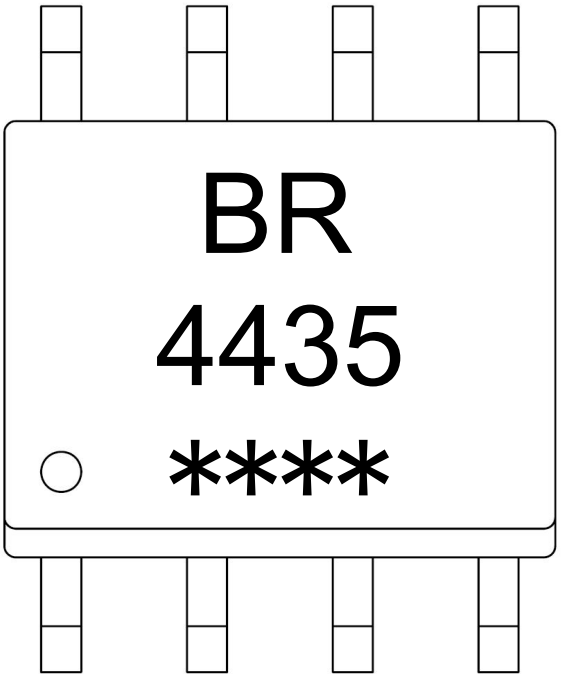
外形尺寸图 / Package Dimensions

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	α	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



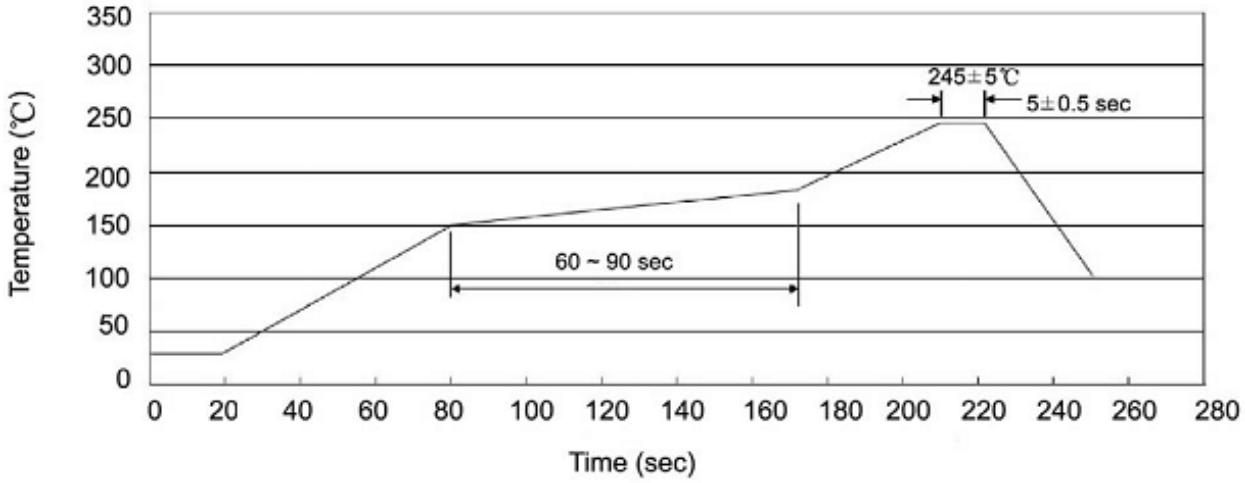
说明：

BR：	为公司代码
4435：	为型号代码
****：	为生产批号代码，随生产批号变化。

Note:

BR:	Company Code.
4435:	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: 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

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