

描述 / Descriptions

SOP-8 塑封封装 N 沟道 MOS 场效应管。N-Channel in a SOP-8 Plastic Package.

特征 / Features

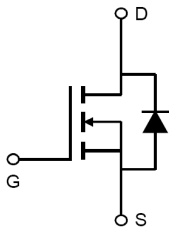
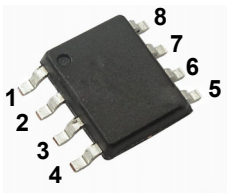
低导通电阻 $R_{DS(ON)}$ ，低栅极电荷，优化了快速转换特性，符合 RoHS 和无卤。

Low $R_{DS(ON)}$, Low Gate Charge, Optimized for fast-switching, RoHS and Halogen-Free Compliant.

用途 / Applications

DC/DC 和 AC/DC 转换器的同步整流，隔离直流/直流转换器在电信和工业。

Synchronous Rectification in DC/DC and AC/DC Converters, Isolated DC/DC Converters in Telecom and Industrial.

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

PIN1:S PIN 2:S PIN 3 : S PIN 4 : G

PIN5、PIN 6、PIN 7、PIN 8:D

放大及印章代码 / h_{FE} Classifications & 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
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_A=25^\circ\text{C}$	I_D	8.0	A
	$T_A=70^\circ\text{C}$		6.2	A
Pulsed Drain Current ^C		I_{DM}	32	A
Avalanche Current ^C		I_{AS}	14	A
Avalanche energy $L=0.1\text{mH}$ ^C		E_{AS}	10	mJ
VDS Spike	$10\ \mu\text{S}$	V_{SPIKE}	120	V
Power Dissipation ^B	$T_A=25^\circ\text{C}$	P_D	3.1	W
	$T_A=70^\circ\text{C}$		2.0	W
Maximum Junction-to-Ambient ^A $t \leq 10\text{S}$		$R_{\theta JA}$	40	$^\circ\text{C/W}$
Maximum Junction-to-Ambient ^{AD} Steady-State			75	$^\circ\text{C/W}$
Maximum Junction-to-Lead Steady-State		$R_{\theta JL}$	24	$^\circ\text{C/W}$
Operating and Junction Temperature Range		T_j T_{stg}	-55~+150	$^\circ\text{C}$

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}	$V_{GS}=0\text{V}$	$I_D=250\ \mu\text{A}$	100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=95\text{V}$	$V_{GS}=0\text{V}$			1.0	μA
		$T_J=25^\circ\text{C}$					
		$V_{DS}=95\text{V}$	$V_{GS}=0\text{V}$			100	μA
		$T_J=150^\circ\text{C}$					
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20\text{V}$	$V_{DS}=0\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\ \mu\text{A}$	1.1		2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}$	$I_D=8\text{A}$		19	23	m Ω
		$V_{GS}=4.5\text{V}$	$I_D=6\text{A}$		23	33	
Forward Transconductance	g_{FS}	$V_{DS}=5.0\text{V}$	$I_D=8\text{A}$		30		S
Diode Forward Voltage	V_{SD}	$I_{SD}=1.0\text{A}$	$V_{GS}=0\text{V}$			1.0	V
Maximum Continuous Drain-Source Diode Forward Current	I_S					4.0	A

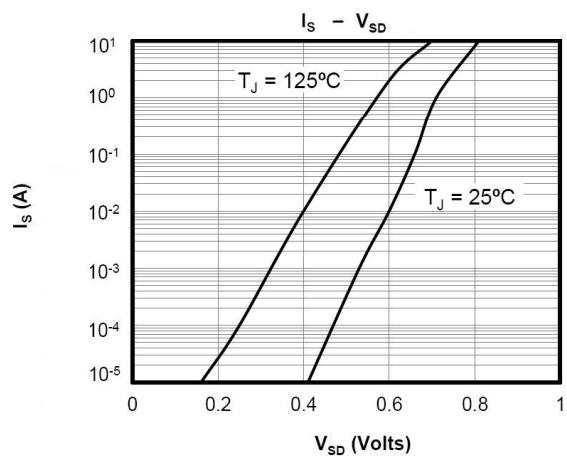
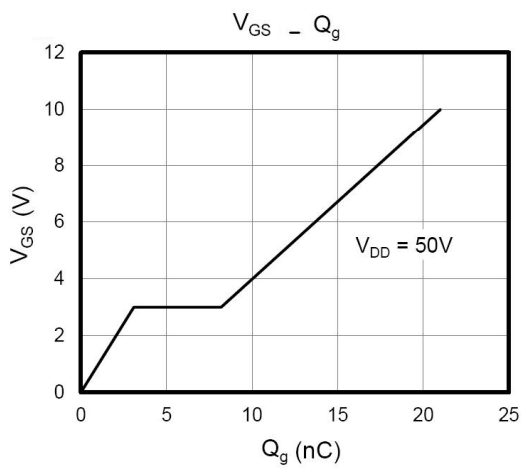
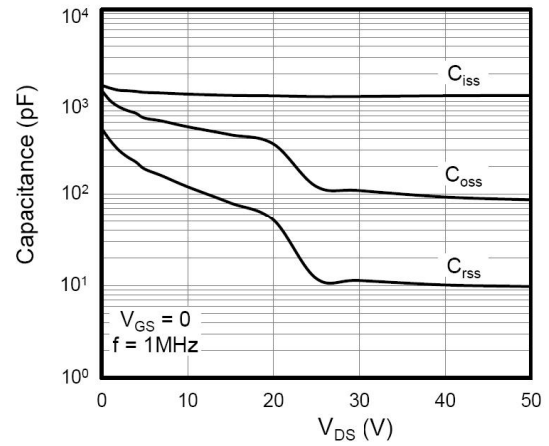
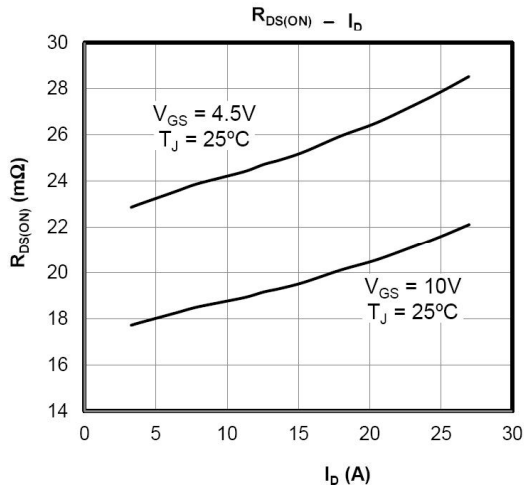
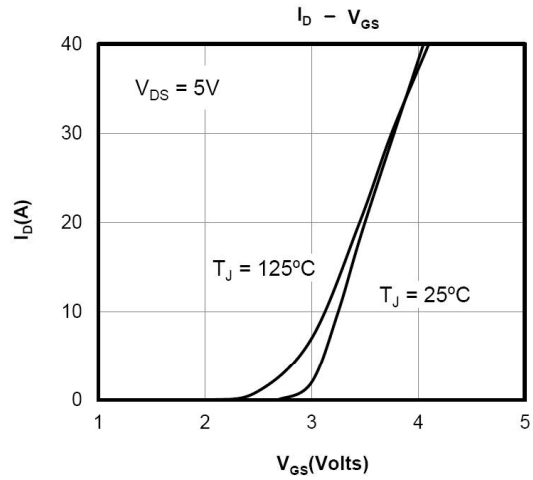
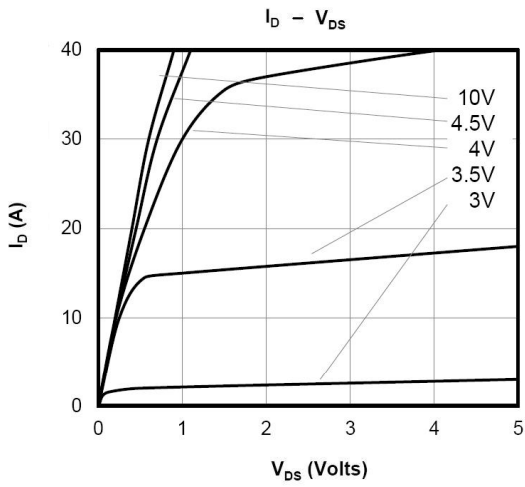
电性能参数 / Electrical Characteristics(Ta=25°C)

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	
Input Capacitance	C_{iss}	$V_{DS}=50V$ $V_{GS}=0V$ $f=1.0MHz$		1134		pF	
Output Capacitance	C_{oss}			92			
Reverse Transfer Capacitance	C_{rss}			10.3			
Total Gate Charge(10V)	Q_g	$V_{DD}=50V$ $I_D=8A$ $V_{GS}=10V$		21		nC	
Total Gate Charge(4.5V)				11			
Gate-Source Charge			Q_{gs}		3.1		
Gate-Drain Charge			Q_{gd}		5.1		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=50V$ $I_D=8A$ $R_G=3.0\Omega$		7.0		ns	
Turn-On Rise Time	t_r			3.0			
Turn-Off Delay Time	$t_{d(off)}$			20			
Turn-Off Fall Time	t_f			3.0			
Body Diode Reverse Recovery Time	t_{rr}	$I_F=8A$ $di/dt=500A/\mu s$		20		ns	
Body Diode Reverse Recovery Charge	Q_{rr}			90		nC	

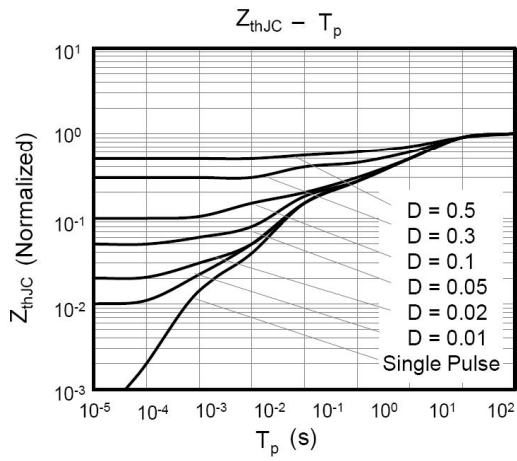
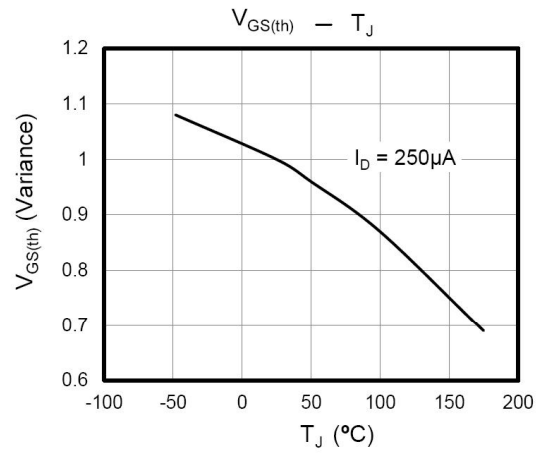
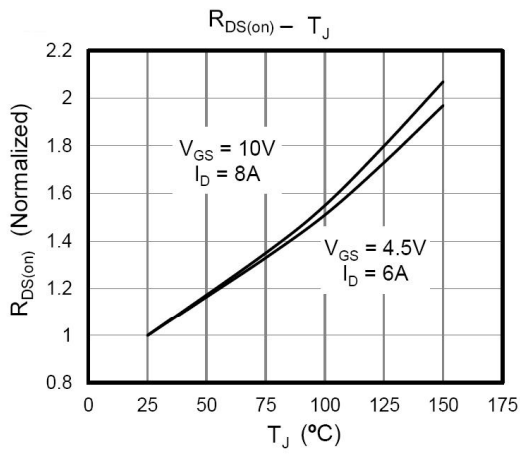
Notes:

- A. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ C$. The value in any given application depends on the user's specific board design.
- B. The power dissipation P_D is based on $T_{J(MAX)}=150^\circ C$, using $\leq 10s$ junction-to-ambient thermal resistance.
- C. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}=150^\circ C$. Ratings are based on low frequency and duty cycles to keep initial $T_J=25^\circ C$.
- D. The $R_{\theta JA}$ is the sum of the thermal impedance from junction to lead $R_{\theta JL}$ and lead to ambient.
- E. The static characteristics in Figures 1 to 6 are obtained using $<300\mu s$ pulses, duty cycle 0.5% max.
- F. These curves are based on the junction-to-ambient thermal impedance which is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, assuming a maximum junction temperature of $T_{J(MAX)}=150^\circ C$. The SOA curve provides a single pulse rating.

电参数曲线图 / Electrical Characteristic Curve



电参数曲线图 / Electrical Characteristic Curve



测试电路和波形 / Test Circuit & Waveform

Figure A: Gate Charge Test Circuit and Waveform

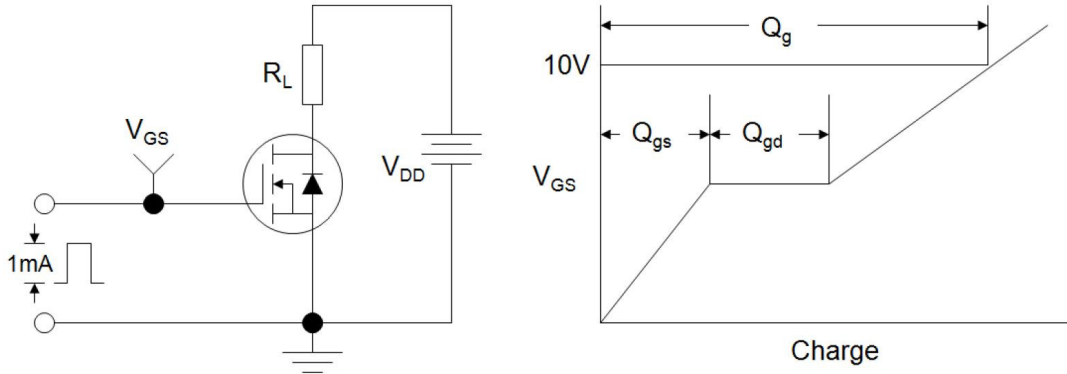


Figure B: Resistive Switching Test Circuit and Waveform

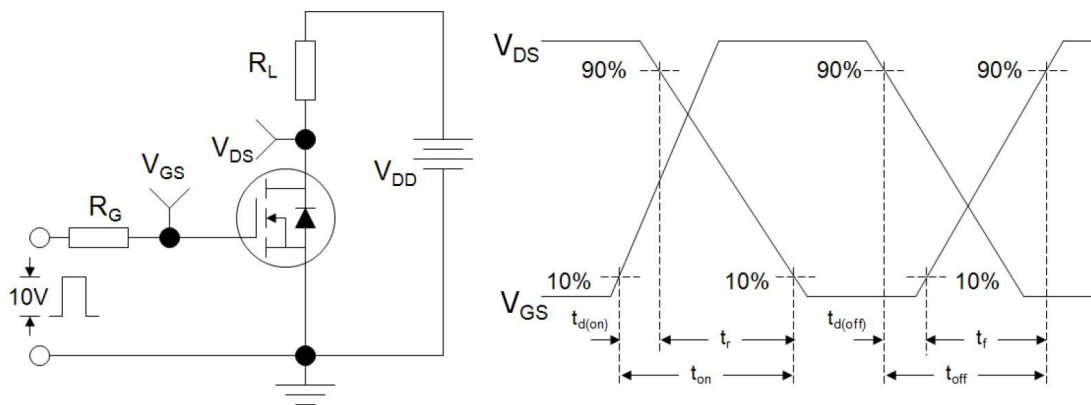
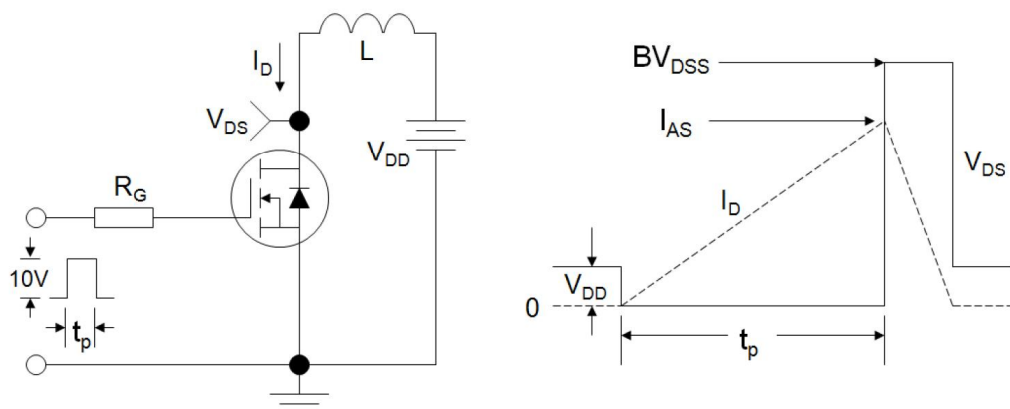


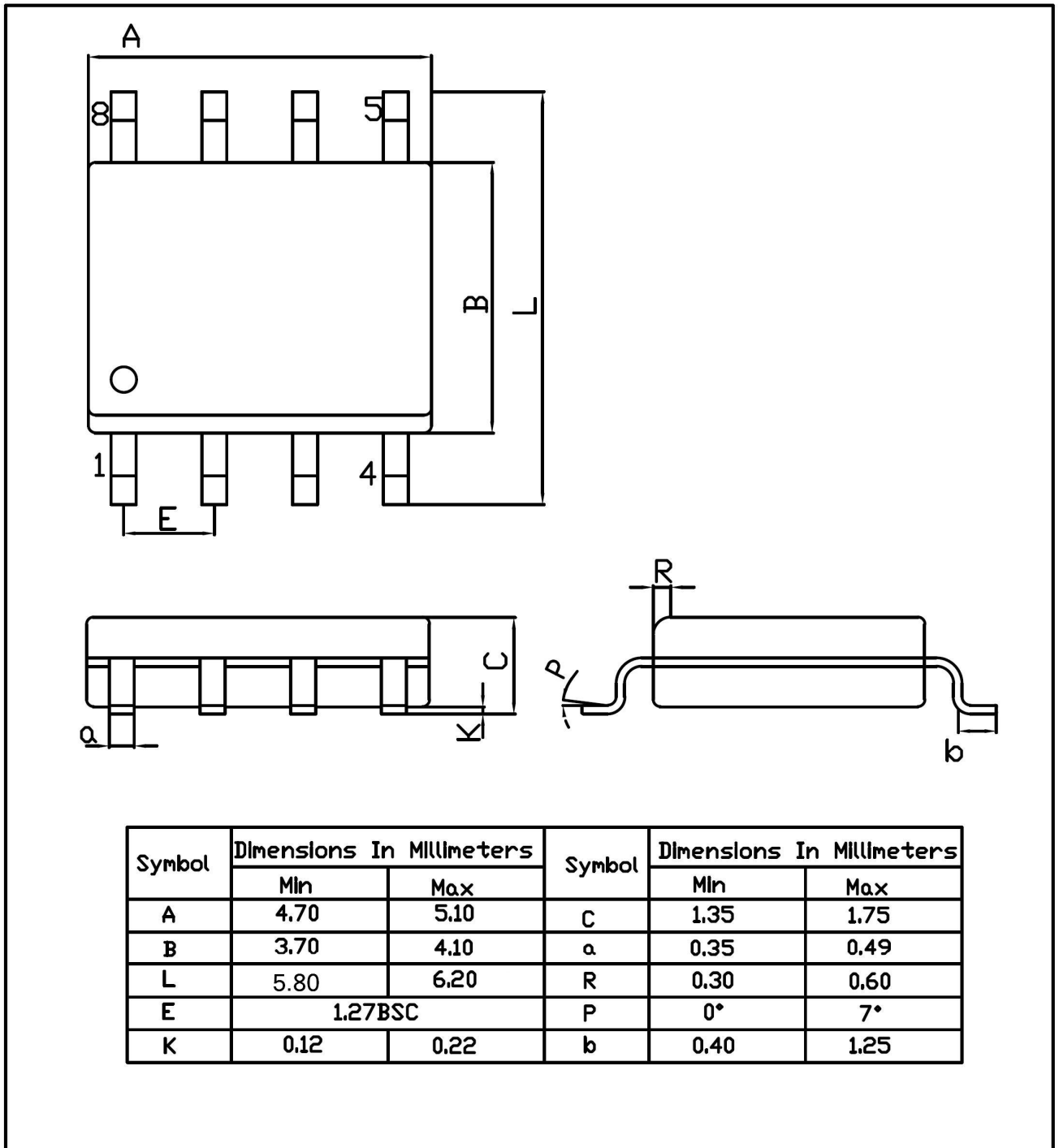
Figure C: Unclamped Inductive Switching Test Circuit and Waveform



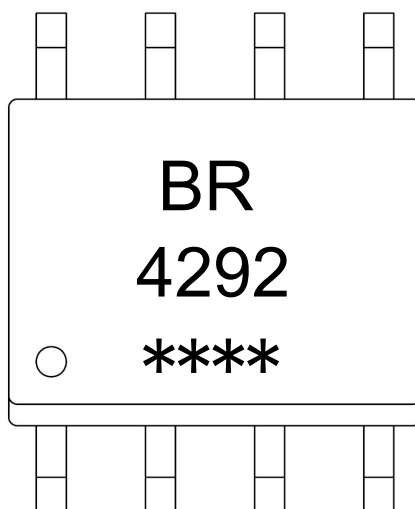
外形尺寸图 / Package Dimensions

SOP-8

Unit:mm



印章说明 / Marking Instructions



说明：

BR： 为公司代码

4292： 为型号代码

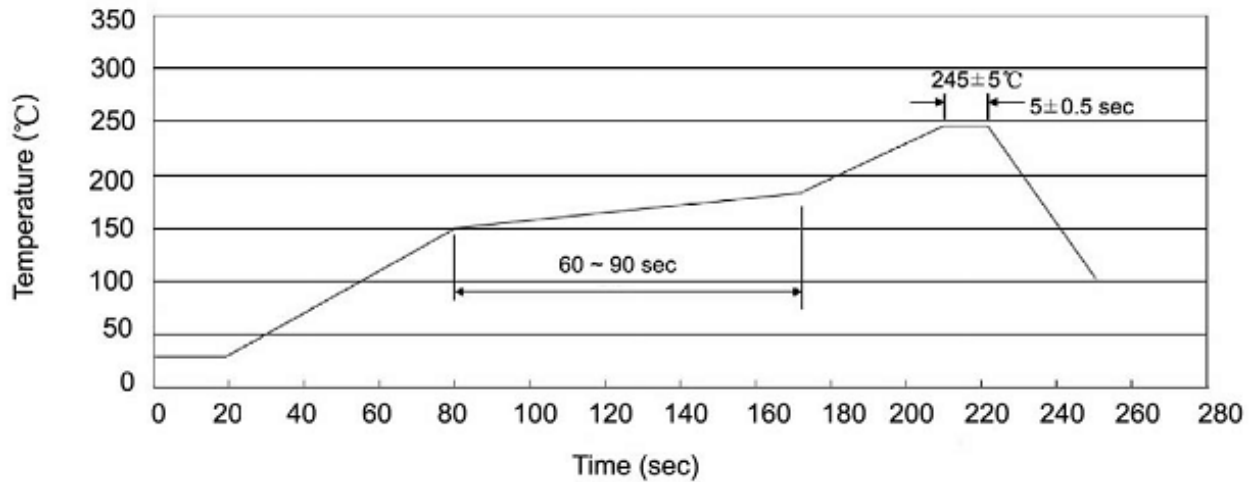
****： 为生产批号代码，随生产批号变化

Note:

BR: Company Code.

4292: 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