

### 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.

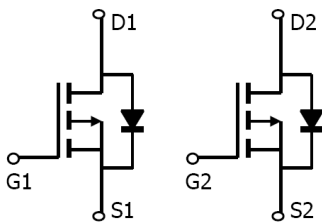
### 特征 / Features

$V_{DS}(V)=-30V$   $I_D=-5.0A$   
 $R_{DS(ON)} < 65m\Omega(V_{GS}=-10V)$   
 $R_{DS(ON)} < 75m\Omega(V_{GS}=-4.5V)$

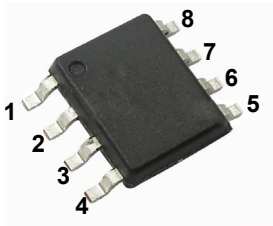
### 用途 / Applications

用于电源管理，便携式设备和电池供电系统。适用于作负载开关或脉宽调制应用。  
Power Management in Notebook computer, Portable Equipment and Battery powered systems and this device is suitable for use as a load switch or in PWM applications.

### 内部等效电路 / Equivalent Circuit



### 引脚排列 / Pinning



PIN 1 : S2    PIN 2 : G2    PIN 3 : S1    PIN 4 : G1  
PIN 5 : D1    PIN 6 : D1    PIN 7 : D2    PIN 8 : D2

### 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	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	±12	V
Continuous Drain Current <sup>A</sup>	$I_D (T_a=25^\circ\text{C})$	-5.0	A
	$I_D (T_a=70^\circ\text{C})$	-4.2	A
Pulsed Drain Current <sup>B</sup>	$I_{DM}$	-20	A
Power Dissipation for Single Operation <sup>A</sup>	$P_D (T_a=25^\circ\text{C})$	2.0	W
	$P_D (T_a=70^\circ\text{C})$	1.4	W
Junction and Storage Temperature Range	$T_j, T_{stg}$	-55 ~ +150	°C
Thermal Resistance-Junction to Ambient <sup>A</sup>	$R_{\theta JA} (t \leq 10s)$	62.5	°C/W
	$R_{\theta JA}$	110	°C/W
Maximum Junction-to-Lead <sup>C</sup>	$R_{\theta JL}$	40	°C/W

Note:

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

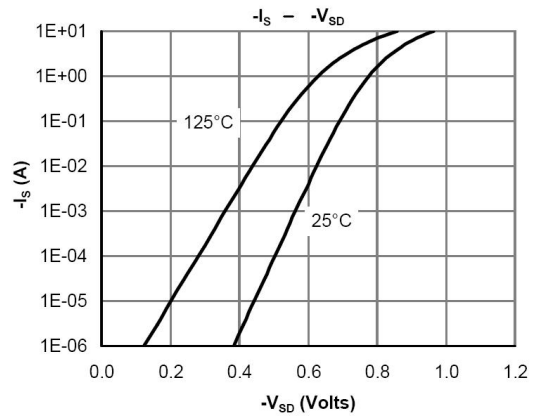
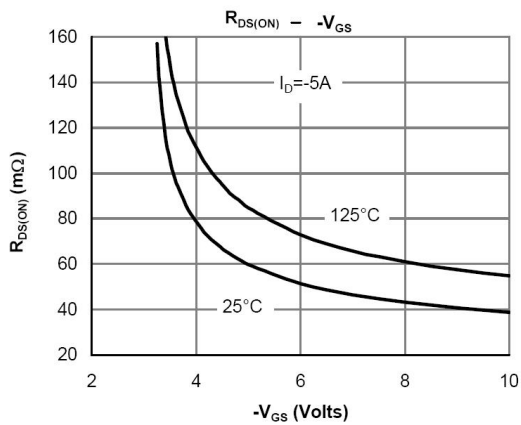
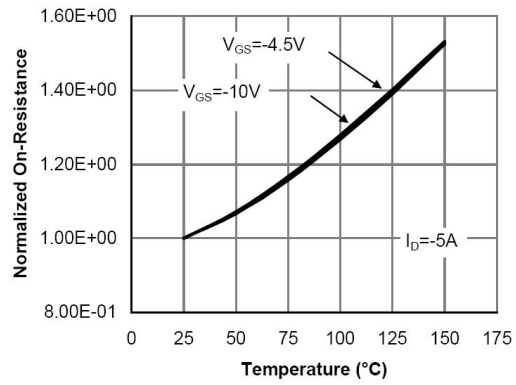
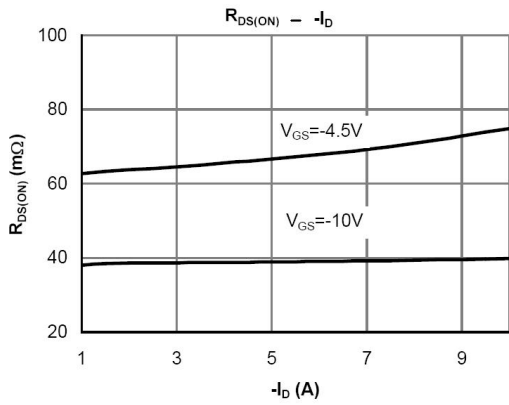
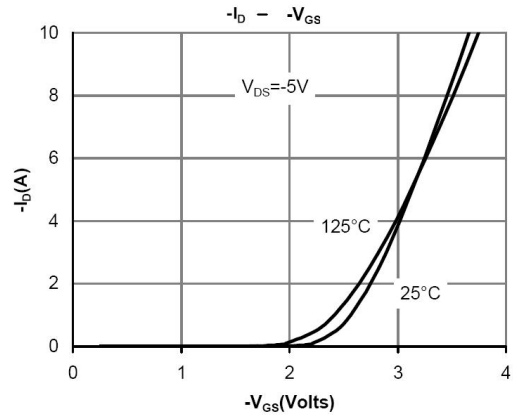
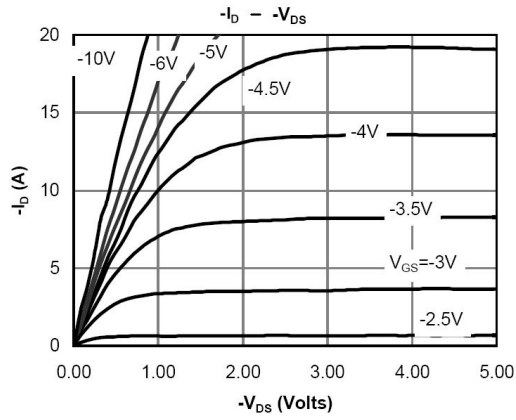
D. The static characteristics in Figures 1 to 6,12,14 are obtained using 80  $\mu s$  pulses, duty cycle 0.5% max.

E. These tests are performed with the device mounted on 1 in<sup>2</sup> FR-4 board with 2oz. Copper, in a still air environment with  $T_A=25^\circ\text{C}$ . The SOA curve provides a single pulse rating.

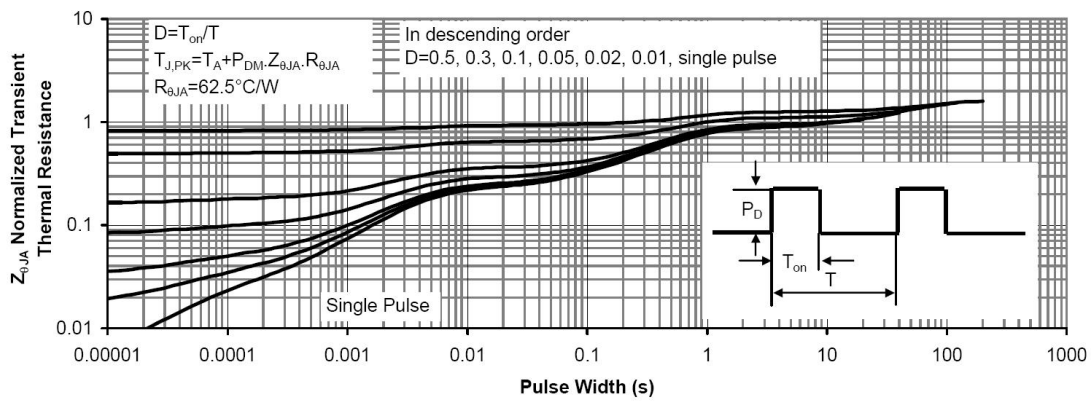
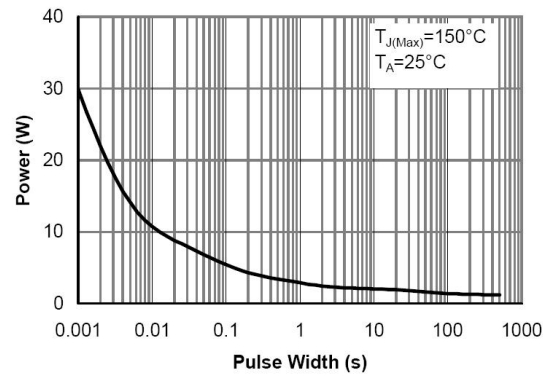
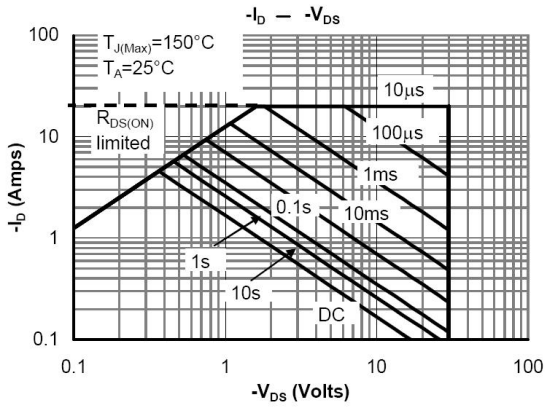
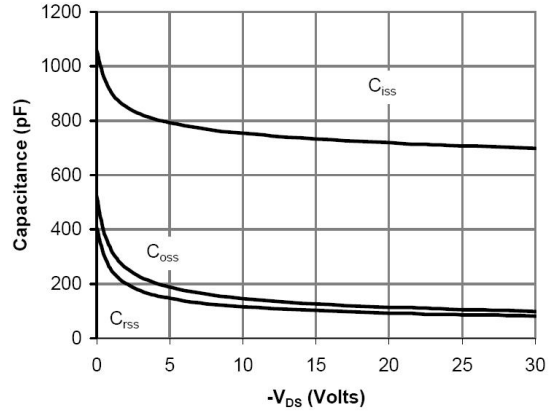
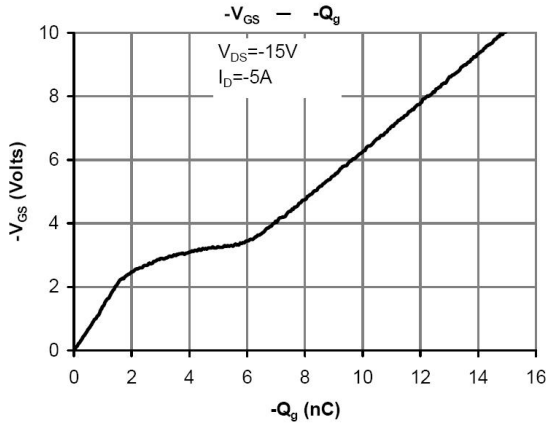
**电性能参数 / Electrical Characteristics(Ta=25°C)**

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	$BV_{DSS}$	$I_D=-250\mu A$ $V_{GS}=0V$	-30			V	
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-24V$ $V_{GS}=0V$			-1.0	$\mu A$	
		$V_{DS}=-24V$ $V_{GS}=0V$ $T_J=55^\circ C$			-5.0		
Gate-Body leakage current	$I_{GSS}$	$V_{DS}=0V$ $V_{GS}=\pm 12V$			$\pm 100$	nA	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-0.5	-0.7	-1.3	V	
On state drain current	$I_{D(ON)}$	$V_{GS}=-4.5V$ $V_{DS}=-5.0V$	5			A	
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=-10V$ $I_D=-5.0A$		56	65	m $\Omega$	
		$V_{GS}=-10V$ $I_D=-5.0A$ $T_J=125^\circ C$		65	86		
		$V_{GS}=-4.5V$ $I_D=-4.0A$		64	75		
Forward Transconductance	$g_{FS}$	$V_{DS}=-5.0V$ $I_D=-5.0A$		12		S	
Diode Forward Voltage	$V_{SD}$	$I_S=-1.0A$ $V_{GS}=0$		-0.76	-1.0	V	
Total Gate Charge(10V)	$Q_g$	$V_{GS}=-10V$ $V_{DS}=-15V$ $I_D=-5.0A$		14.7		nC	
Total Gate Charge(4.5V)				7.6			
Gate-Source Charge			$Q_{gs}$		2.0		
Gate-Drain Charge			$Q_{gd}$		3.8		
Gate Resistance	$R_g$	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		10		$\Omega$	
Input Capacitance	$C_{iss}$	$V_{GS}=0V$ $V_{DS}=-15V$ $f=1MHz$		700		pF	
Output Capacitance	$C_{oss}$			120			
Reverse Transfer Capacitance	$C_{rss}$			75			
Turn-on Delay Time	$t_{d(ON)}$	$V_{GS}=-10V$ $V_{DS}=-15V$ $R_L=3.0\Omega$ $R_{GEN}=3.0\Omega$		8.3		ns	
Turn-on Rise Time	$t_r$			5.0			
Turn-off Delay Time	$t_{d(OFF)}$			29			
Turn-off Fall Time	$t_f$			14			
Body Diode Reverse Recovery Time	$t_{rr}$	$I_F=-5.0A$ $di/dt=100A/\mu s$		23.5		ns	
Body Diode Reverse Recovery Charge	$Q_{rr}$	$I_F=-5.0A$ $di/dt=100A/\mu s$		13.4		nC	

**电参数曲线图 / Electrical Characteristic Curve**



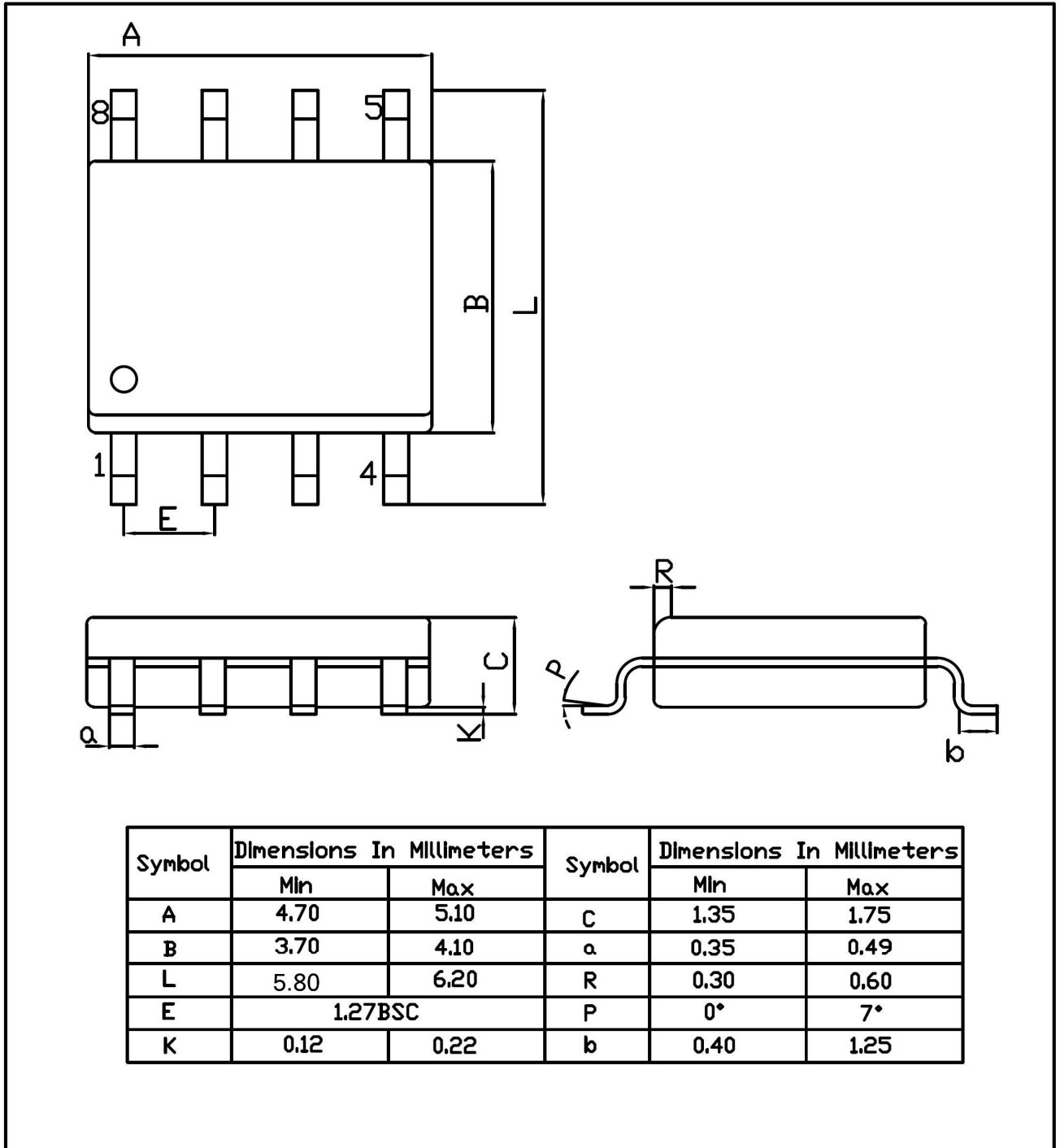
**电参数曲线图 / Electrical Characteristic Curve**



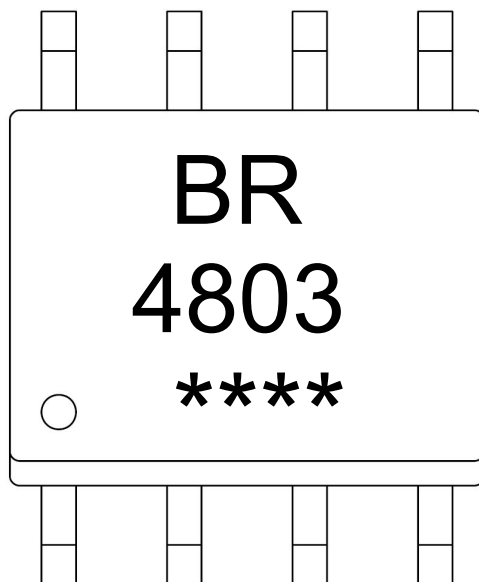
外形尺寸图 / Package Dimensions

SOP-8

Unit:mm



印章说明 / Marking Instructions



说明：

BR： 为公司代码

4803： 为型号代码

\*\*\*\*： 为生产批号代码，随生产批号变化。

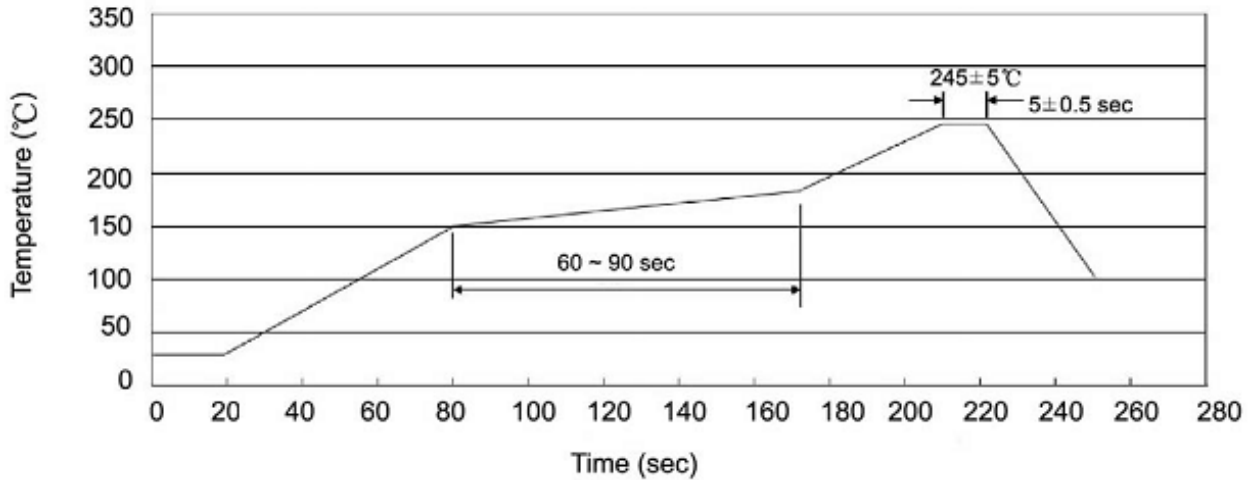
Note:

BR: Company Code.

4803: 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 <sup>3</sup> )		
	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**