

BRCS6570SC

Rev.E Jul.-2016

描述 / Descriptions

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

特征 / Features

低导通电阻，低输入电容，开关速度快。

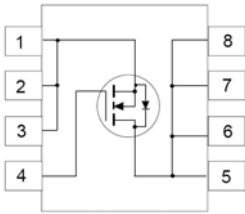
Low On-Resistance, Low Input Capacitance, Fast Switching Speed.

用途 / Applications

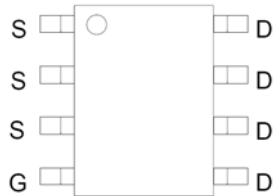
适用于负荷开关，转换开关。

Load Switch, Adaptor Switch.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1、PIN 2、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_{DSS}	20	V
Gate-Source Voltage	V_{GS}	± 8.0	V
Drain Current –Continuous (note 1a) –Pulsed	I_D	15	A
		50	A
Power Dissipation for Single Operation (note 1a) (note 1b) (note 1c)	P_D	2.5	W
		1.2	
		1.0	
Thermal Resistance, Junction-to-Ambient (note 1a)	$R_{\theta JA}$	50	$^{\circ}C/W$
Thermal Resistance, Junction-to case (note 1)	$R_{\theta JC}$	25	$^{\circ}C/W$
Operating and Junction Temperature Range	T_j T_{stg}	-55~150	$^{\circ}C$

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}	$V_{GS}=0V$ $I_D=250\mu A$	20			V
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	$I_D=250\mu A$ Referenced to 25 $^{\circ}C$		29		mV/ $^{\circ}C$
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=16V$ $V_{GS}=0V$			1.0	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 8.0V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	0.4	0.9	1.5	V
Gate Threshold Voltage Temperature Coefficient	$\Delta V_{GS(th)}/\Delta T_J$	$I_D=250\mu A$ Referenced to 25 $^{\circ}C$		-4.0		mV/ $^{\circ}C$
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V$ $I_D=15A$		6.0	7.5	m Ω
		$V_{GS}=4.5V$ $I_D=15A$ $T_J=125^{\circ}C$		9.0	13	
		$V_{GS}=2.5V$ $I_D=12A$		8.0	10	
On-State Drain Current	$I_{D(on)}$	$V_{DS}=5.0V$ $V_{GS}=4.5V$	25			A
Forward Transconductance	g_{FS}	$V_{DS}=5.0V$ $I_D=15A$		70		S

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} =10V V _{GS} =0V f=1.0MHz		4700		pF
Output Capacitance	C _{oss}			850		
Reverse Transfer Capacitance	C _{rss}			310		
Total Gate Charge	Q _g	V _{DD} =10V I _D =15A V _{GS} =5.0V		47	66	nC
Gate-Source Charge	Q _{gs}			7.0		
Gate-Drain Charge	Q _{gd}			10.5		
Turn-On Delay Time	t _{d(on)}	V _{DD} =10V I _D =1.0A R _{GEN} =6Ω V _{GS} =4.5V		20	32	ns
Turn-On Rise Time	t _r			27	44	
Turn-Off Delay Time	t _{d(off)}			95	133	
Turn-Off Fall Time	t _f			35	56	
Maximum Continuous Drain-Source Diode Forward Current	I _S				2.1	A
Drain-Source Diode Forward Voltage	V _{SD}	I _S =2.1A (note2) V _{GS} =0V		0.65	1.2	V

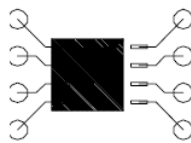
Notes:

1. R_{θJA} is the sum of the junction-to-case and case-to-ambient resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. R_{θJC} is guaranteed by design while R_{θJA} is determined by the user's board design.

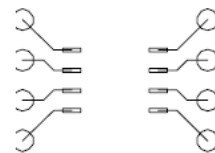
a) 50°C/W when mounted on a 0.5 in² pad of 2 oz. copper.



b) 105°C/W when mounted on a 0.02 in² pad of 2 oz. copper.

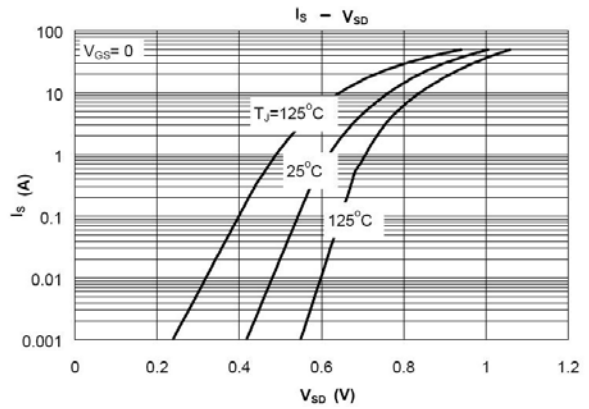
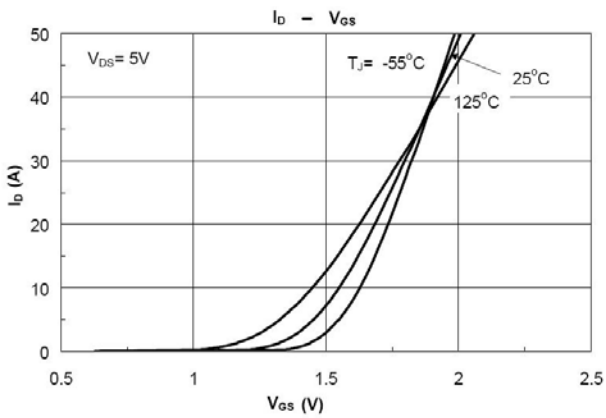
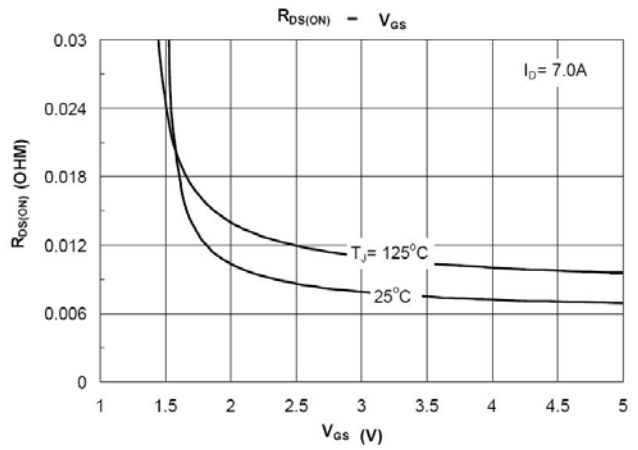
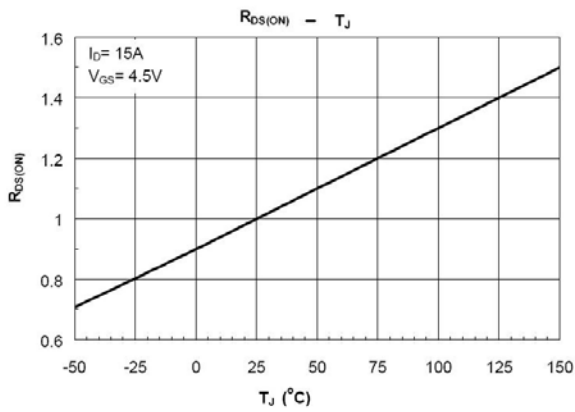
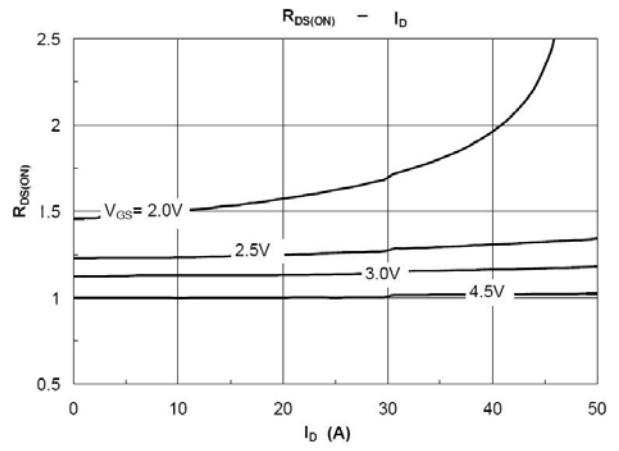
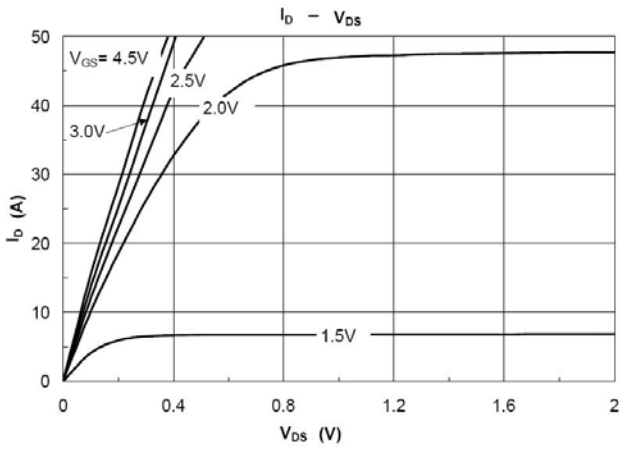


c) 125°C/W when mounted on a 0.003 in² pad of 2 oz. copper.

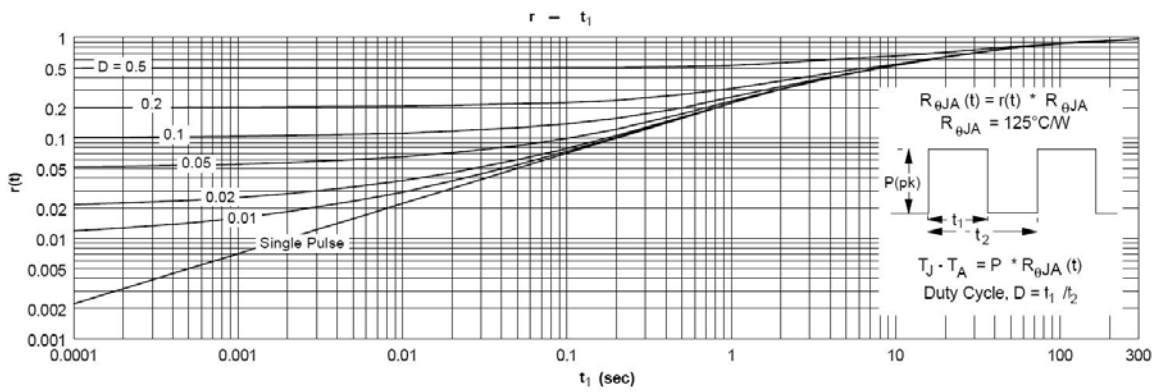
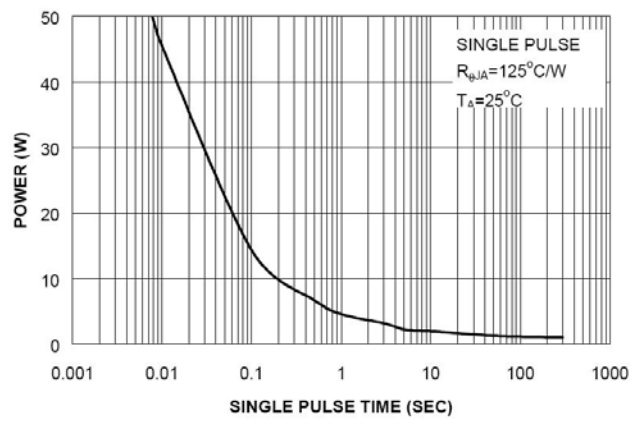
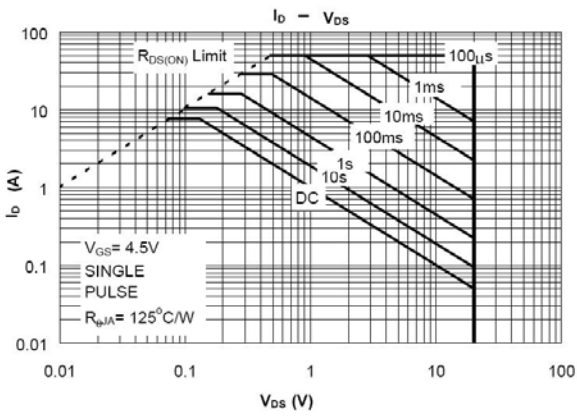
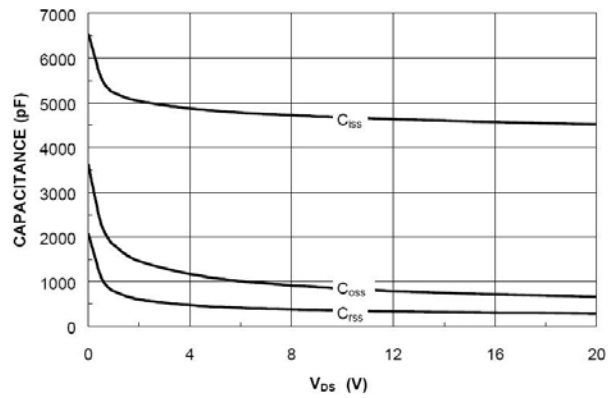
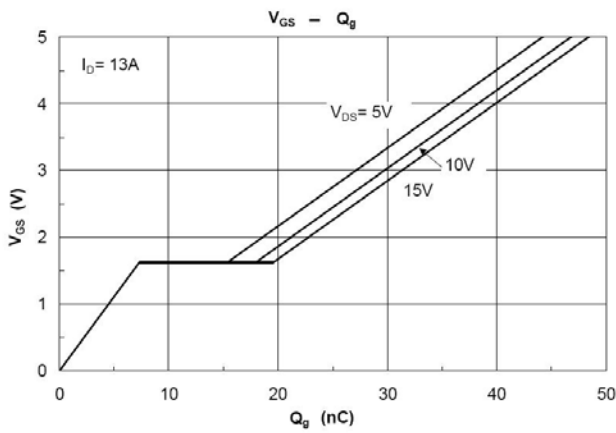


2. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%

电参数曲线图 / Electrical Characteristic Curve



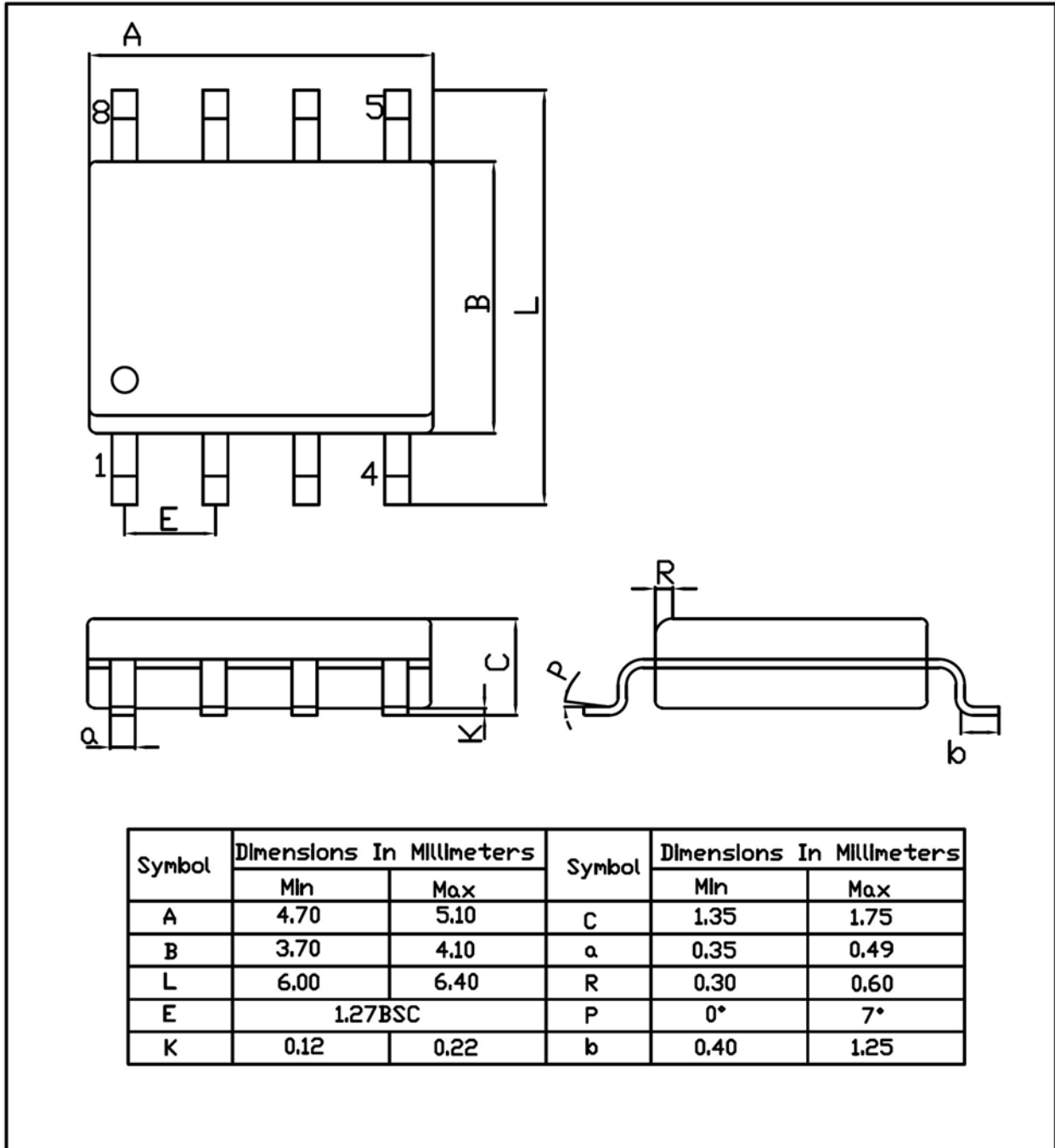
电参数曲线图 / Electrical Characteristic Curve



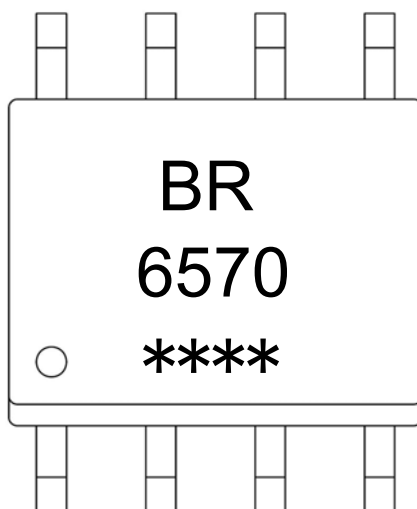
外形尺寸图 / Package Dimensions

SOP-8

Unit:mm



印章说明 / Marking Instructions



说明：

BR： 为公司代码

6570： 为型号代码

****： 为生产批号代码，随生产批号变化。

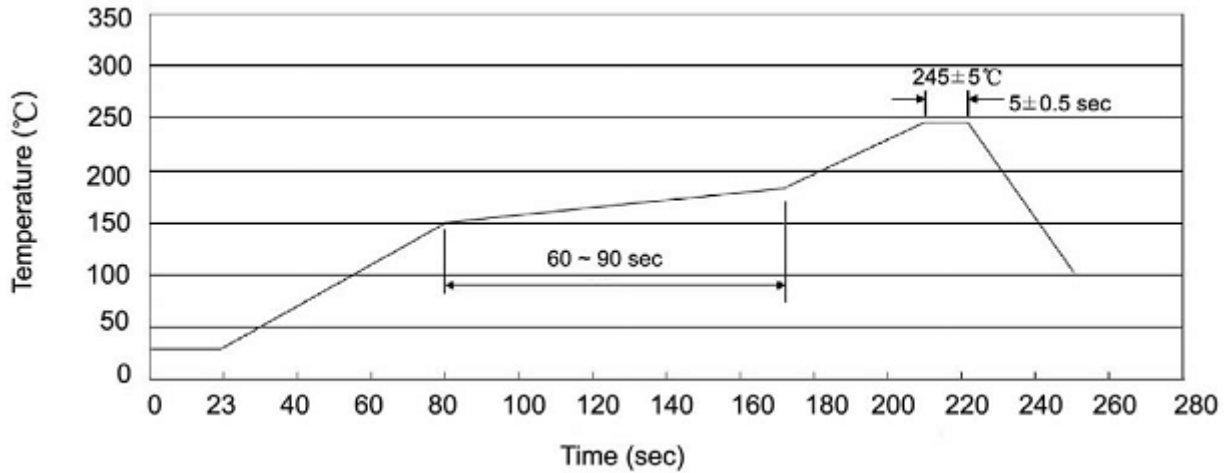
Note:

BR: Company Code.

6570: 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 25~150°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:25~150°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	5	40,000	13" ×16	360×360×50	385×257×392

使用说明 / Notices