

BRCS2301EMF

Rev.A Aug.-2019

描述 / Descriptions

SOT23-6 塑封封装 P 沟道 MOS 场效应管。
P- CHANNEL MOSFET in a SOT23-6 Plastic Package.

特征 / Features

$R_{DS(ON)} < 110m\Omega, V_{GS} = -4.5V$

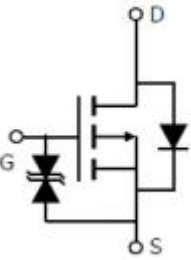
$R_{DS(ON)} < 150m\Omega, V_{GS} = -2.5V$

无卤产品。HF Product.

用途 / Applications

主要用于显示屏驱动。
Primarily the display screen drive applications.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN 1 : D PIN 2 : D PIN 3 : G PIN 4 : S PIN 5 : D PIN 6 : D

印章代码 / Marking

Marking	2301E ****
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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_{GSS}	± 8	V
Drain Current – Continuous	I_D	-3.3	A
Drain Current – Continuous	$I_D(T_A=70^\circ\text{C})$	-2.7	A
Pulsed Drain Current	I_{DM}	-17	A
Power Dissipation	P_D	1.18	W
Power Dissipation	$P_D(T_A=70^\circ\text{C})$	0.75	W
Storage Temperature Range	T_{stg}	-55~+150	°C
Operating Junction Temperature Range	T_j	-55~+150	°C
Maximum Junction-to-Ambient	$t \leq 10s$	94	°C/W
Maximum Junction-to-Ambient	Steady-State		
Maximum Junction-to-Lead	Steady-State	$R_{\theta JL}$	66

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	$V_{(BR)DSS}$	$V_{GS}=0V$ $I_D=-250\mu A$	-20	-22		V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-0.5	-0.6	-1.0	V
Static Drain-Source On-Resistance	$R_{DS(on)1}$	$V_{GS}=-4.5V$ $I_D=-2.8A$		50	110	mΩ
	$R_{DS(on)2}$	$V_{GS}=-2.5V$ $I_D=-2.0A$		58	150	mΩ
Zero Gate Voltage Drain Current	$I_{DSS(1)}$	$V_{DS}=-20V$ $V_{GS}=0V$			-1	μA
	$I_{DSS(2)}$	$V_{DS}=-20V$ $V_{GS}=0V$ $T_j=55^\circ\text{C}$			-5	μA
Gate-Body Leakage	I_{GSS}	$V_{GS}=\pm 8V$ $V_{DS}=0V$			± 10	μA
Drain-Source Diode Forward Voltage	V_{SD}	$I_S=-1.6A$ $V_{GS}=0V$		-0.8	-1.2	V
Maximum Body-Diode Continuous Current	I_S				-1.5	A
Total Gate Charge	Q_g	$V_{DS}=-6V,$ $V_{GS}=-4.5V,$ $I_D=-2.8A$		5.5		nC
Gate-Source Charge	Q_{gs}			1.5		
Gate-Drain Charge	Q_{gd}			1.3		

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}	$V_{DS}=-15V$ $V_{GS}=0$ $f=1MHz$		510		pF
Output Capacitance	C_{oss}			53		
Reverse Transfer Capacitance	C_{rss}			17		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-6V$ $R_L=6\Omega$ $R_G=6\Omega$ $V_{GS}=4.5V$		1360		ns
Turn-On Rise Time	t_r			831		
Turn-Off Delay Time	$t_{d(off)}$			5520		
Turn-Off Fall Time	t_f			1520		

电参数曲线图 / Electrical Characteristic Curve

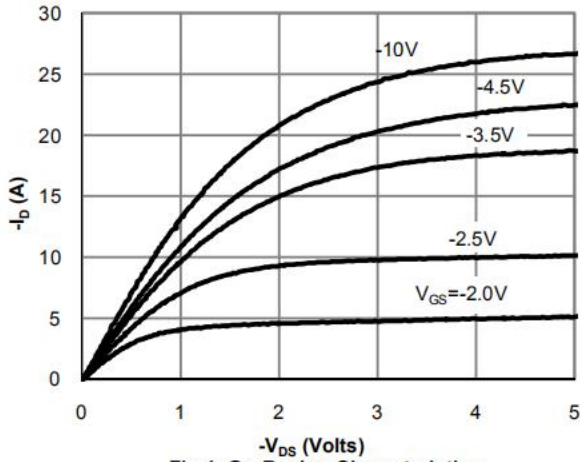


Fig 1: On-Region Characteristics

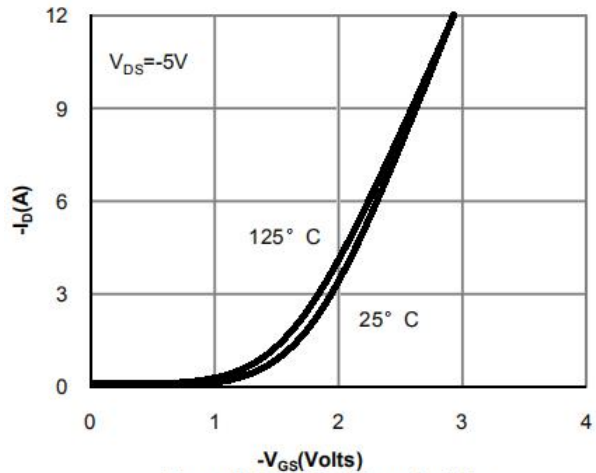


Figure 2: Transfer Characteristics

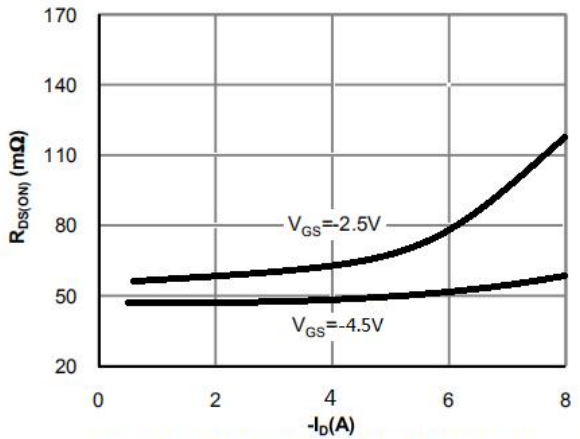


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

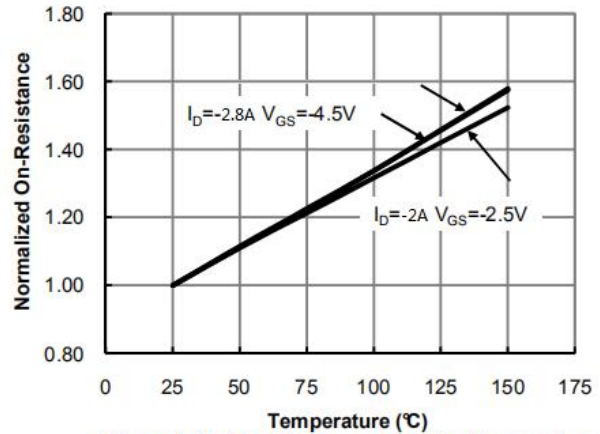


Figure 4: On-Resistance vs. Junction Temperature

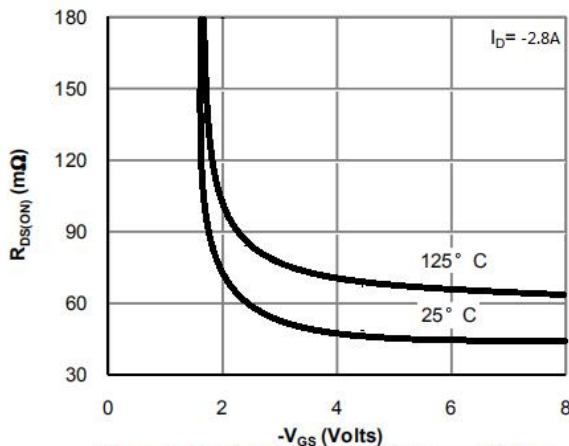


Figure 5: On-Resistance vs. Gate-Source Voltage

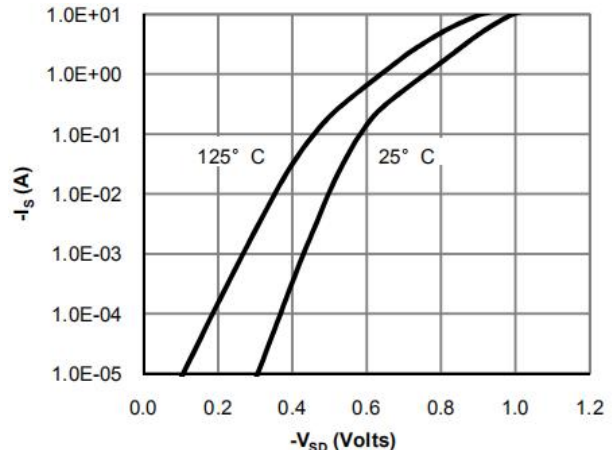


Figure 6: Body-Diode Characteristics

电参数曲线图 / Electrical Characteristic Curve

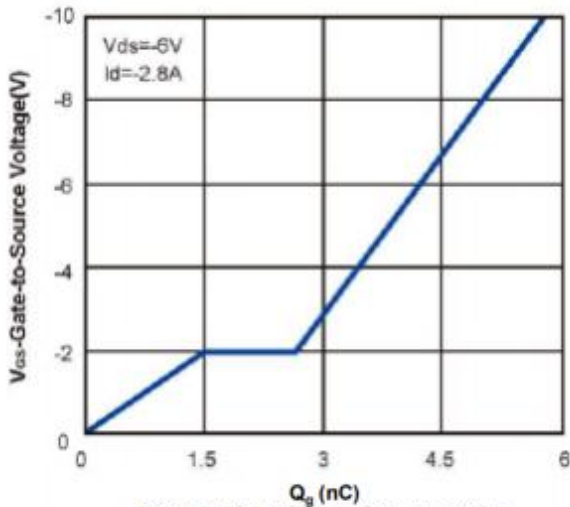


Figure 7: Gate-Charge Characteristics

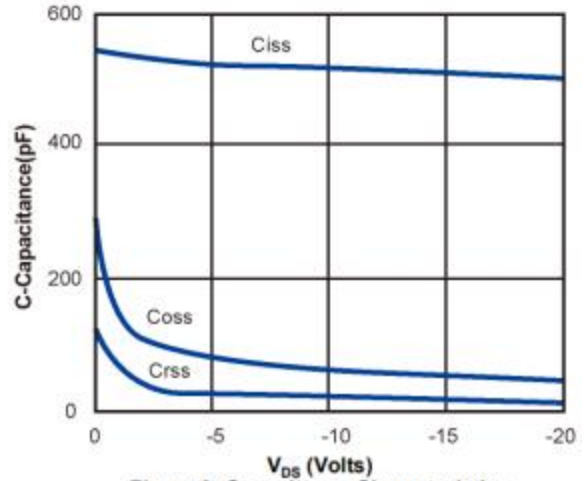


Figure 8: Capacitance Characteristics

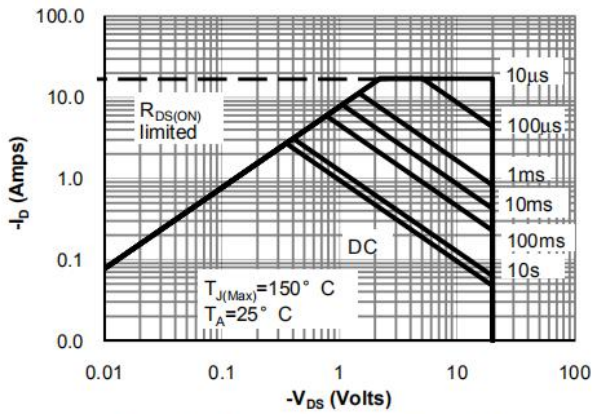


Figure 9: Maximum Forward Biased Safe Operating Area

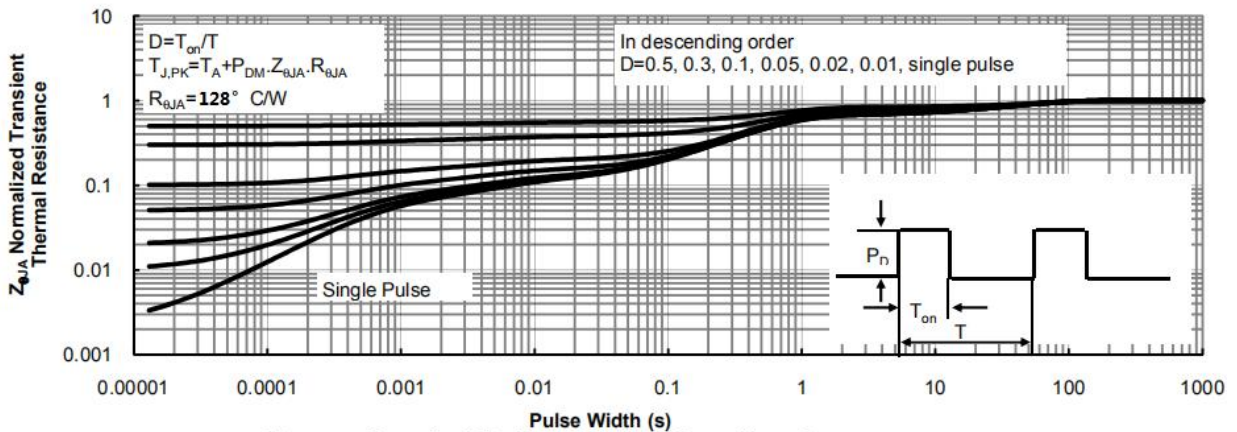
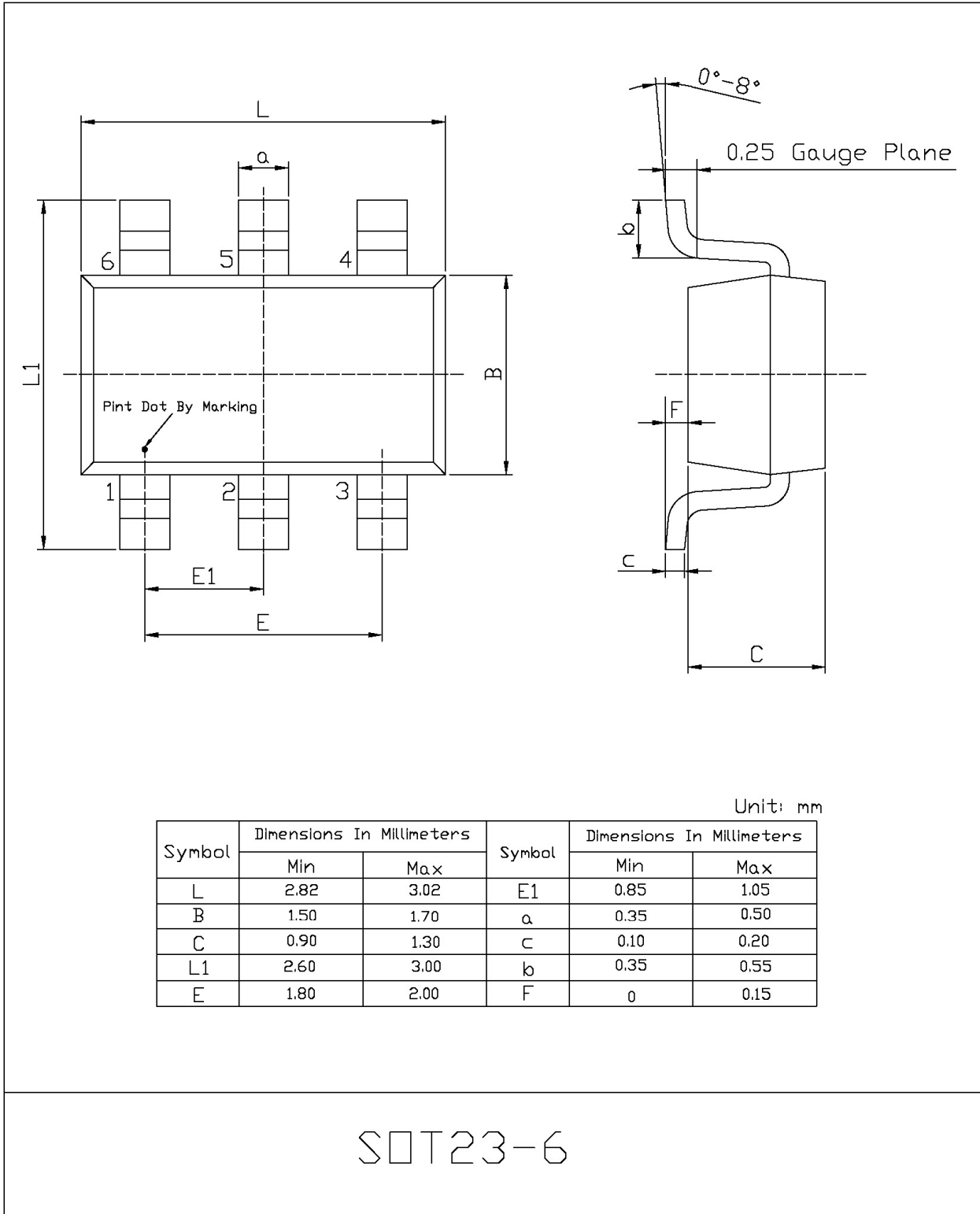
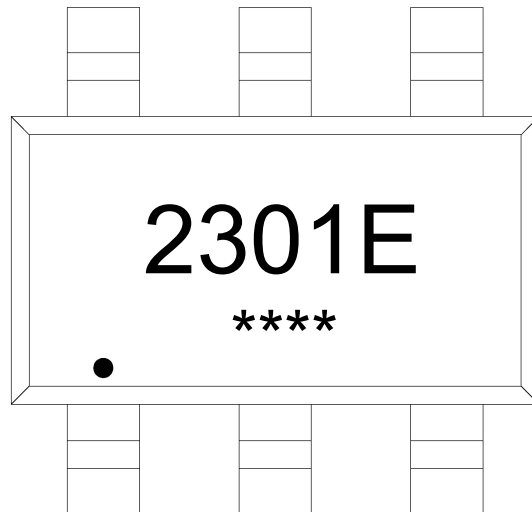


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions



印章说明 / Marking Instructions



说明：

2301E: 为型号代码

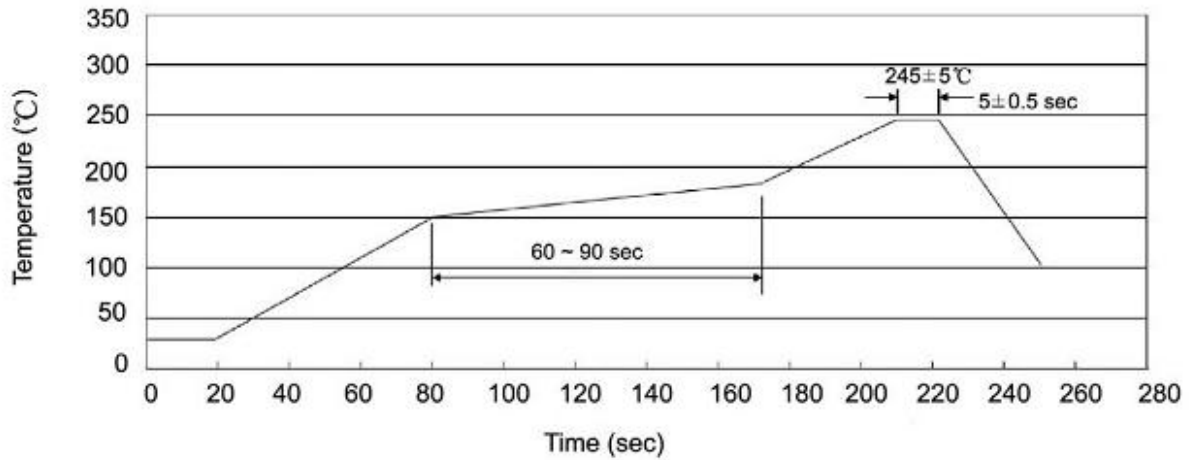
****: 为公司代码

Note:

2301E : Product Type

****: Company Code.

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
SOT23-5/6	3,000	10	30,000	4	120,000	7" ×8	210×205×205	445×230×435

使用说明 / Notices