描述 / Descriptions

SOT23-6 塑封封装互补增强模式场效应管。
Complementary Enhancement MOSFET in a SOT23-6 Plastic Package.

特征 / Features

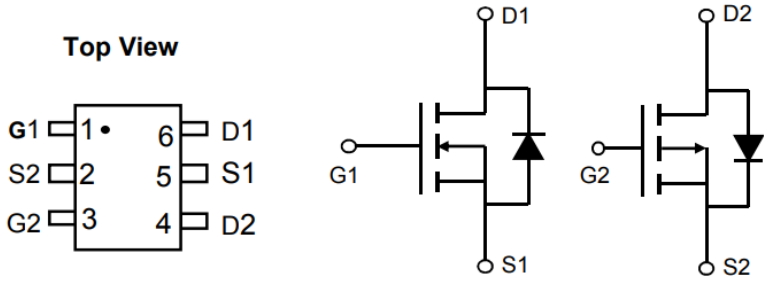
N-channel	P-channel
V_{DS}(V)=20V	V_{DS}(V)=-20V
I_D=5.0A	I_D=-2.8A
$R_{DS(ON)}$@4.5V<30mΩ (TYP. 22mR)	$R_{DS(ON)}$@-4.5V<100mΩ (TYP. 78mR)
$R_{DS(ON)}$@2.5V<60(TYP. 30mR)	$R_{DS(ON)}$@-2.5V<150mΩ (TYP. 107mR)

无卤产品。HF Product.

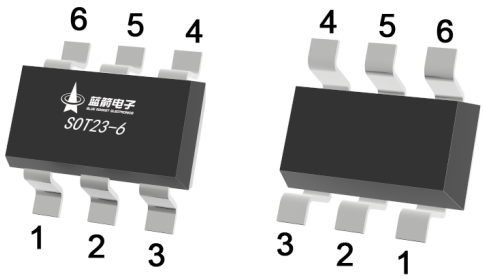
用途 / Applications

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

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
		N-channe	P-channell	
Drain-Source Voltage	V_{DSS}	20	-20	V
Gate-Source Voltage	V_{GSS}	±12		V
Continuous Drain Current	I_D	5.0	-2.8	A
Pulsed Drain Current	I_{DM}	20.4	-11.7	A
Power Dissipation	P_D	1.2	1.2	W
Junction and Storage Temperature Range	T_J,T_{STG}	-55 to +150		℃
Maximum Junction-to-Ambient	$R_{\theta JA}$	104		℃/W

N-沟道电性能参数/N-CHANNEL 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}	V_{GS}=0	I_D=250μA	20	22		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0	V_{DS}=20V			1.0	μA
Gate–Body Leakage.	I_{GSS}	V_{GS}=±12V	V_{DS}=0V			±100	nA
Static Drain–Source On–Resistance	$R_{DS(on)1}$	V_{GS}=4.5V	I_D=3.0A		22	30	mΩ
	$R_{DS(on)2}$	V_{GS}=2.5V	I_D=3.0A		30	60	mΩ
Drain–Source Diode Forward Voltage	V_{SD}	V_{GS}=0V	I_D=1.0A			1.2	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}	I_D=250μA	0.5	0.67	1.0	V
Input Capacitance	C_{iss}	V_{DS}=15V f=1.0MHz	V_{GS}=0V		340		pF
Output Capacitance	C_{oss}				30		pF
Reverse Transfer Capacitance	C_{rss}				25		pF
Total Gate Charge	Q_g(10V)	V_{GS}=10V, I_D=4A	V_{DS}=15V,		8.2		nC
Total Gate Charge	Q_g(4.5V)				4.3		
Gate Source Charge	Q_{gs}				2		
Gate Drain Charge	Q_{gd}				1.5		
Turn–On Delay Time	$t_{d(on)}$	V_{GS}=10V R_{GEN}=3Ω	V_{DS}=15A R_L=3.75Ω		2.5		ns
Turn–On Rise Time	t_r				3		
Turn–Off Delay Time	$t_{d(off)}$				30		
Turn–Off Fall Time	t_f				5		

N-沟道电参数曲线图 / N-CHANNEL Electrical Characteristic Curve

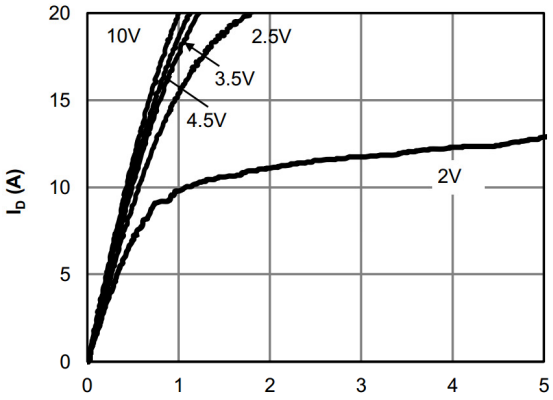


Figure 1: On-Region Characteristics

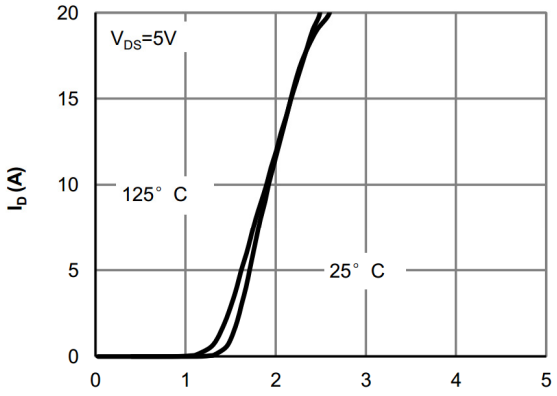


Figure 2: Transfer Characteristics

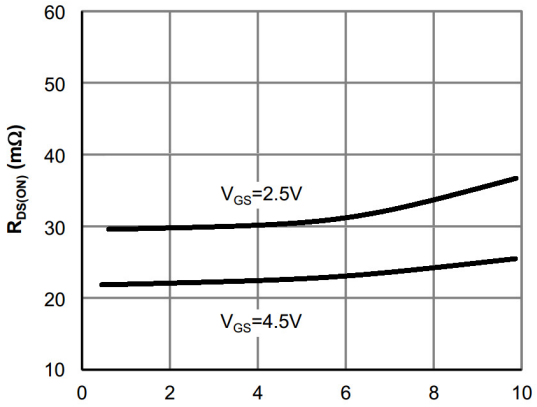


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

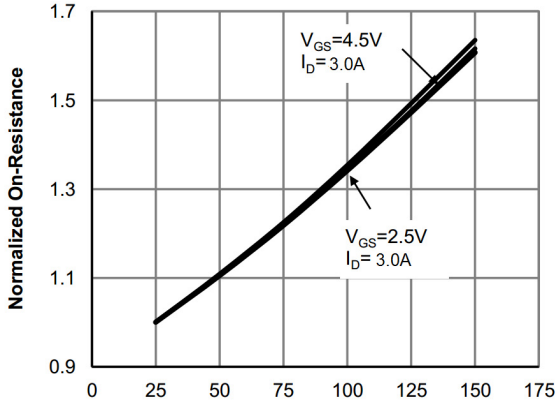


Figure 4: On-Resistance vs. Junction Temperature

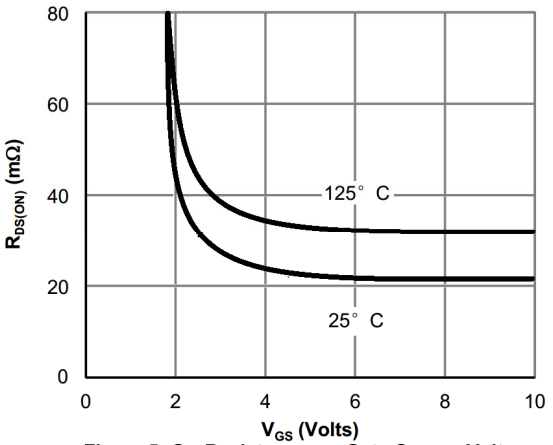


Figure 5: On-Resistance vs. Gate-Source Voltage

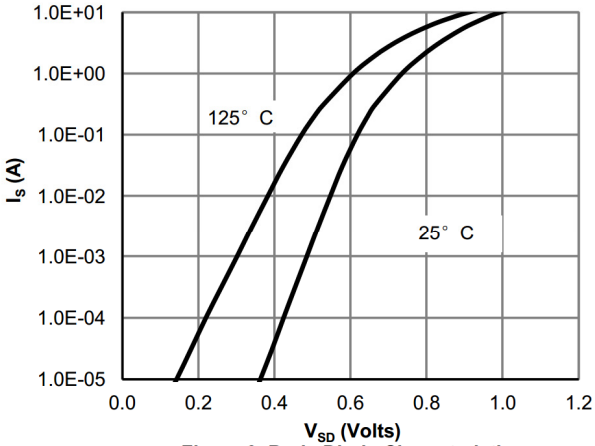


Figure 6: Body-Diode Characteristics

N-沟道电参数曲线图 / N-CHANNEL Electrical Characteristic Curve

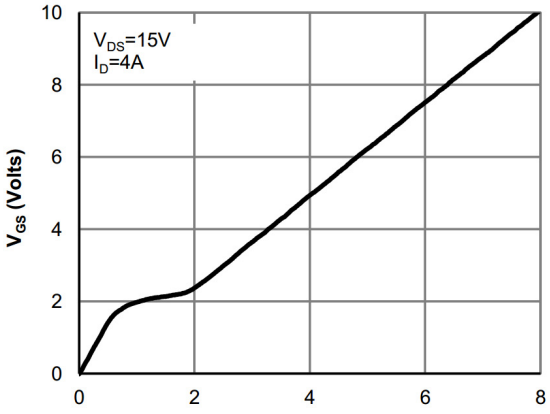


Figure 7: Gate-Charge Characteristics

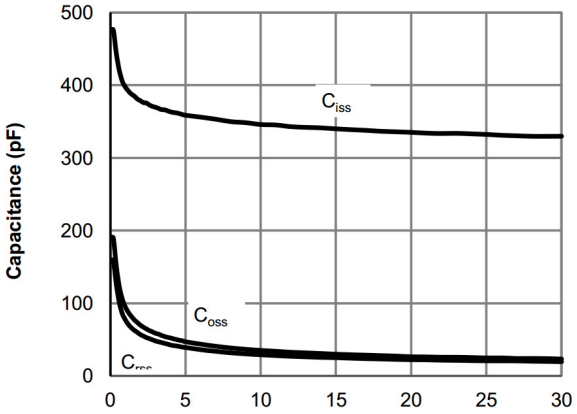


Figure 8: Capacitance Characteristics

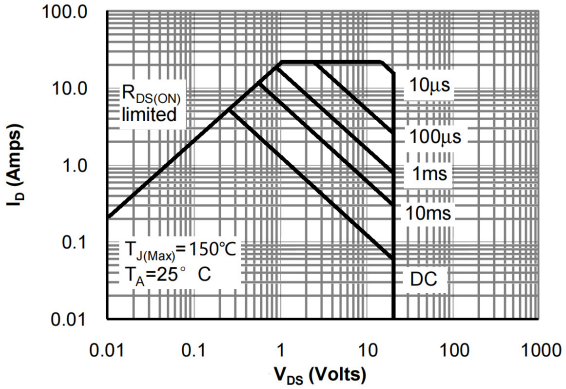


Figure 9: Maximum Forward Biased Safe Operating Area

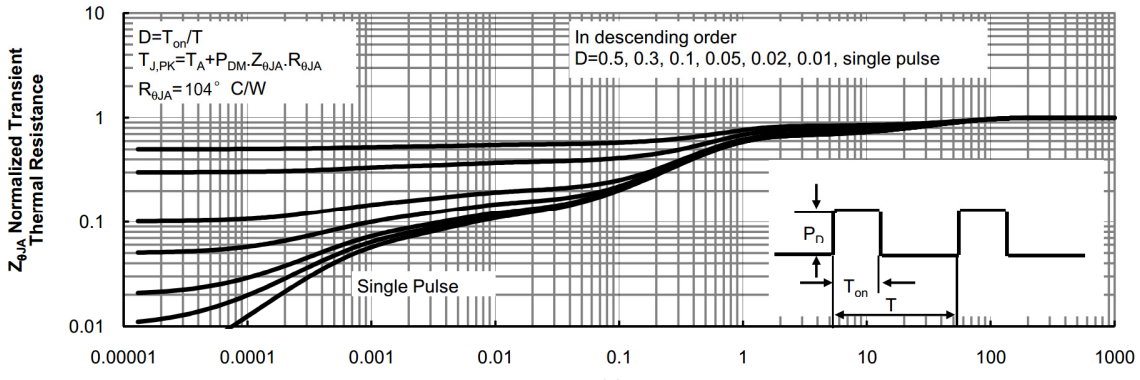


Figure 10: Normalized Maximum Transient Thermal Impedance

P-沟道电性能参数/P-CHANNEL 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	$V_{(BR)DSS}$	V_{GS}=0V I_D=-250μA	-20	-22		V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=-250μA	-0.5	-0.7	-1.0	V
Static Drain–Source On–Resistance	$R_{DS(on)}$	V_{GS}=-4.5V I_D=-2.8A		78	100	mΩ
	$R_{DS(on)}$	V_{GS}=-2.5V I_D=-2.0A		107	150	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V V_{GS}=0V			-1	μA
Gate–Body Leakage	I_{GSS}	V_{GS}=±12V V_{DS}=0V			±0.1	μA
Drain–Source Diode Forward Voltage	V_{SD}	I_S=-1.0A V_{GS}=0V			-1.2	V
Input Capacitance	C_{iss}	V_{DS}=-10V, V_{GS}=0V f=1MHz		330		pF
Output Capacitance	C_{oss}			65		
Reverse Transfer Capacitance	C_{rss}			40		
Total Gate Charge	Q_g	V_{DS}=-10V V_{GS}=-4.5V I_D=-2.8A		3.3		nC
Gate-to-Source Charge	Q_{gs}			0.8		
Gate-to-Drain Charge	Q_{gd}			1.5		
Turn–On Delay Time	$t_{d(on)}$	V_{DS}=-10V V_{GS}=-10V R_L=2.8Ω R_{GEN}=3Ω		12		ns
Turn–On Rise Time	t_r			5.7		
Turn–Off Delay Time	$t_{d(off)}$			23		
Turn–Off Fall Time	t_f			8.5		

P-沟道电参数曲线图 / P-CHANNEL Electrical Characteristic Curve

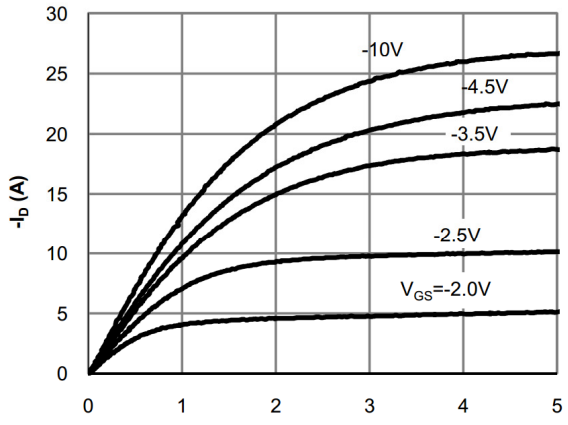


Fig 1: On-Region Characteristics

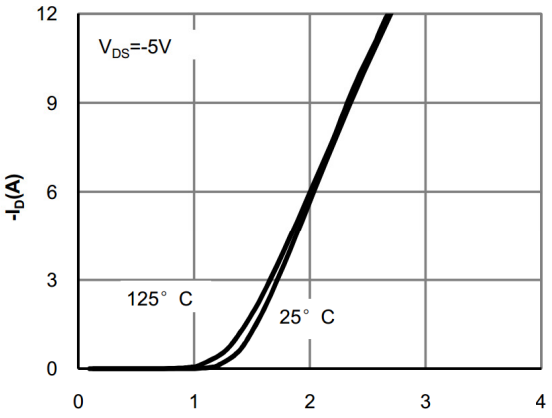


Figure 2: Transfer Characteristics

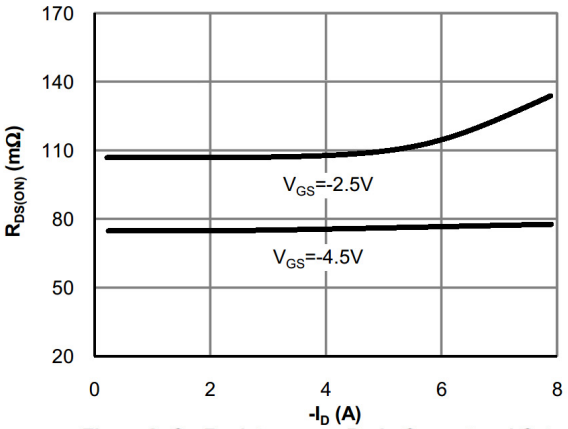


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

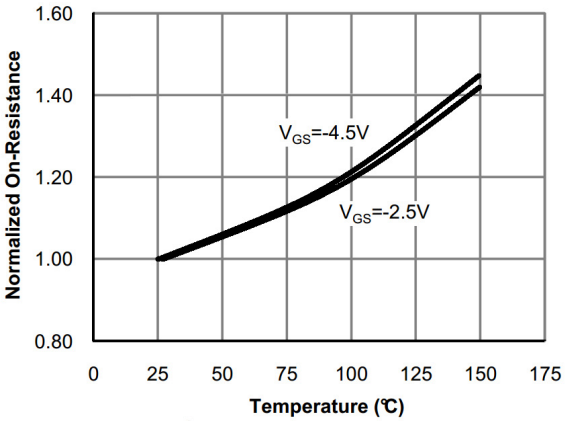


Figure 4: On-Resistance vs. Junction Temperature

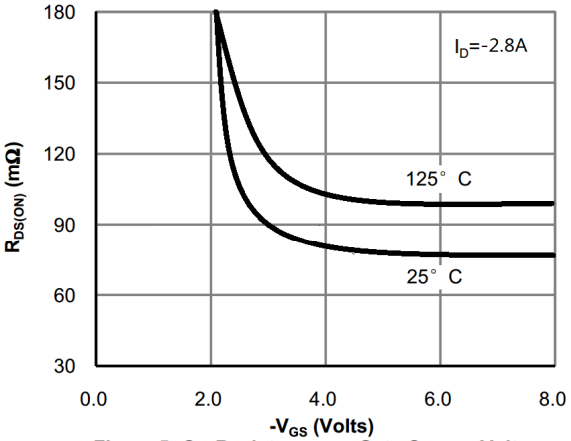


Figure 5: On-Resistance vs. Gate-Source Voltage

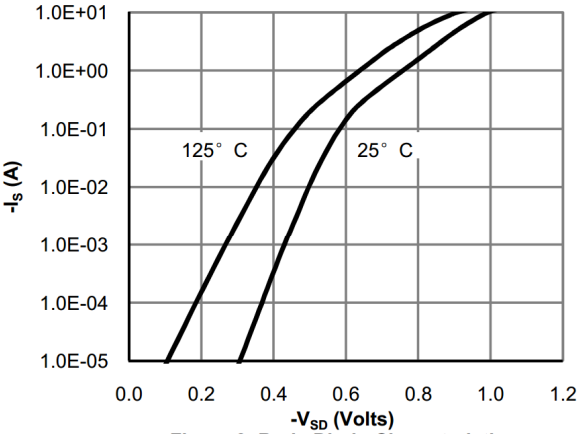


Figure 6: Body-Diode Characteristics

P-沟道电参数曲线图 / P-CHANNEL Electrical Characteristic Curve

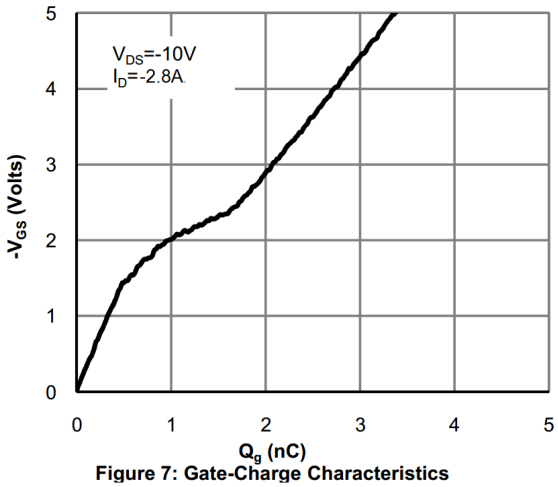


Figure 7: Gate-Charge Characteristics

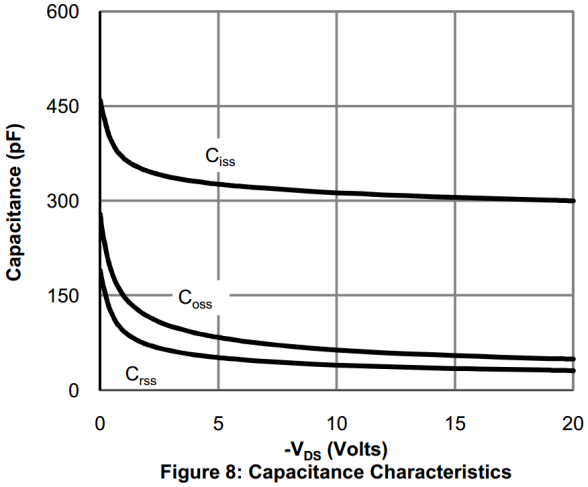


Figure 8: Capacitance Characteristics

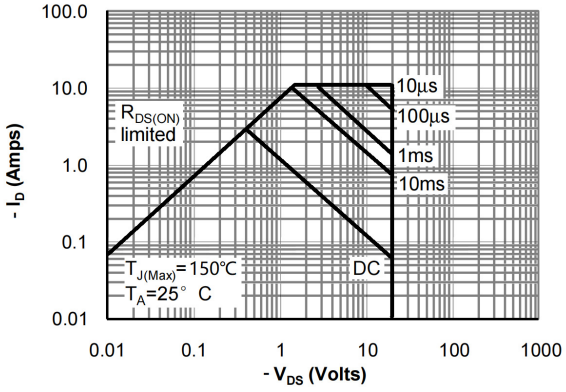


Figure 9: Maximum Forward Biased Safe Operating Area

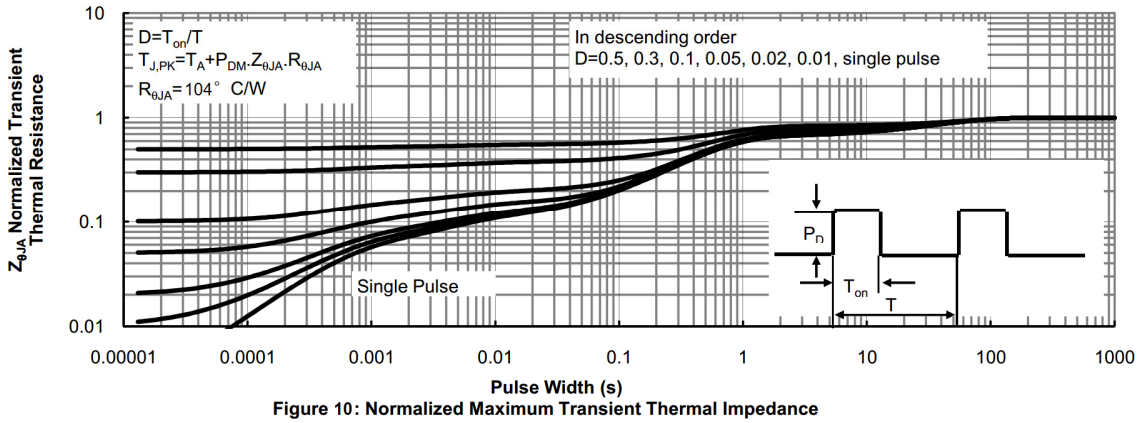
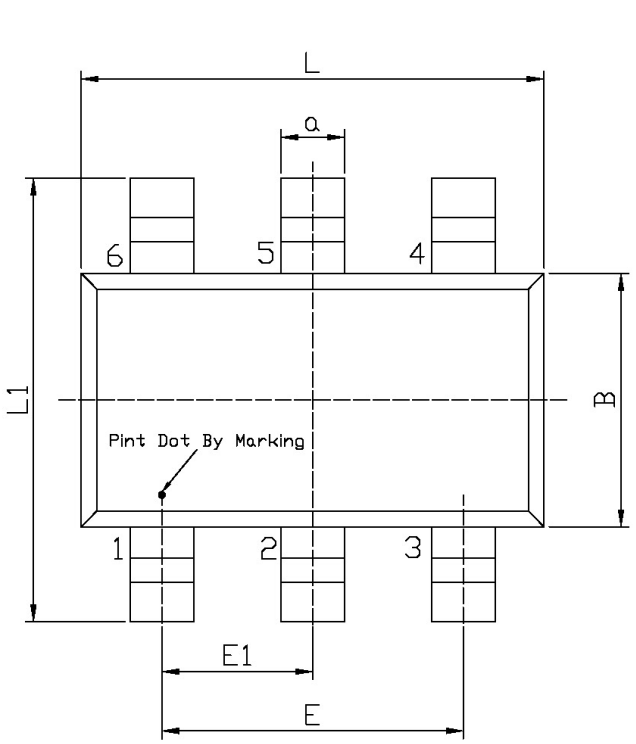
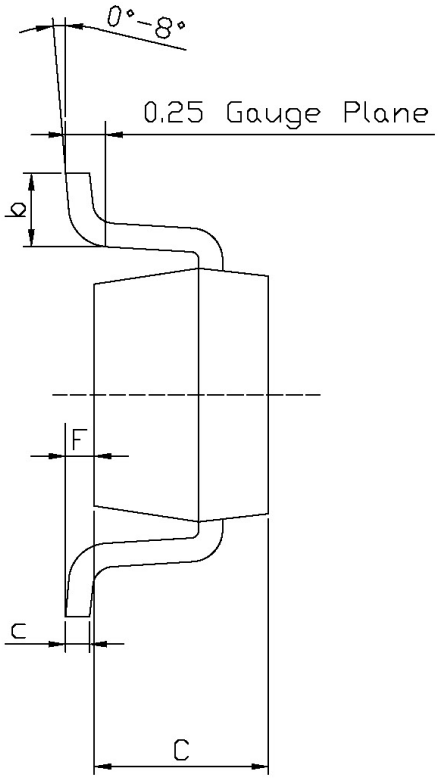


Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions



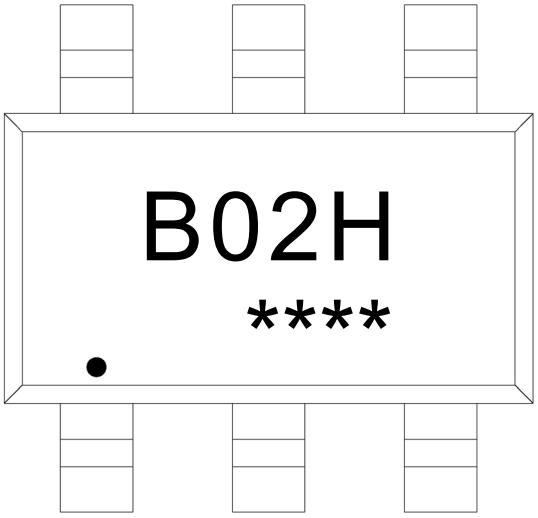


Unit: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.82	3.02	E1	0.85	1.05
B	1.50	1.70	a	0.35	0.50
C	0.90	1.30	c	0.10	0.20
L1	2.60	3.00	b	0.35	0.55
E	1.80	2.00	F	0	0.15

SOT23-6

印章说明 / Marking Instructions



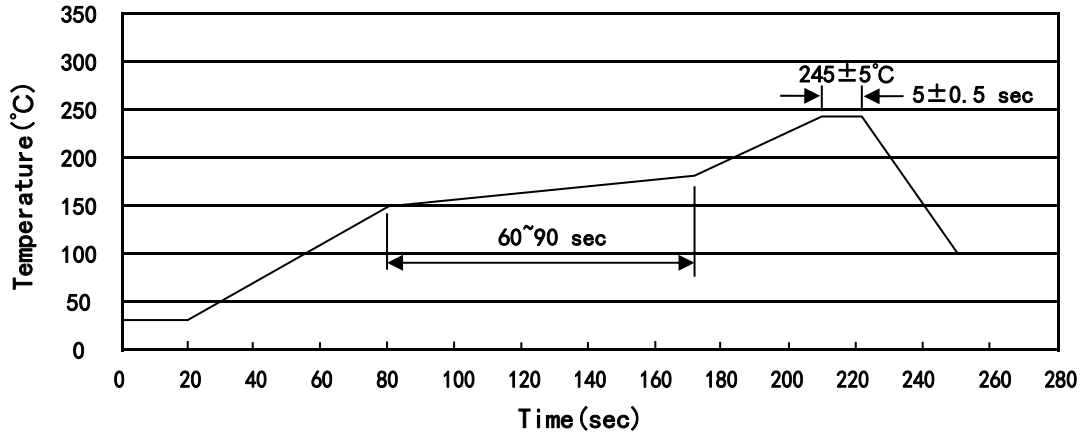
说明：

B02:	为型号代码
H：	为公司代码
****:	为生产批号代码，随生产批号变化

Note:

B02：	Product Type Code
H：	Company Code
****:	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：mm³)		
	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	445×435×230

使用说明 / Notices