

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

$V_{DS}(V)=30V$

$I_D=2.7A$

$R_{DS(ON)}@10V<80m\Omega(TYP. 66 m\Omega)$

$R_{DS(ON)}@4.5V<130m\Omega(TYP. 95 m\Omega)$

无卤产品。HF Product.

P-channel

$V_{DS}(V)=-30V$

$I_D=-2.6A$

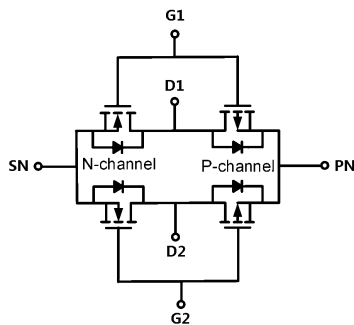
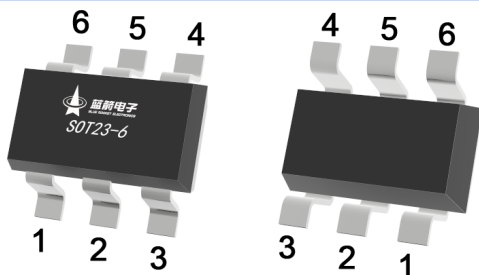
$R_{DS(ON)}@-10V<95 m\Omega(TYP. 75 m\Omega)$

$R_{DS(ON)}@-4.5V<150 m\Omega(TYP. 88 m\Omega)$

用途 / Applications

PWM 应用, 负载开关。

PWM applications, Load switch.

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

PIN1 : G1 PIN 2 : SN PIN 3 : G2

PIN 4 : D2 PIN 5 : SP 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°C)

参数 Parameter	符号 Symbol	数值 Rating		单位 Unit
		N-channel	P-channel	
Drain-Source Voltage	V_{DSS}	30	-30	V
Gate-Source Voltage	V_{GSS}	± 20		V
Continuous Drain Current	I_D	2.7	-2.6	A
Pulsed Drain Current	I_{DM}	7	-7	A
Power Dissipation	P_D	1		W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150		°C
Maximum Junction-to-Ambient	$R_{\theta JA}$	125		°C/W

N-沟道电性能参数/N-CHANNEL 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}	$V_{GS}=0$ $I_D=250\mu A$	30	31.5		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0$ $V_{DS}=24V$			1.0	μA
Gate-Body Leakage.	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Static Drain-Source On-Resistance	$R_{DS(on)1}$	$V_{GS}=10V$ $I_D=2.0A$		66	80	m Ω
	$R_{DS(on)2}$	$V_{GS}=4.5V$ $I_D=1.0A$		95	130	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_D=1.0A$			1.2	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0	1.45	2.0	V
Input Capacitance	C_{iss}	$V_{DS}=15V$ $V_{GS}=0V$ $f=1.0MHz$		200		pF
Output Capacitance	C_{oss}			30		pF
Reverse Transfer Capacitance	C_{rss}			20		pF
Total Gate Charge	Q_g	$V_{GS}=10V$, $I_D=2A$ $V_{DS}=15V$		5		nC
Gate Source Charge	Q_{gs}			0.8		
Gate Drain Charge	Q_{gd}			1.7		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=15V$ $R_{GEN}=6\Omega$ $I_D=1A$		4		ns
Turn-On Rise Time	t_r			11		
Turn-Off Delay Time	$t_{d(off)}$			9		
Turn-Off Fall Time	t_f			2.2		

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

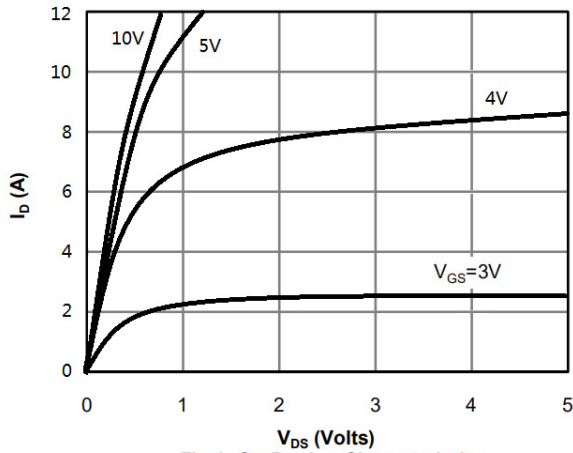


Fig 1: On-Region Characteristics

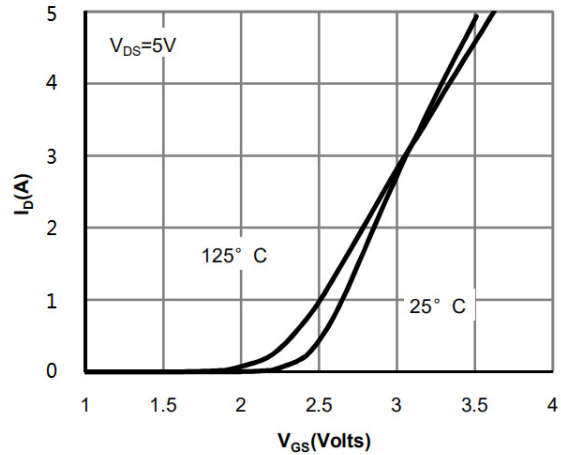


Figure 2: Transfer Characteristics

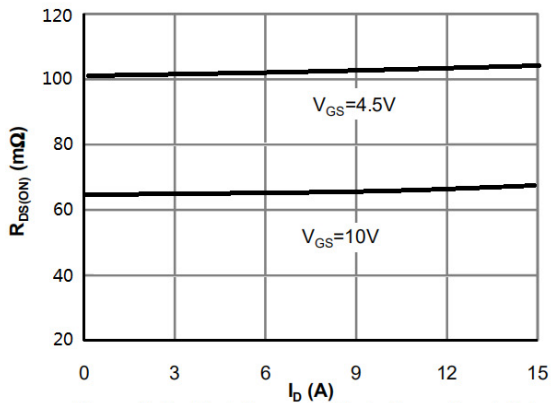


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

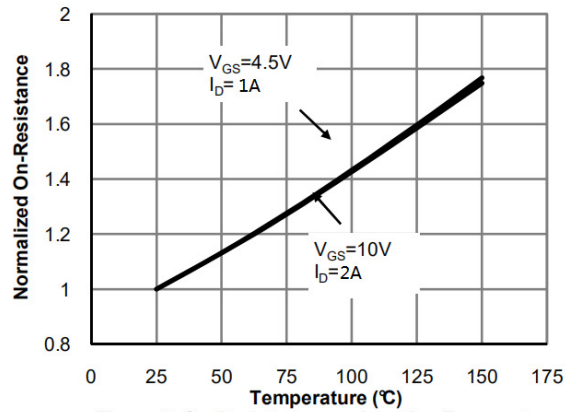


Figure 4: On-Resistance vs. Junction Temperature

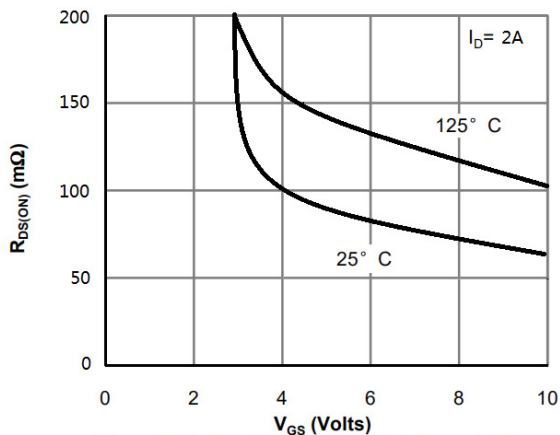


Figure 5: On-Resistance vs. Gate-Source Voltage

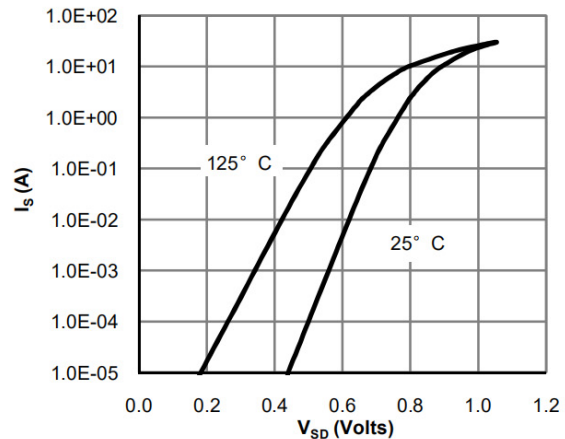
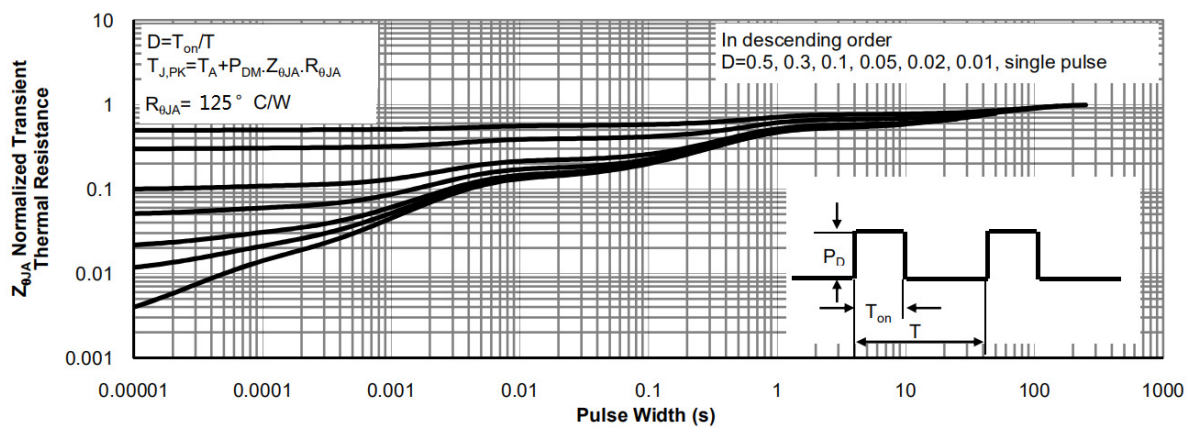
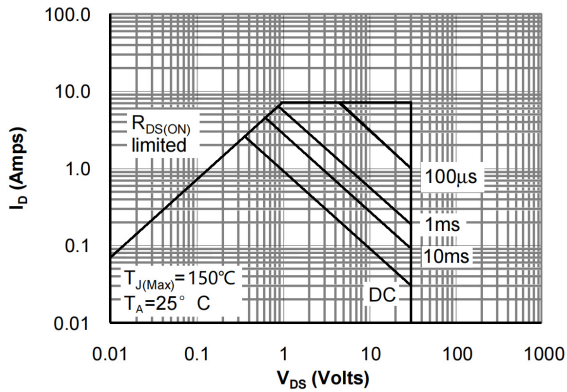
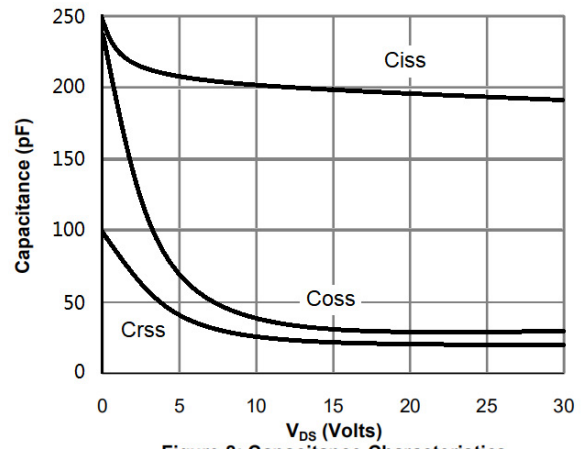
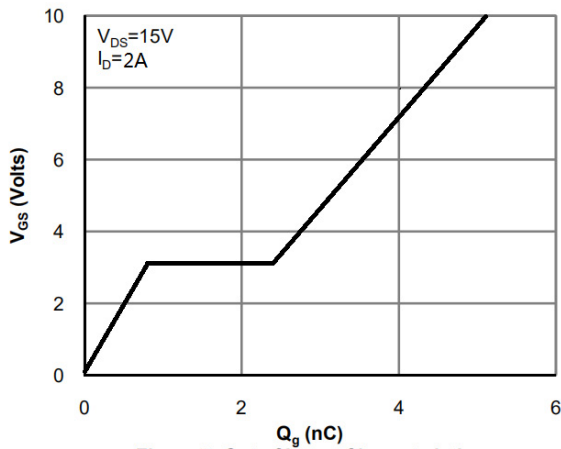


Figure 6: Body-Diode Characteristics

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



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	$V_{(BR)DSS}$	$V_{GS}=0V$ $I_D=-250\mu A$	-30	-31.5		V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-0.5	-0.85	-2.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V$ $I_D=-2A$		75	95	mΩ
	$R_{DS(on)}$	$V_{GS}=-4.5V$ $I_D=-1.5A$		88	150	mΩ
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-24V$ $V_{GS}=0V$			-1	μA
Gate-Body Leakage	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			±0.1	μA
Drain-Source Diode Forward Voltage	V_{SD}	$I_S=-1.0A$ $V_{GS}=0V$			-1.2	V
Input Capacitance	C_{iss}	$V_{DS}=-15V$, $f=1MHz$ $V_{GS}=0V$		250		pF
Output Capacitance	C_{oss}			50		
Reverse Transfer Capacitance	C_{rss}			40		
Total Gate Charge	Q_g	$V_{DS}=-15V$ $V_{GS}=-10V$ $I_D=-2A$		7.2		nC
Gate-to-Source Charge	Q_{gs}			1.1		
Gate-to-Drain Charge	Q_{gd}			1.6		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=-15V$ $V_{GS}=-10V$ $R_{GEN}=6\Omega$ $I_D=2A$		7.5		ns
Turn-On Rise Time	t_r			11.8		
Turn-Off Delay Time	$t_{d(off)}$			17		
Turn-Off Fall Time	t_f			6		

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

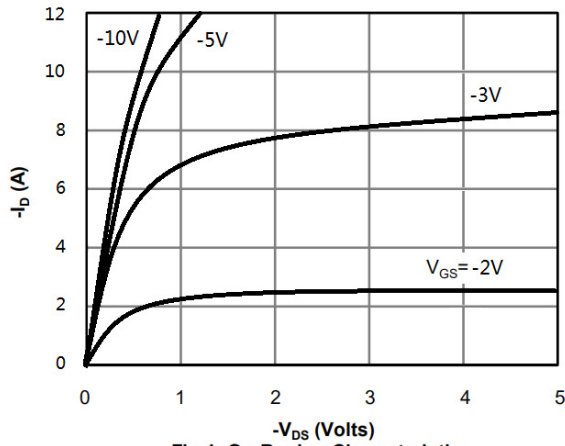


Fig 1: On-Region Characteristics

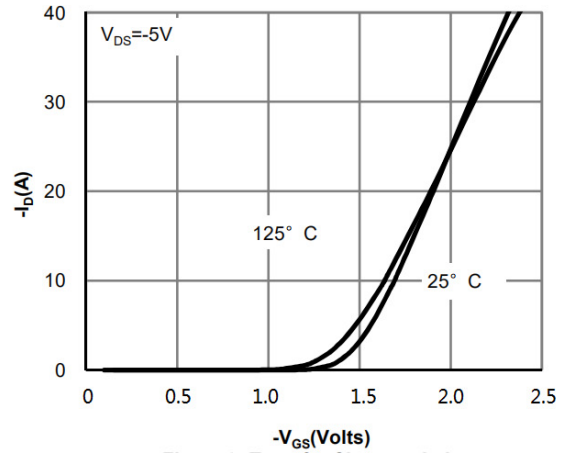


Figure 2: Transfer Characteristics

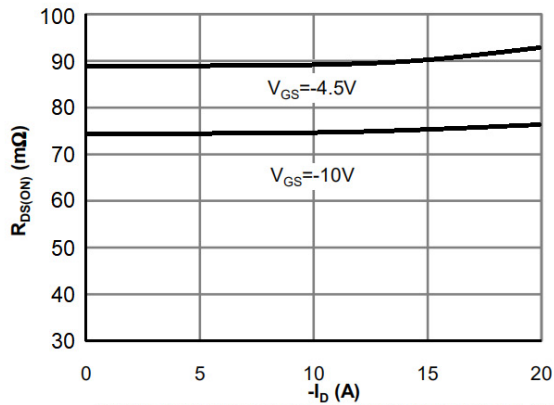


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

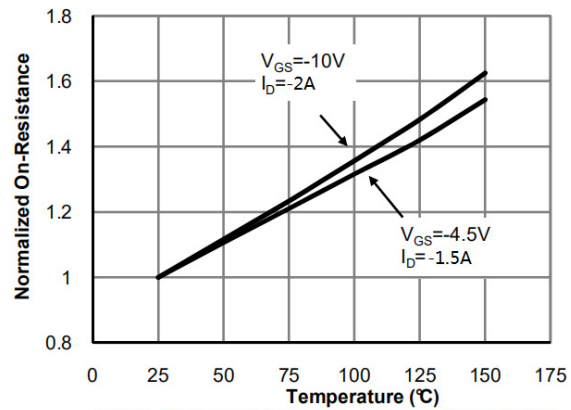


Figure 4: On-Resistance vs. Junction Temperature

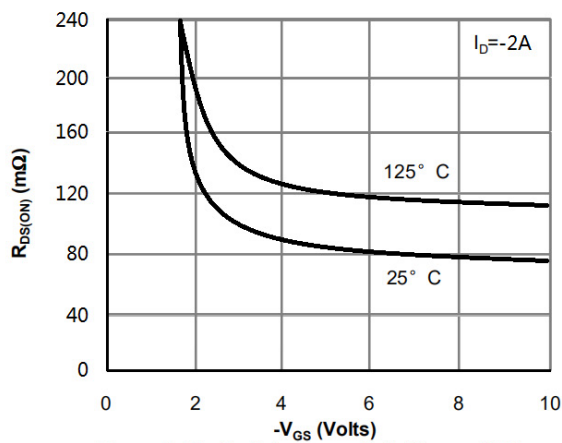


Figure 5: On-Resistance vs. Gate-Source Voltage

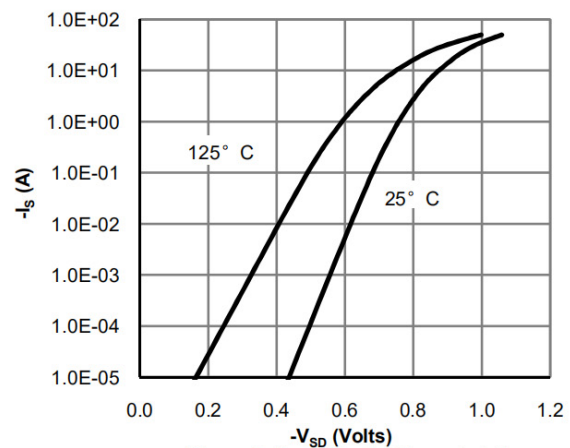


Figure 6: Body-Diode Characteristics

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

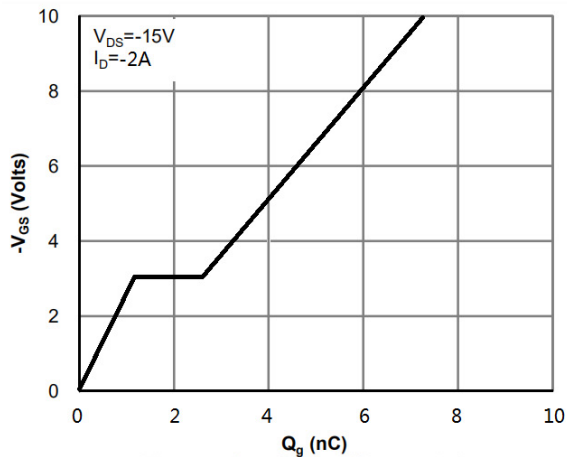


Figure 7: Gate-Charge Characteristics

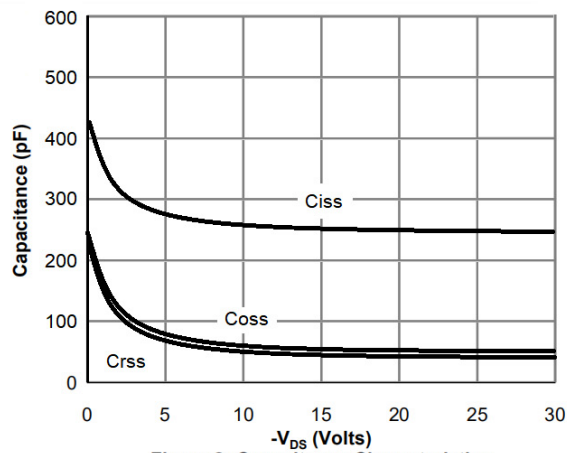


Figure 8: Capacitance Characteristics

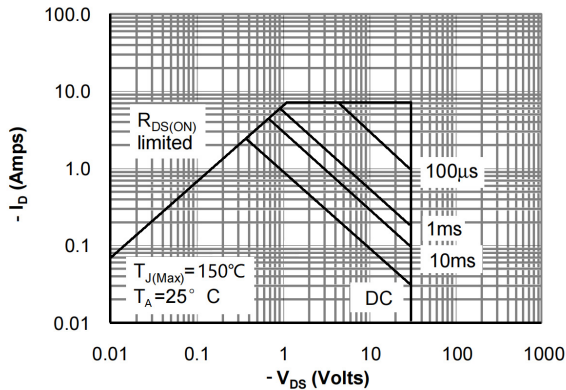


Figure 9: Maximum Forward Biased Safe Operating Area

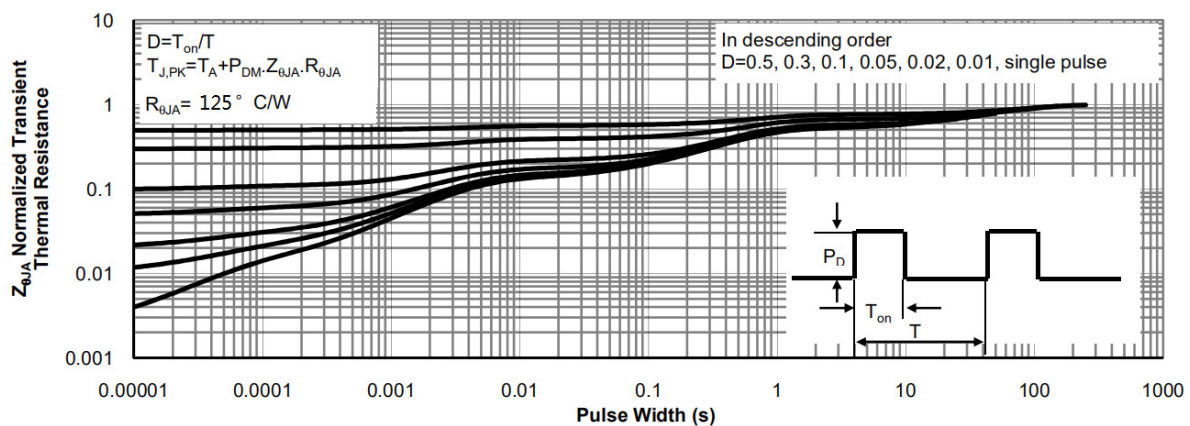
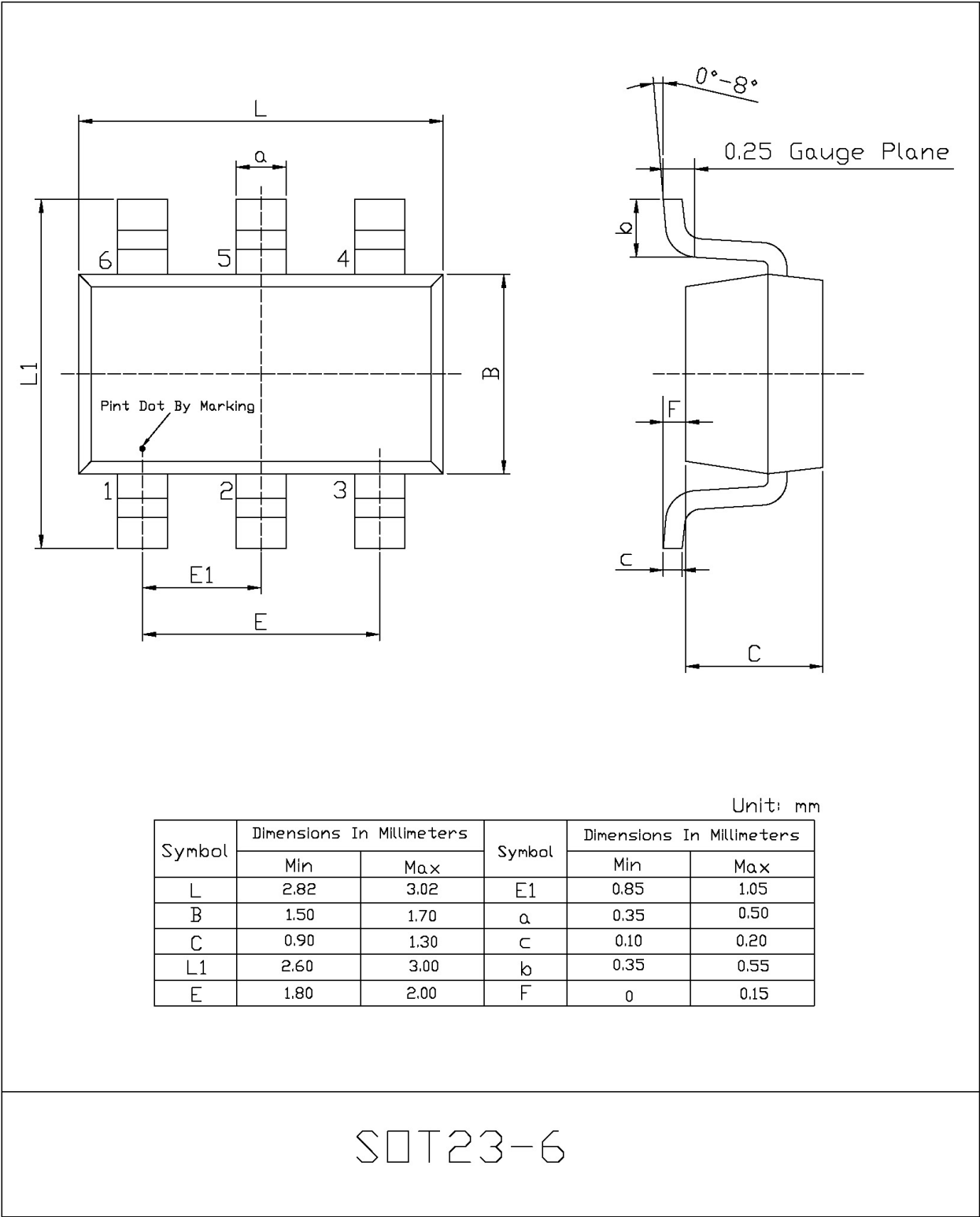


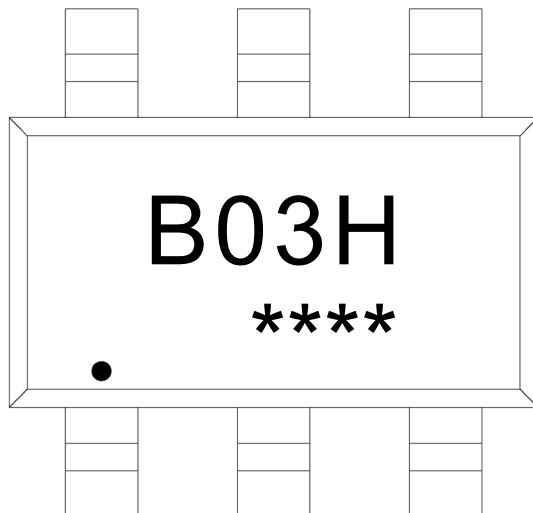
Figure 10: Normalized Maximum Transient Thermal Impedance

外形尺寸图 / Package Dimensions





印章说明 / Marking Instructions



说明：

B03: 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

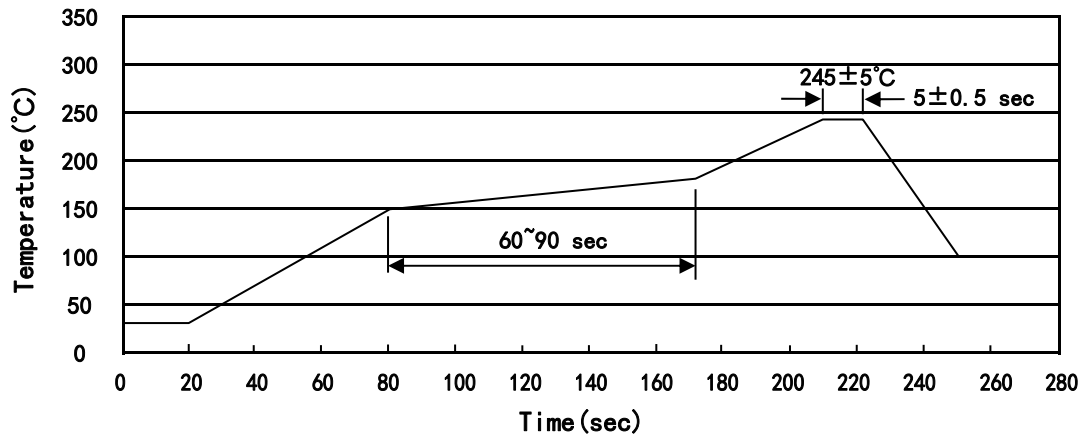
Note:

B03 : 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°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	445×435×230

使用说明 / Notices