

描述 / Descriptions

SOT-23 塑封封装 N 沟道 MOS 场效应管。N-CHANNEL MOSFET in a SOT-23 Plastic Package.

特征 / Features

极低的 $R_{DS(ON)}$ 为高密度电路设计，无卤产品。

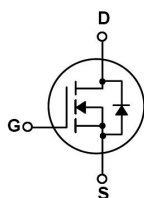
High density cell design for extremely low $R_{DS(ON)}$, HF Product.

用途 / Applications

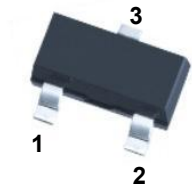
适用于作负载开关或脉宽调制应用。

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



PIN1 : G

PIN 2 : S

PIN 3 : D

印章代码 / Marking

Marking	HSA
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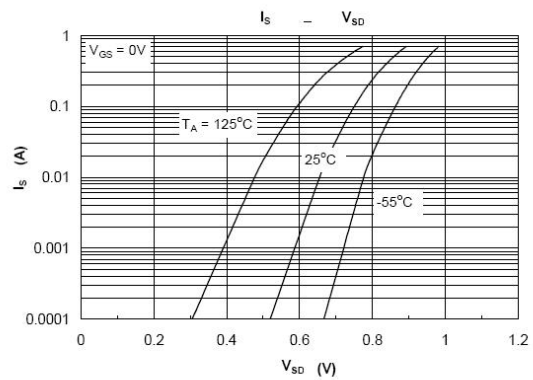
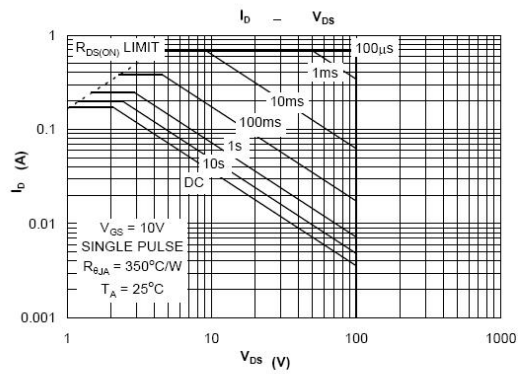
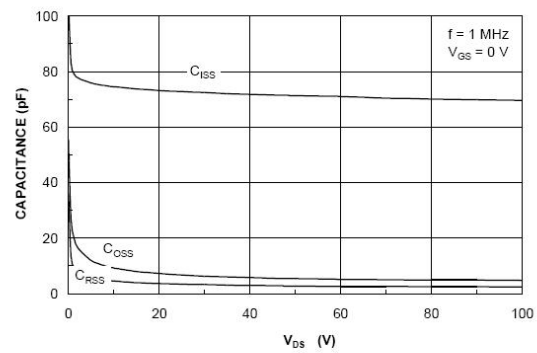
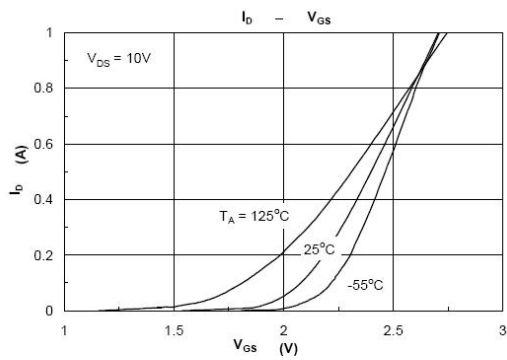
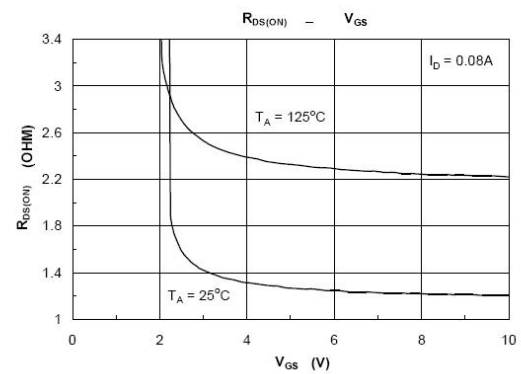
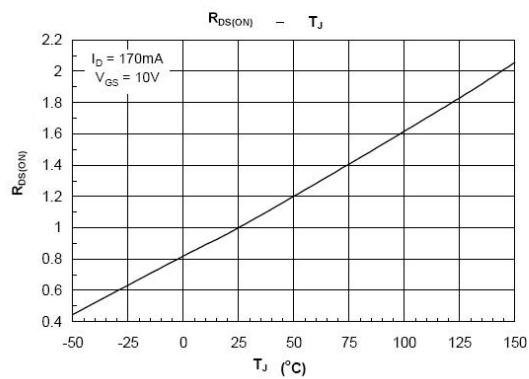
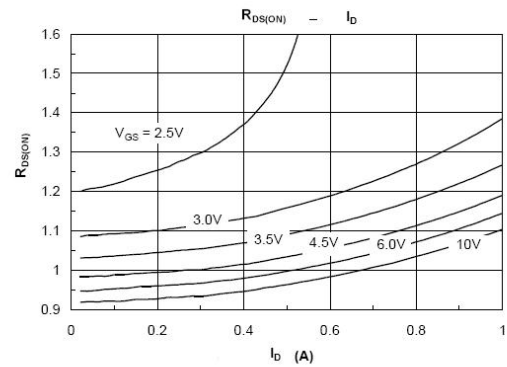
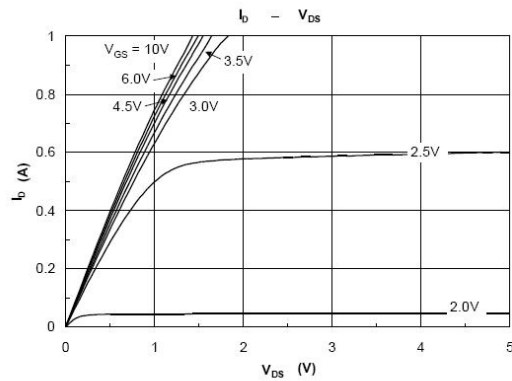
极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DSS}	100	V
Drain Current – Continuous	I_D	170	mA
Drain Current– Pulsed	$I_D(T_C=25^{\circ}C)$	680	mA
Continuous Drain–Source	I_S	170	mA
Gate-Source Voltage	V_{GS}	± 20	V
Power Dissipation	P_D	0.36	W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	350	$^{\circ}C/W$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-55 to 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}	$V_{GS}=0V$ $I_D=250\mu A$	100			V
Zero Gate Voltage Drain Current	$I_{DSS(1)}$	$V_{DS}=100V$ $V_{GS}=0V$			1.0	μA
	$I_{DSS(2)}$	$V_{DS}=100V$ $V_{GS}=0V$ $T_J=125^{\circ}C$			60	μA
	$I_{DSS(3)}$	$V_{DS}=20V$ $V_{GS}=0V$			10	nA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=\pm 20$ $V_{DS}=0V$			± 50	nA
On–State Drain Current	$I_{D(on)}$	$V_{DS}=5.0V$ $V_{GS}=10V$	0.68			A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=1.0mA$	0.8	1.7	2.0	V
Static Drain–Source On–Resistance	$R_{DS(on)(1)}$	$V_{GS}=10V$ $I_D=0.17A$		1.2	6.0	Ω
	$R_{DS(on)(2)}$	$V_{GS}=4.5V$ $I_D=0.17A$		1.3	10	Ω
	$R_{DS(on)(3)}$	$V_{GS}=10V$ $I_D=0.17A$ $T_J=125^{\circ}C$		2.2	12	Ω
Forward Transconductance	g_{FS}	$V_{DS}=10V$ $I_D=0.17A$	0.08	0.8		S
Drain–Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=0.34A$		0.8	1.3	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		73		pF
Output Capacitance	C_{oss}			7		pF
Reverse Transfer Capacitance	C_{rss}			3.4		pF
Turn–On Delay Time	$t_{d(on)}$	$I_D=0.28A$ $V_{GS}=10V$ $V_{DD}=30V$ $R_G=6.0\Omega$		1.7	3.4	ns
Turn–On Rise Time	t_r			9	18	ns
Turn–Off Delay Time	$t_{d(off)}$			17	31	ns
Turn–Off Fall Time	t_f			2.4	5.0	ns

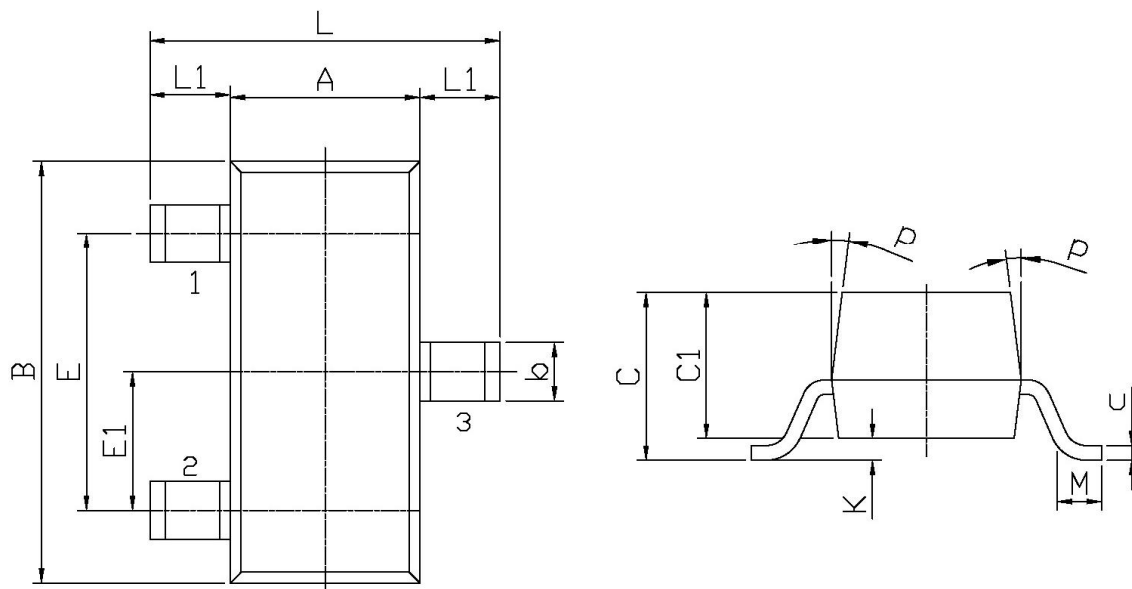
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

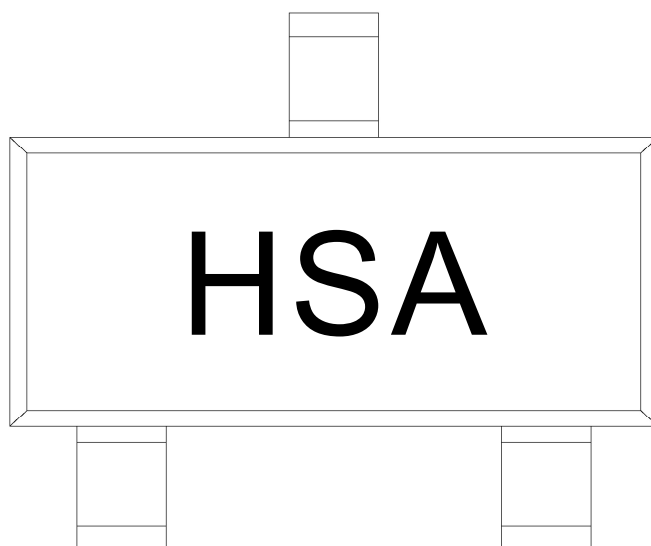
SOT-23

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.2	2.7	C	1.30Max	
L1	0.45	0.65	C1	0.90	1.20
A	1.15	1.50	c	0.05	0.20
B	2.70	3.10	K	0	0.10
E	1.70	2.10	M	0.20MIN	
E1	0.85	1.05	P	7°	
b	0.35	0.55			

印章说明 / Marking Instructions



说明：

H： 为公司代码

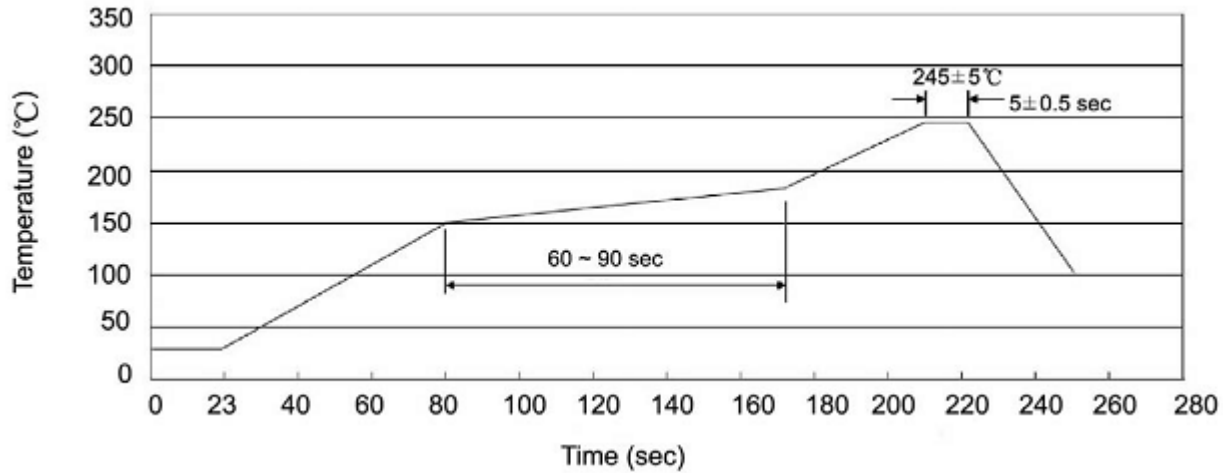
SA： 为型号代码

Note:

H: Company Code.

SA: Product Type.

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
SOT-23	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

使用说明 / Notices