

描述 / Descriptions

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

特征 / Features

高可靠性，适用无铅及绿色设备(符合 ROHS)，带 ESD 保护。

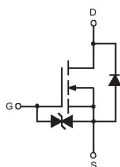
High Reliable;Lead Free and Green Devices Available(RoHS Compliant), ESD protected.

用途 / Applications

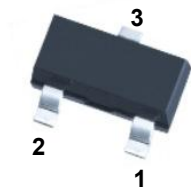
适用电视机等开关电源电路。

Power management in TV Inverter. Power Switch.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1 : Source

PIN 2 : Gate

PIN 3 : Drain

印章代码 / Marking

Marking	H4N1
---------	------

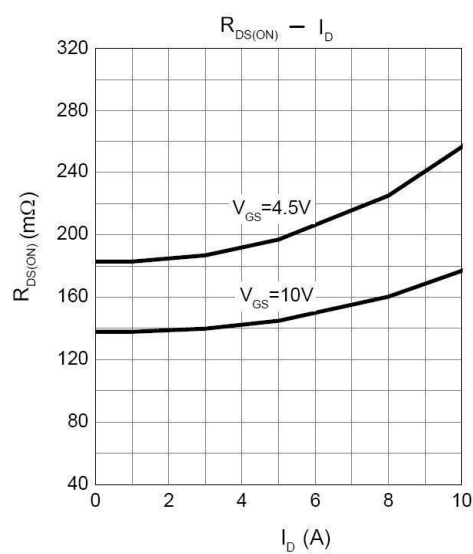
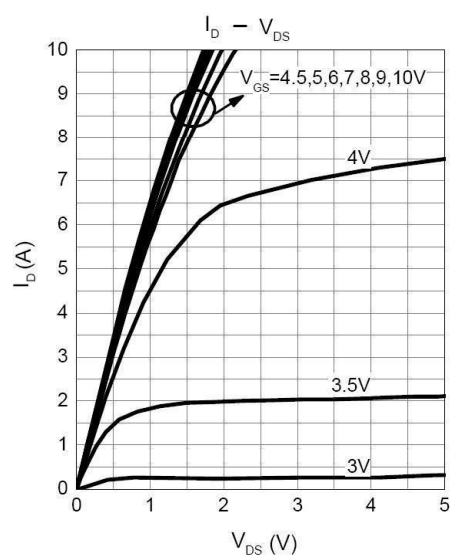
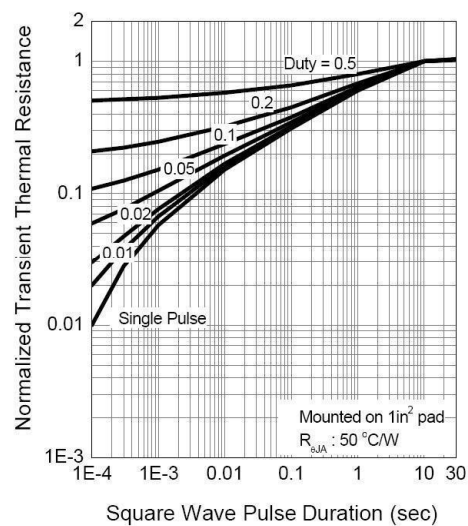
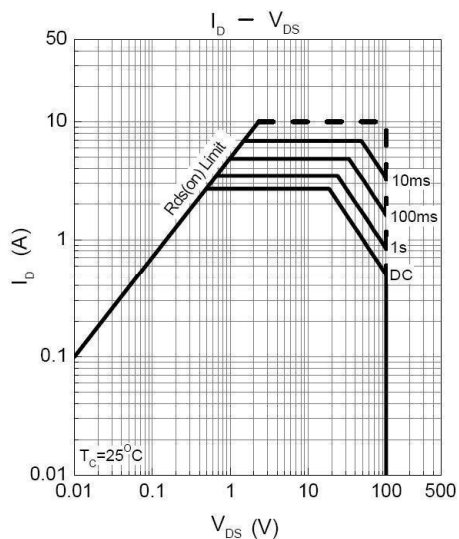
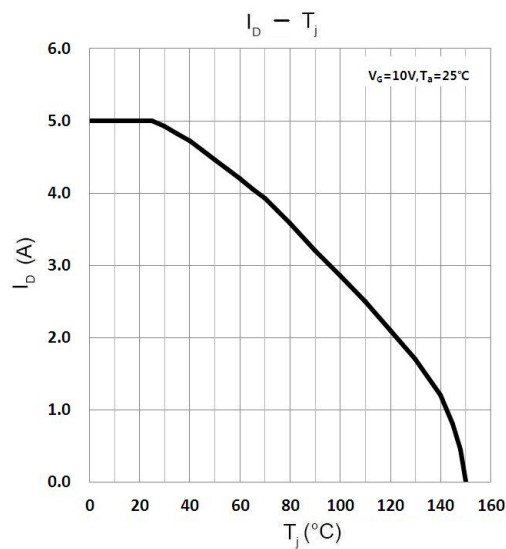
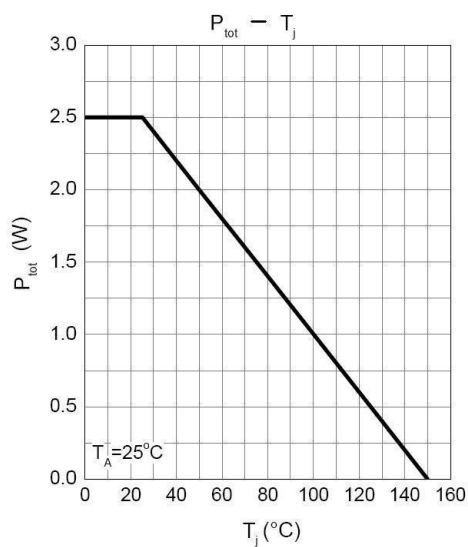
极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DS}	100	V
Drain Current- Pulsed	I_{DM}	20	A
Maximum Drain Current - Continuous	I_D	5.0	A
Gate Threshold Voltage	V_{GS}	± 20	V
Power Dissipation	P_D	0.83	W
Maximum Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C
Maximum Resistance –Junction to Ambient	$R_{\theta JA}$	150	°C/W

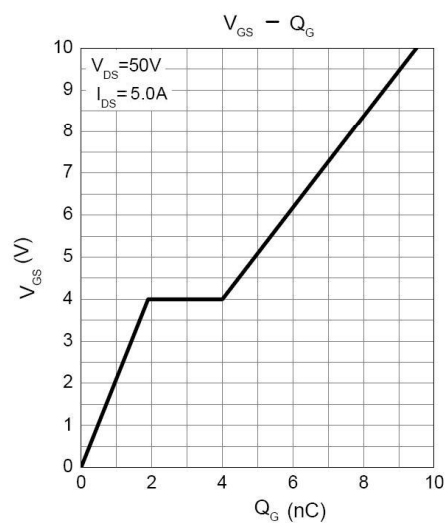
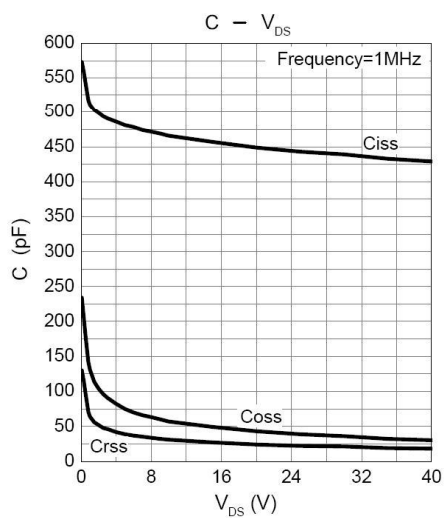
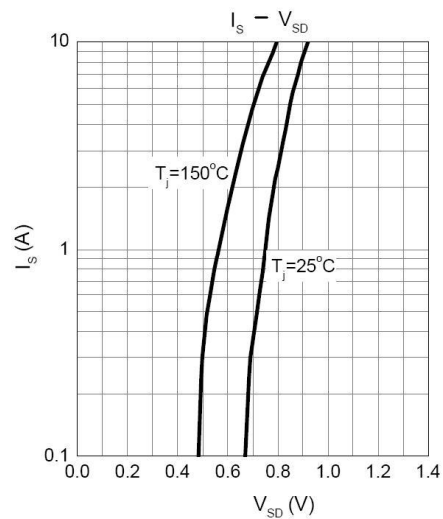
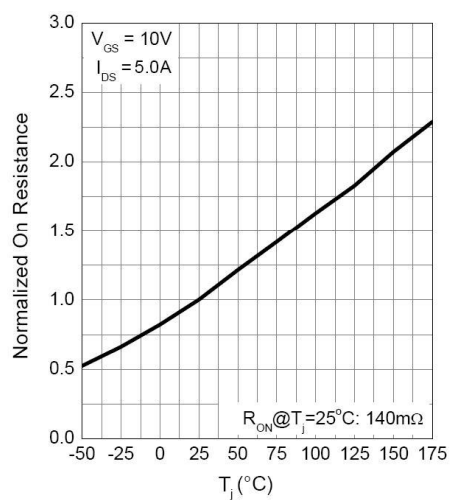
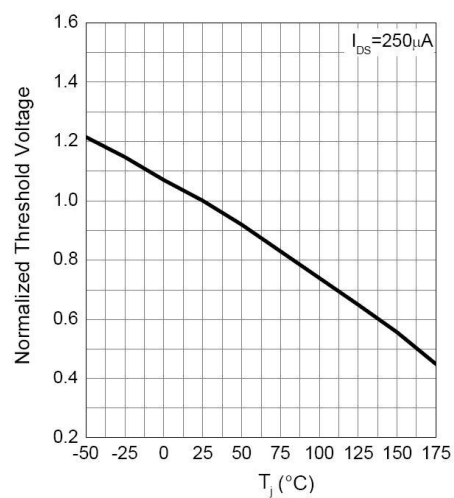
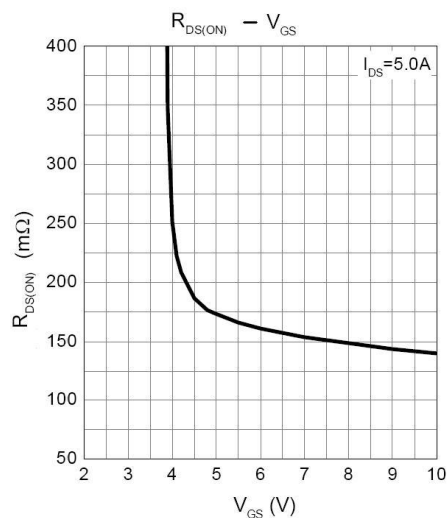
电性能参数 / Electrical Characteristics(Ta=25°C)

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}	$V_{GS}=0V$ $I_{DS}=250\mu A$	100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=80V$ $V_{GS}=0V$			1	μA
		$T_J=85^\circ C$			20	μA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=\pm 16V$ $V_{DS}=0V$			± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_{DS}=250\mu A$	1		3	V
Static Drain–Source On–Resistance	$R_{DS(on)(1)}$	$V_{GS}=4.5V$ $I_D=2A$			235	m Ω
	$R_{DS(on)(2)}$	$V_{GS}=10V$ $I_D=5A$			175	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_F=3A$		0.8	1.1	V
Reverse Recovery Time	T_{rr}	$I_{DS}=5A$ $dI_{SD}/dt=100A/\mu s$		36		ns
Reverse Recovery Charge	Q_{rr}			49		nC
Input Capacitance	C_{iss}	$V_{DS}=0V$ $V_{GS}=30V$ $f=1.0MHz$		440		pF
Output Capacitance	C_{oss}			36		pF
Reverse Transfer Capacitance	C_{rss}			20		pF
Turn–On Delay Time	$t_{d(on)}$	$I_{DS}=1A$ $V_{GEN}=10V$ $V_{DD}=30V$ $R_L=30\Omega$ $R_G=6\Omega$		11	21	ns
Turn–On Rise Time	t_r			10	19	ns
Turn–Off Delay Time	$t_{d(off)}$			21	39	ns
Turn–Off Fall Time	t_f			13	24	ns
Total Gate Charge	Q_g	$V_{DS}=50V$ $V_{GS}=10V$ $I_{DS}=5A$		9.5	13	nC
Gate- Source Charge	Q_{gs}			1.9		nC
Gate- Drain Charge	Q_{gd}			2.1		nC

电参数曲线图 / Electrical Characteristic Curve



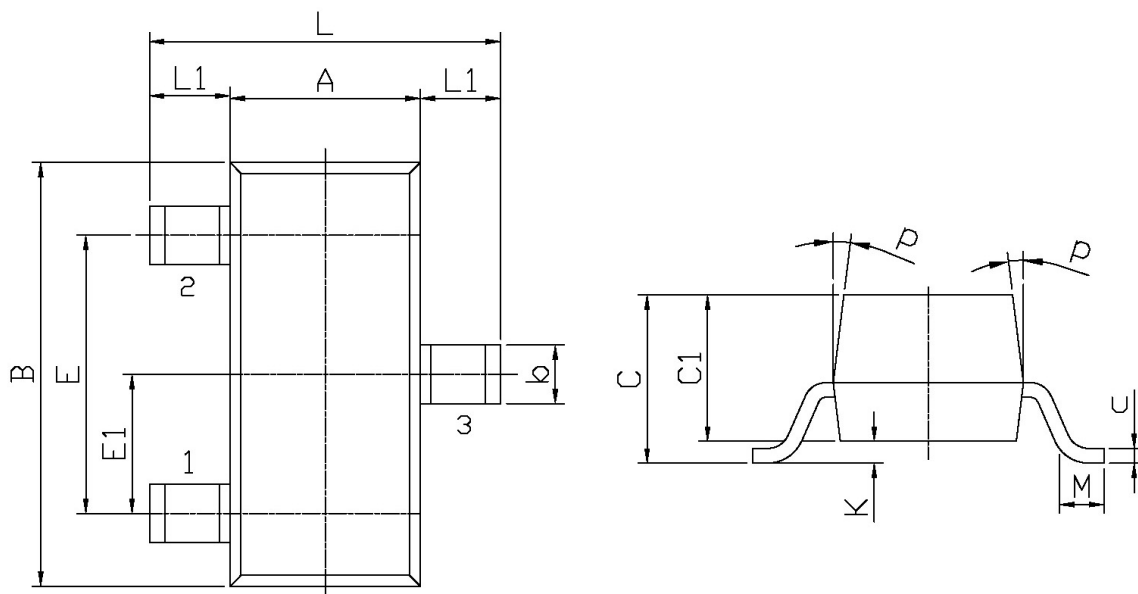
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

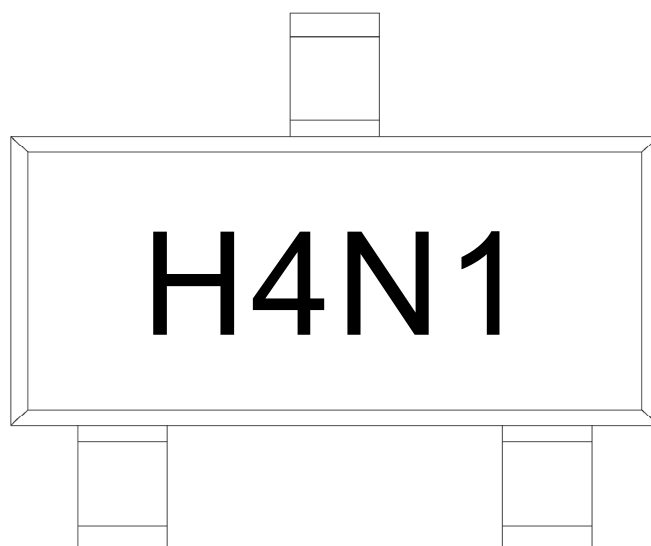
SOT-23

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

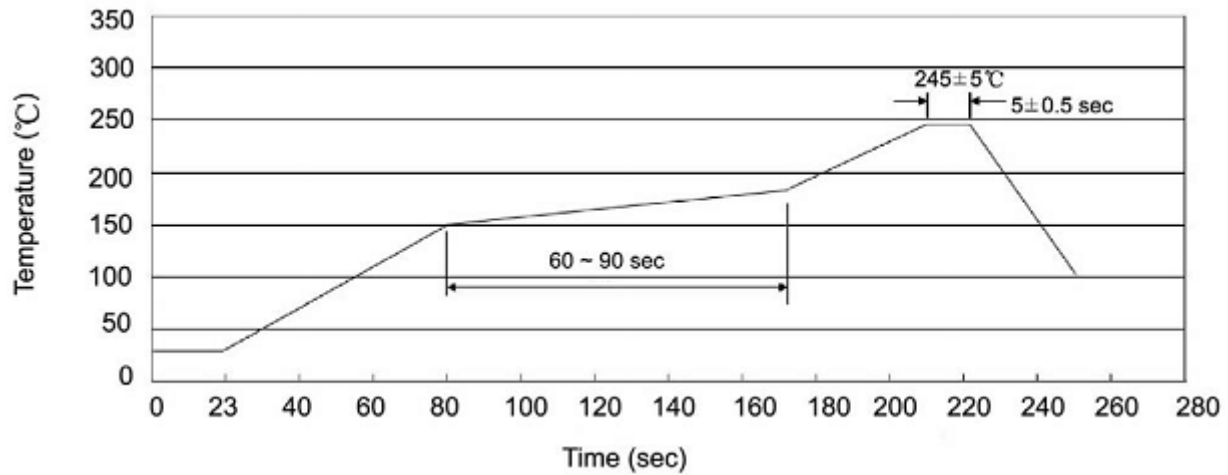
4N1： 为型号代码

Note:

H： Company Code.

4N1: Product Type 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 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	8	240,000	7" ×8	180×120×180	385×257×392

使用说明 / Notices