

描述 / Descriptions

SOT-323 塑封封装 P 沟 MOS 场效应管。P-Channel MOSFET in a SOT-323 Plastic Package.

特征 / Features

沟道场效应管。

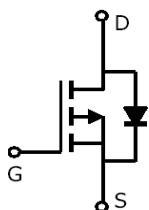
Trench FET Power MOSFETS.

用途 / Applications

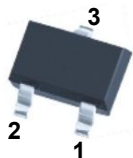
高速开关。

High speed switch.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN 1 : S

PIN 2 : G

PIN 3 : D

印章代码 / Marking

Marking	HD1
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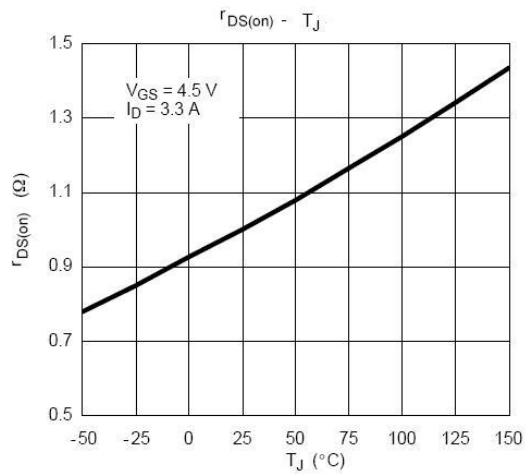
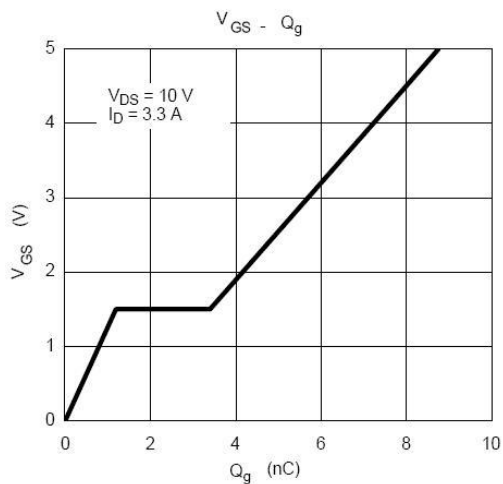
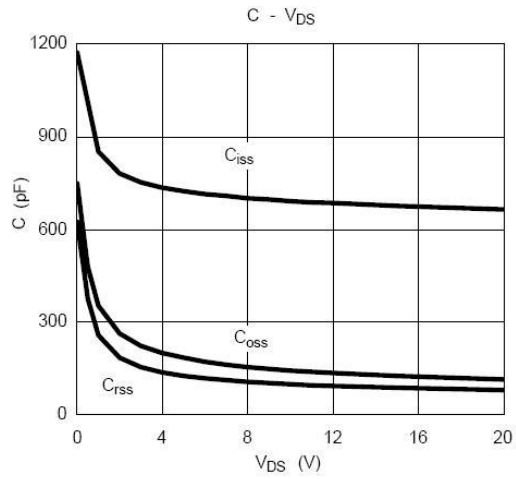
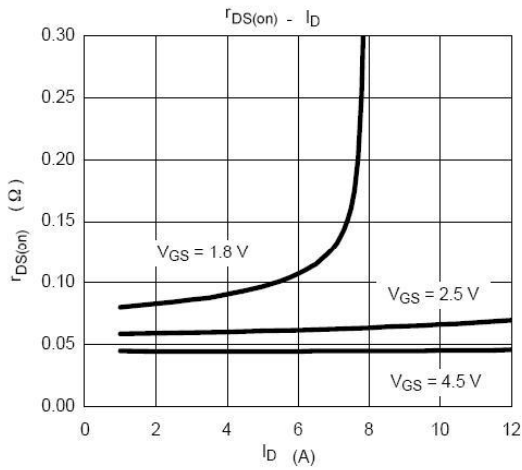
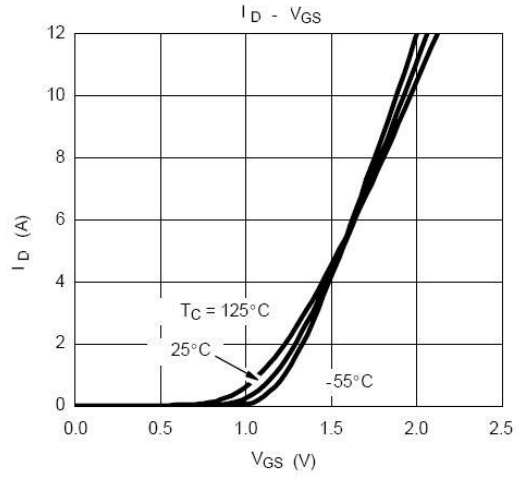
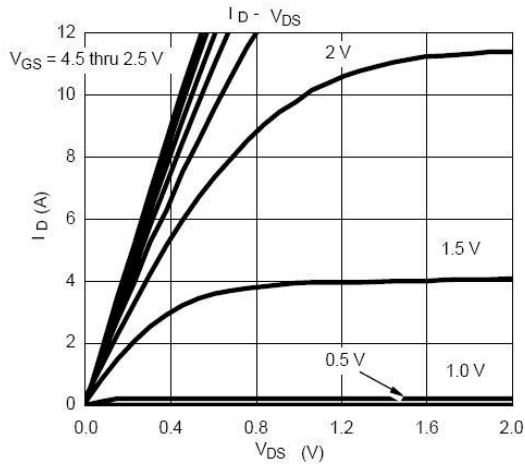
极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DSS}	-20	V
Gate-Source Voltage	V_{GSS}	± 12	V
Drain Current – Continuous	I_D	-4.3	A
Drain Current– Pulsed	I_{DM}	-15	A
Total power dissipation	P_D	625	mW
Storage Temperature Range	T_{stg}	-55~150	°C
Junction-to-Ambient	$R_{\theta JA}$	140	°C/W

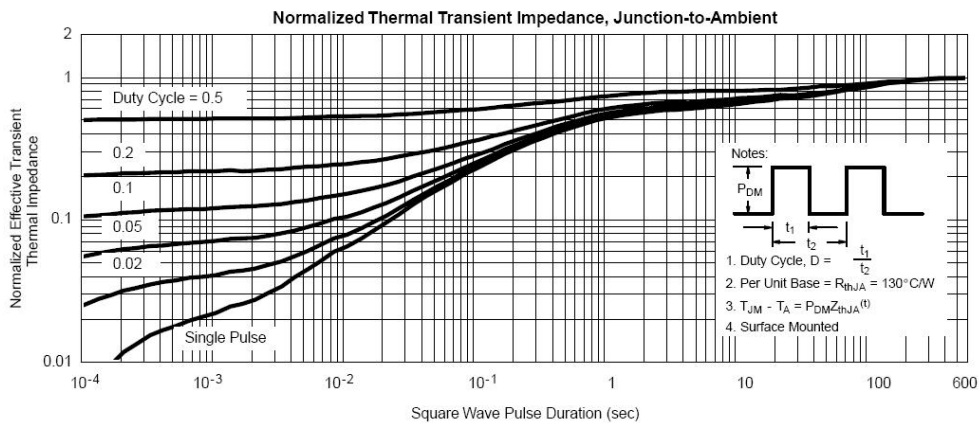
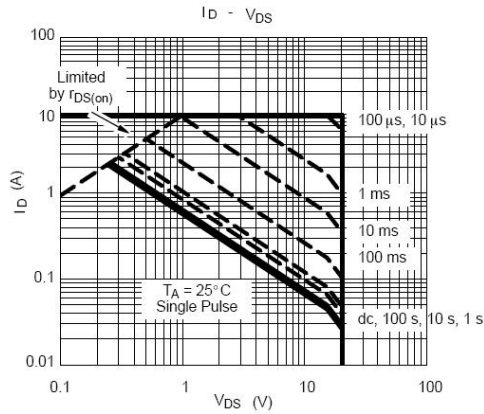
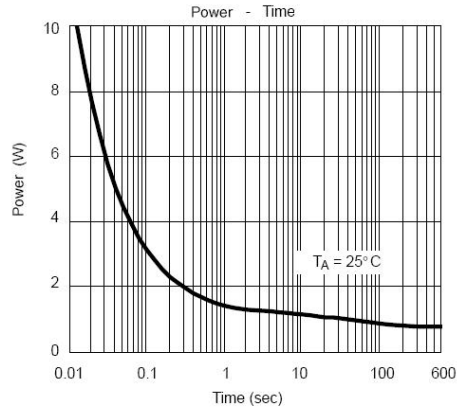
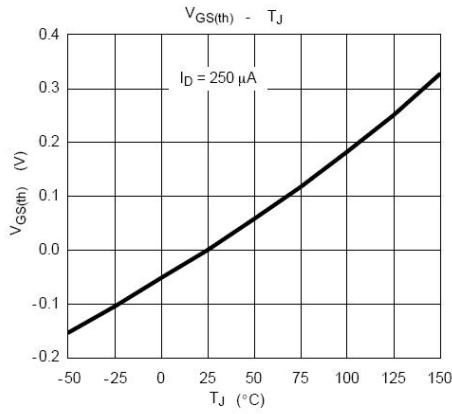
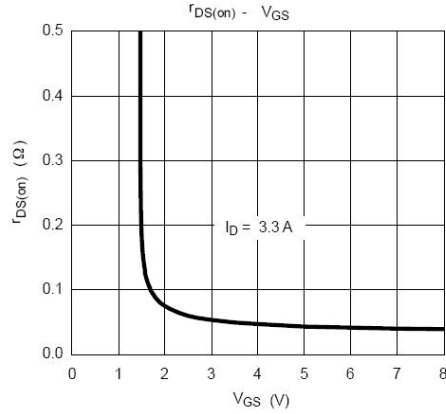
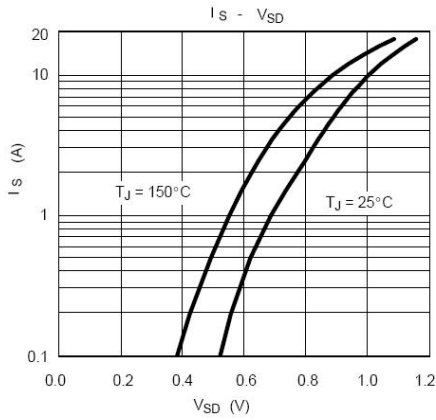
电性能参数 / Electrical Characteristics(Ta=25°C)

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	$V_{(BR)DSS}$	$V_{GS}=0V$ $I_D=-10\mu A$	-20			V
Gate threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-0.4		-1.0	V
Static Drain–Source On–Resistance	$R_{DS(on)1}$	$V_{GS}=-4.5V$ $I_D=-4.3A$		44	57	mΩ
	$R_{DS(on)2}$	$V_{GS}=-2.5V$ $I_D=-2.5A$		61	76	
	$R_{DS(on)3}$	$V_{GS}=-1.8V$ $I_D=-1.3A$		84	110	
Zero Gate Voltage Drain Current	I_{DSS}^1	$V_{DS}=16V$ $V_{GS}=0V$			-1	μA
	I_{DSS}^2	$V_{DS}=16V$ $V_{GS}=0V$ $T_j=55^\circ C$			-10	μA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=\pm 12V$ $V_{DS}=0V$			± 100	nA
Drain–Source Diode Forward Voltage	V_{SD}	$I_S=-1.6A$ $V_{GS}=0V$			-1.2	V
Forward Transconductance	g_{FS}	$V_{DS}=-5V$ $I_D=-3.3A$		3		S
Total Gate Charge	Q_g	$V_{DS}=-6V$ $I_D\approx -3.3A$ $V_{GS}=-4.5V$		8	13	nC
Gate-Source Charge	Q_{gs}			1.2		
Gate-Drain Charge	Q_{gd}			2.2		
Input Capacitance	C_{iss}	$V_{DS}=-6V$ $V_{GS}=0$ $F=1MHz$		715		pF
Output Capacitance	C_{oss}			170		
Reverse Transfer Capacitance	C_{rss}			120		
Turn–On Delay Time	$t_{d(on)}$	$V_{DD}=-6V$ $R_L=6\Omega$ $V_{GEN}=-4.5V$ $I_D\approx -1A$ $R_G=6\Omega$		15	25	ns
Turn–On Rise Time	t_r			35	55	
Turn–Off Delay Time	$t_{d(off)}$			60	90	
Turn–Off Fall Time	t_f			40	60	

电参数曲线图 / Electrical Characteristic Curve



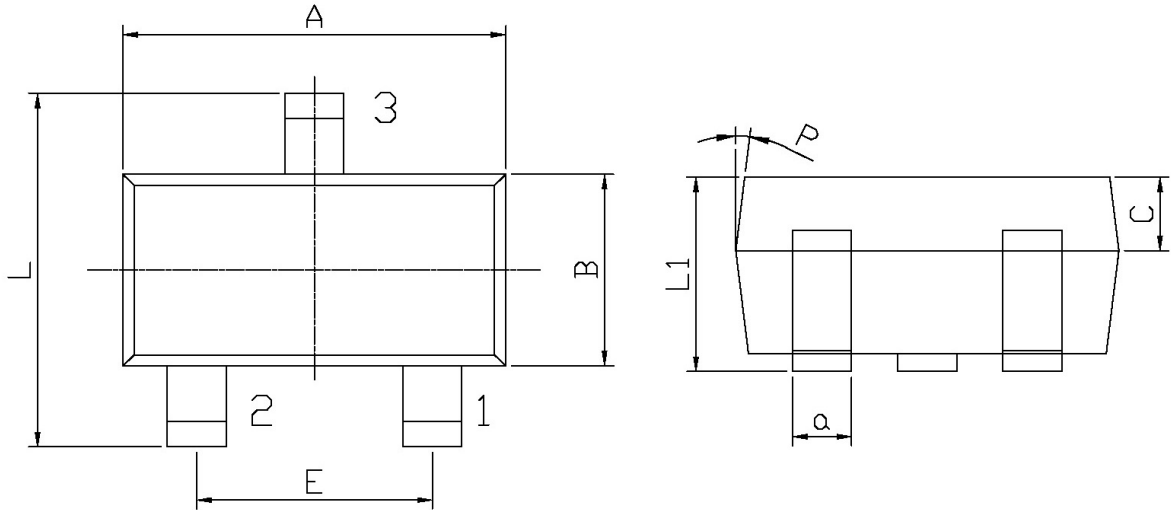
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

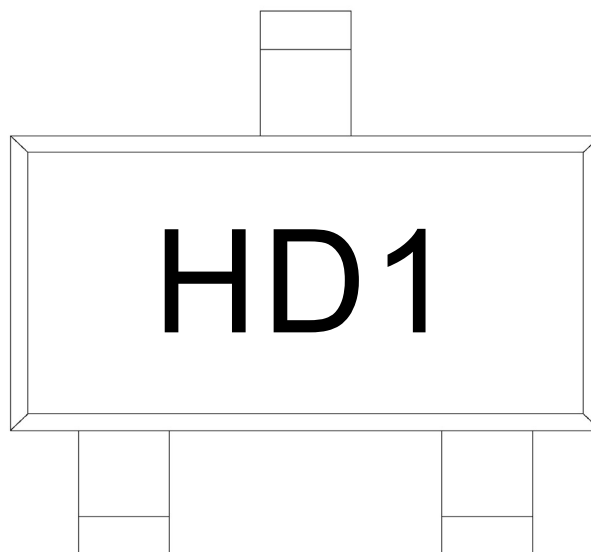
SOT-323

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	1.95	2.35	C	0.30	0.50
L	2.00	2.2	L1	0.85	1.15
E	1.20	1.40	a	0.20	0.40
B	1.15	1.35	P	7°	

印章说明 / Marking Instructions



说明：

H: 为公司代码

D1: 为型号代码

Note:

H: Company Code

D1: 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-323	3,000	10	30,000	8	240,000	7" ×8	180×120×180	385×257×392

使用说明 / Notices