

AP2301**P-Channel Power MOSFET****描述 / Descriptions**

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

特征 / Features

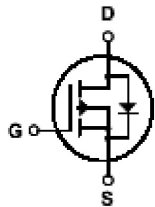
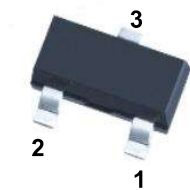
沟道场效应管,MOS 场效应管。

Trench FET Power MOSFET 100% Rg Tested.

用途 / Applications

主要用于显示屏驱动。

Primarily the display screen drive applications.

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

PIN1 : S

PIN 2 : G

PIN 3 : D

印章代码 / Marking

Marking	
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P-Channel Power MOSFET

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

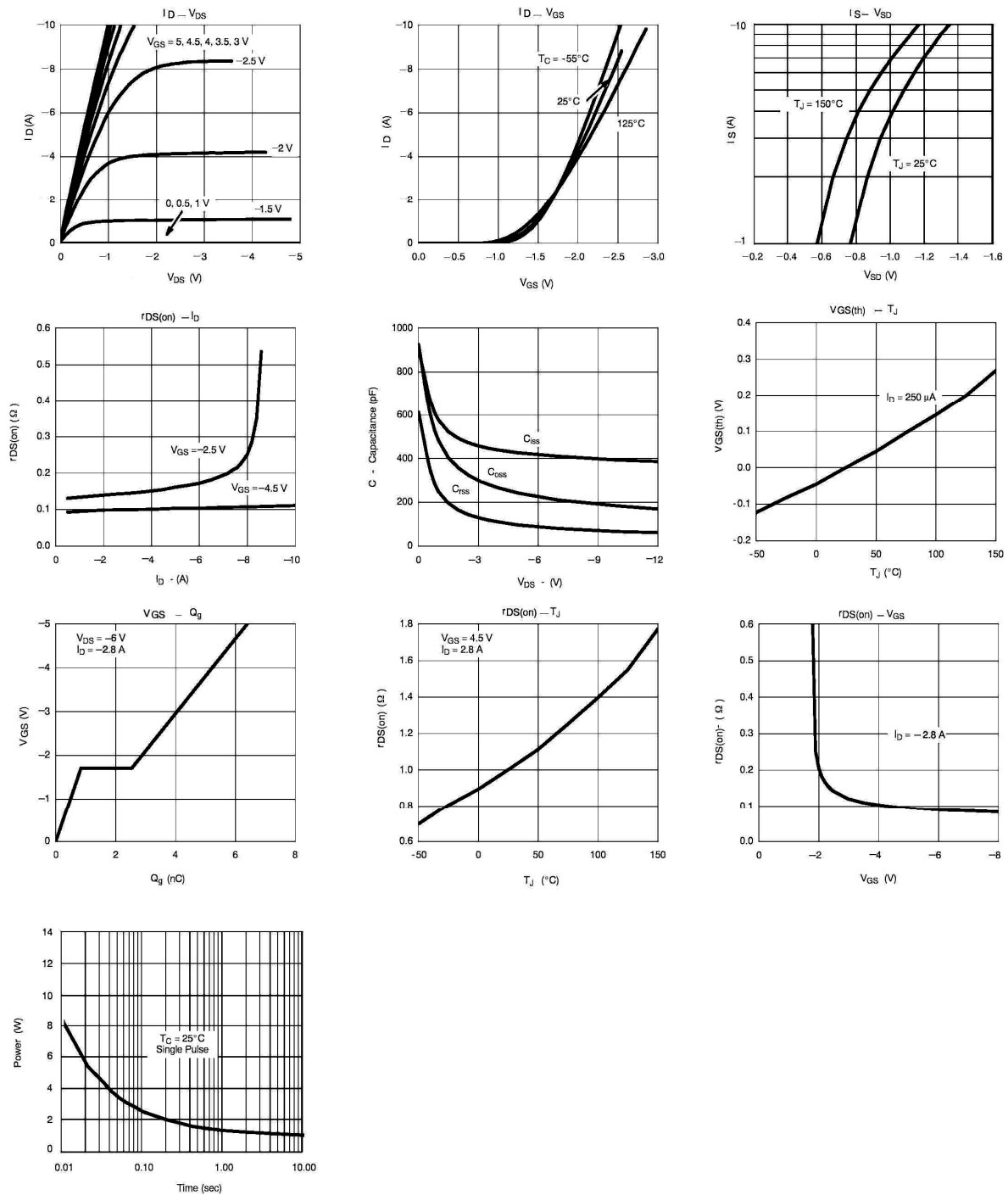
参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DSS}	-20	V
Gate-Source Voltage	V_{GSS}	± 12	V
Drain Current – Continuous	I_D	-3.0	A
Drain Current – Continuous	$I_D(T_A=70^\circ\text{C})$	-1.5	A
Pulsed Drain Current	I_{DM}	-10	A
Continuous Source Current (Diode Conduction)	I_S	-1.6	A
Power Dissipation	P_D	1.25	W
Power Dissipation	$P_D(T_A=70^\circ\text{C})$	0.8	W
Storage Temperature Range	T_{stg}	-55~150	°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	$V_{(BR)DSS}$	$V_{GS}=0V$ $I_D=-250\mu A$	-20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-0.45		-0.95	V
Static Drain–Source On–Resistance	$R_{DS(on)1}$	$V_{GS}=-4.5V$ $I_D=-3.0A$		0.068	0.11	Ω
	$R_{DS(on)2}$	$V_{GS}=-2.5V$ $I_D=-2.0A$		0.089	0.14	Ω
Zero Gate Voltage Drain Current	$I_{DSS(1)}$	$V_{DS}=-20V$ $V_{GS}=0V$			-1	μA
	$I_{DSS(2)}$	$V_{DS}=-20V$ $V_{GS}=0V$ $T_J=55^\circ\text{C}$			-10	μA
Gate–Body Leakage	I_{GSS}	$V_{GS}=\pm 12V$ $V_{DS}=0V$			± 0.1	μA
State Drain Current	$I_{D(1)}$	$V_{DS}\leq -5V$ $V_{GS}=-4.5V$	-6			A
	$I_{D(2)}$	$V_{DS}\leq -5V$ $V_{GS}=-2.5V$	-3			A
Drain–Source Diode Forward Voltage	V_{SD}	$I_S=-1.6A$ $V_{GS}=0V$		-0.8	-1.2	V
Forward Transconductance	g_{FS}	$V_{DS}=-5V$ $I_D=-3.0A$		6.5		S
Input Capacitance	C_{iss}	$V_{DS}=-6V$ $V_{GS}=0$ $f=1\text{MHz}$		415		pF
Output Capacitance	C_{oss}			223		
Reverse Transfer Capacitance	C_{rss}			84		
Turn–On Delay Time	$t_{d(on)}$	$V_{DD}=-6V$ $R_L=6\Omega$ $I_D\approx -1A$ $R_G=6\Omega$ $V_{GEN}=-4.5V$		13	25	ns
Turn–On Rise Time	t_r			36	60	
Turn–Off Delay Time	$t_{d(off)}$			42	70	
Turn–Off Fall Time	t_f			34	60	

P-Channel Power MOSFET

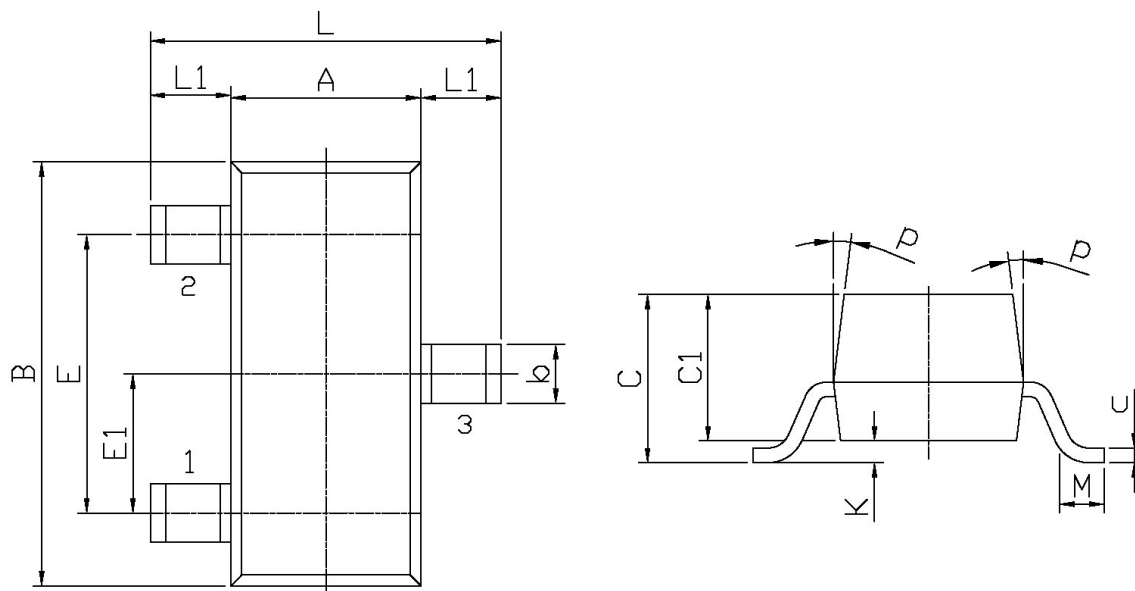
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

SOT-23

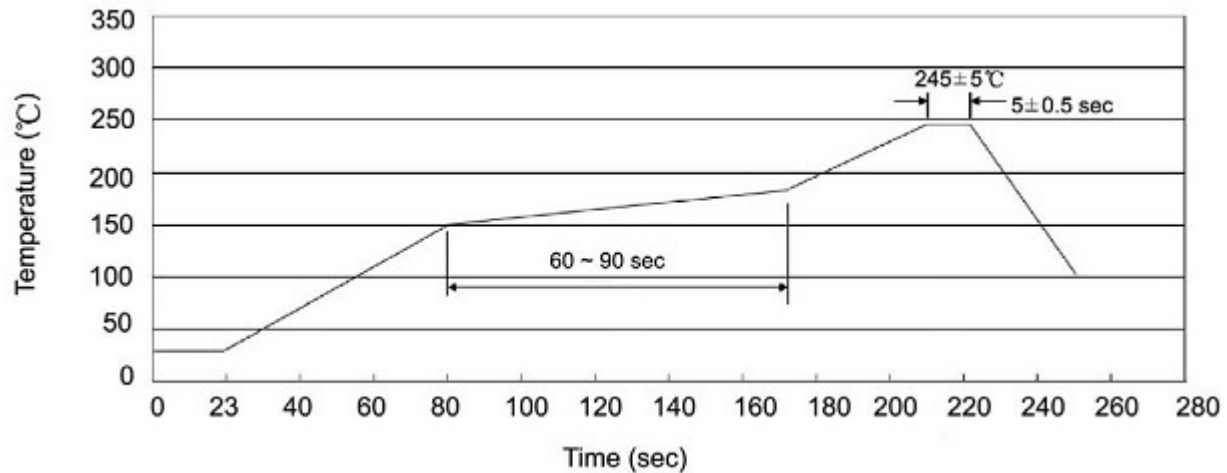
单位: mm



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			

P-Channel Power MOSFET

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