

AP2301B

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。

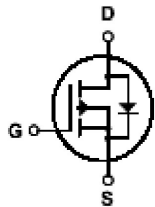
Trench FET Power MOSFET 100% Rg Tested.

用途 / Applications

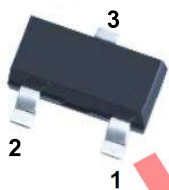
主要用于显示屏驱动。

Primarily the display screen drive applications.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN 1 : S

PIN 2 : G

PIN 3 : D

印章代码 / Marking

| | |
|---------|--|
| Marking | |
|---------|--|

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

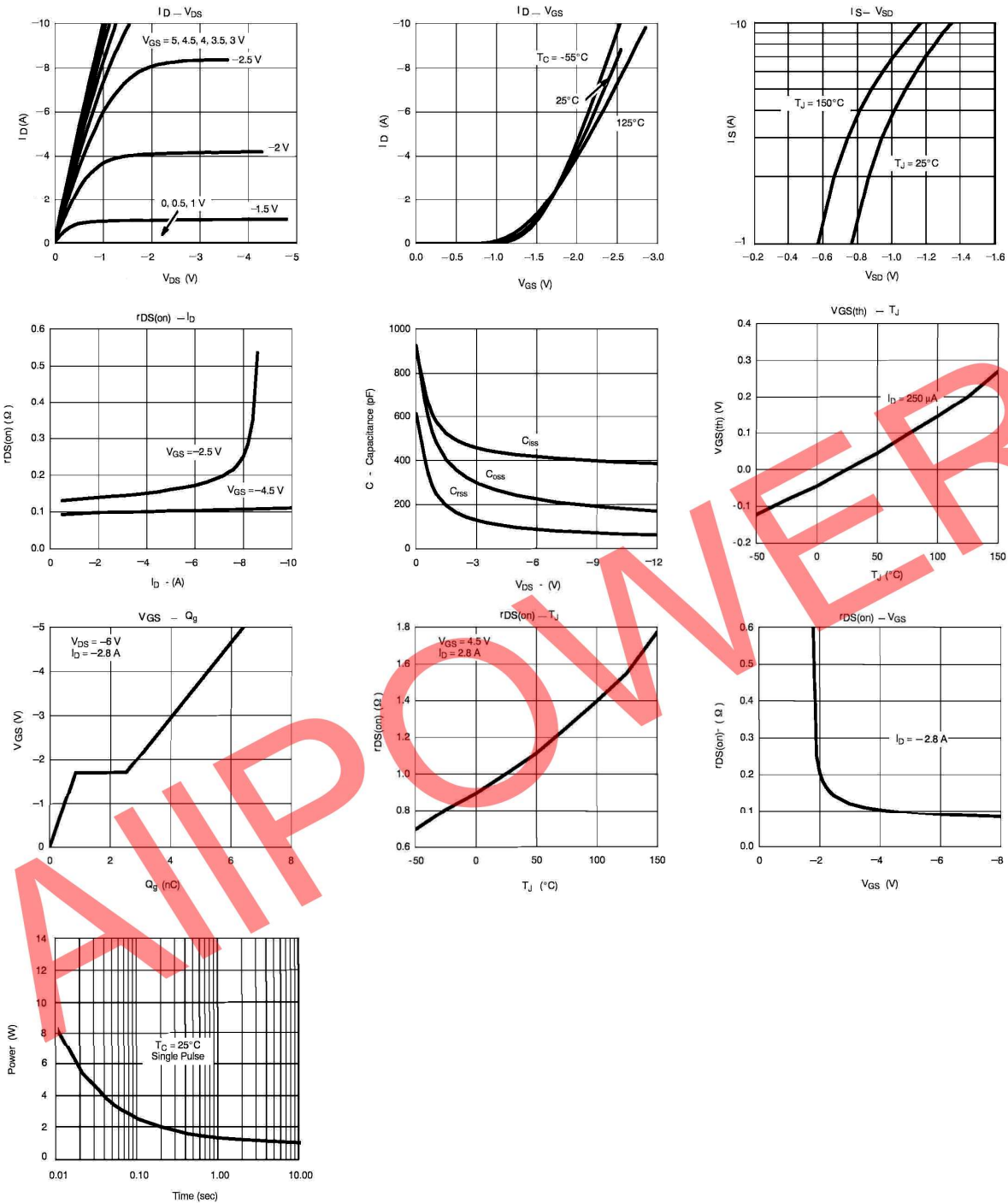
| 参数 Parameter | 符号 Symbol | 数值 Rating | 单位 Unit |
|--|-----------------------------|--------------|------------|
| Drain-Source Voltage | V_{DSS} | -20 | V |
| Gate-Source Voltage | V_{GSS} | ±12 | V |
| Drain Current – Continuous | I_D | -2.0 | A |
| Drain Current – Continuous | $I_D(T_A=70^\circ\text{C})$ | -1.2 | A |
| Pulsed Drain Current | I_{DM} | -6.8 | A |
| Continuous Source Current (Diode Conduction) | I_S | -1.0 | A |
| Power Dissipation | P_D | 0.75 | 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 | $R_{DS(on)1}$ | $V_{GS}=-4.5V$ $I_D=-2.0A$ | | 0.130 | 0.16 | Ω |
| | $R_{DS(on)2}$ | $V_{GS}=-2.5V$ $I_D=-1.0A$ | | 0.165 | 0.23 | 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 |
| Drain-Source Diode Forward Voltage | V_{SD} | $I_S=-1.6A$ $V_{GS}=0V$ | | -0.8 | -1.2 | V |
| Forward Transconductance | g_{FS} | $V_{DS}=-5V$ $I_D=-2.0A$ | | 2.5 | | S |
| Input Capacitance | C_{iss} | $V_{DS}=-6V$ $f=1\text{MHz}$ $V_{GS}=0$ | | 210 | | pF |
| Output Capacitance | C_{oss} | | | 54 | | |
| Reverse Transfer Capacitance | C_{rss} | | | 27 | | |
| Turn-On Delay Time | $t_{d(on)}$ | $V_{DD}=-6V$ $I_D\approx -1A$ $V_{GEN}=-4.5V$ $R_L=6\Omega$ $R_G=6\Omega$ | | 10 | 20 | ns |
| Turn-On Rise Time | t_r | | | 5 | 10 | |
| Turn-Off Delay Time | $t_{d(off)}$ | | | 21 | 42 | |
| Turn-Off Fall Time | t_f | | | 7 | 14 | |

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电参数曲线图 / Electrical Characteristic Curve



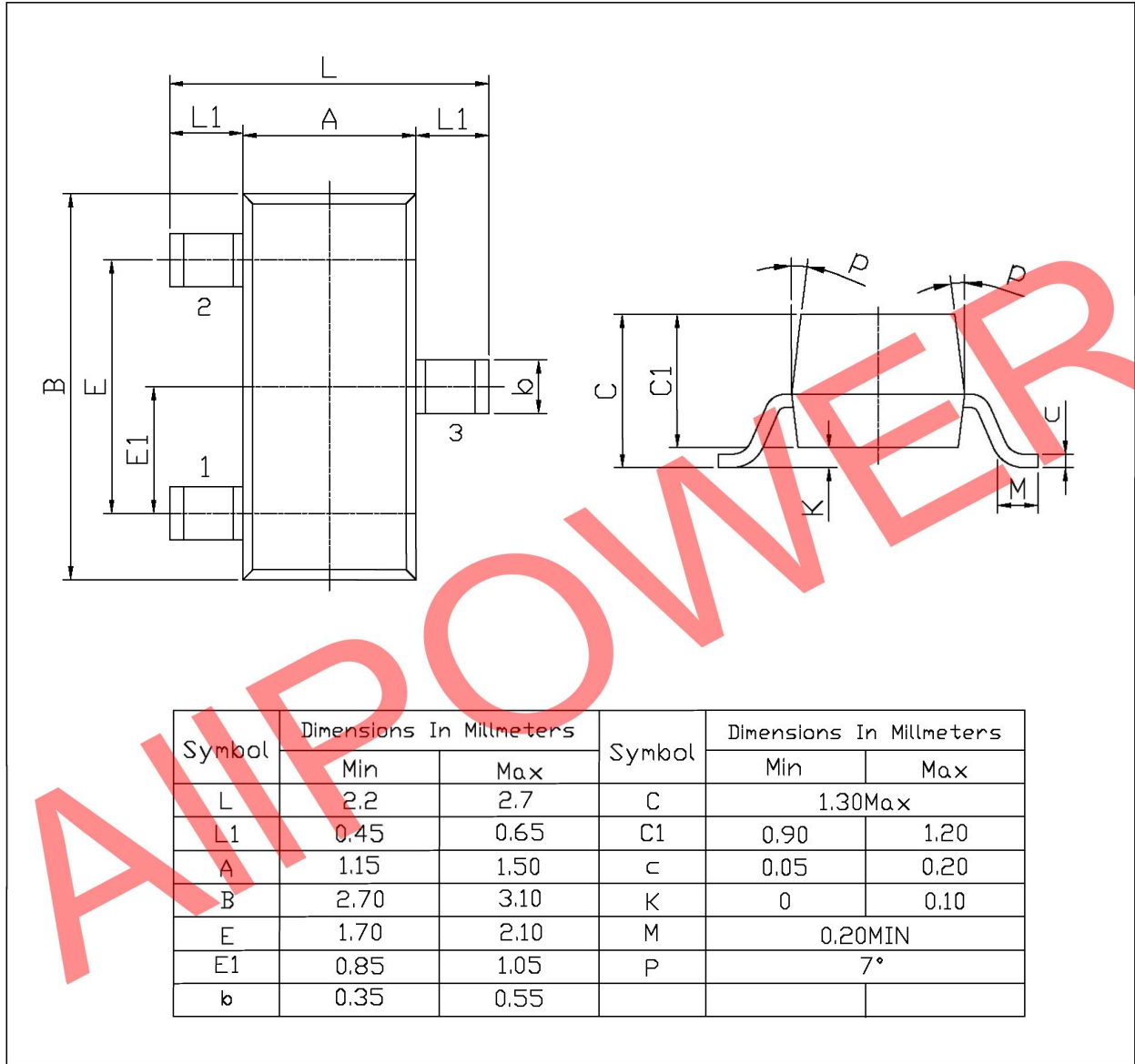
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外形尺寸图 / Package Dimensions

SOT-23

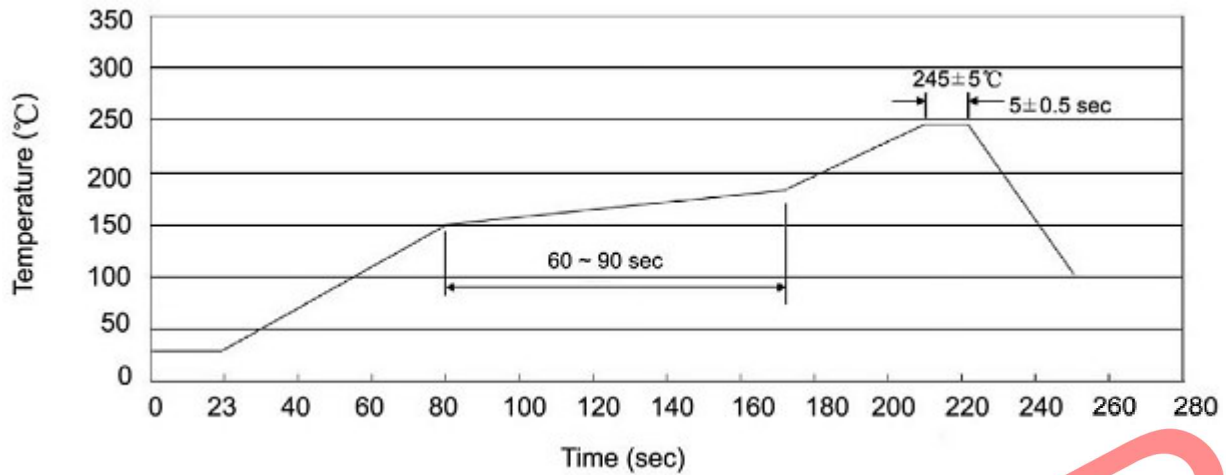
单位: mm



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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