

AP3407

P-Channel Power MOSFET

描述 / Descriptions

SOT23 塑封封装 P 道 MOS 场效应管。P- CHANNEL MOSFET in a SOT23 Plastic Package.

特征 / Features

$V_{DS} (V) = -30V$

$I_D = -4.1 A$

$R_{DS(ON)} < 60m\Omega (V_{GS} = -10V)$

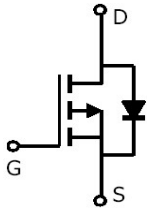
$R_{DS(ON)} < 87m\Omega (V_{GS} = -4.5V)$

用途 / Applications

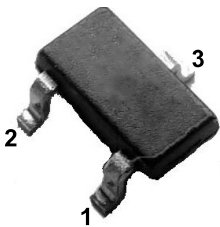
适用于作负载开关或脉宽调制应用。

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



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)

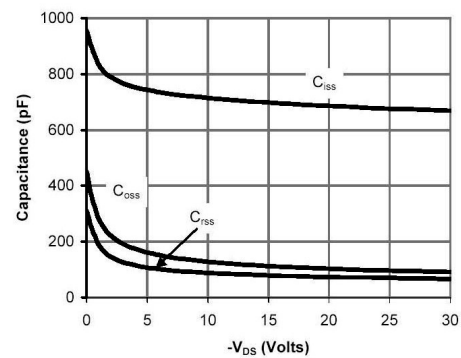
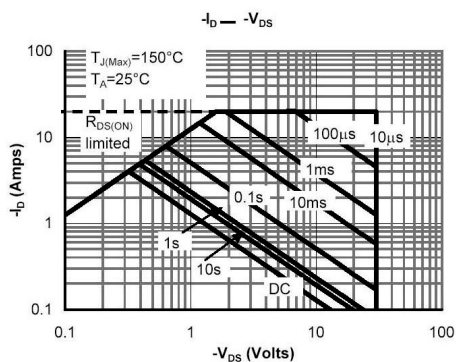
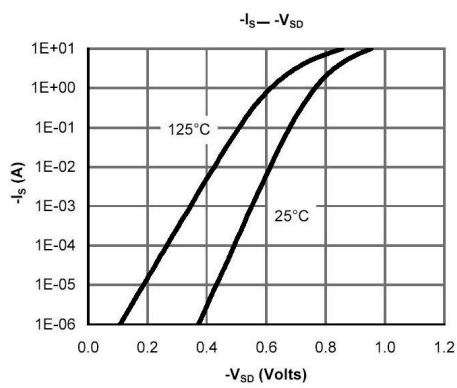
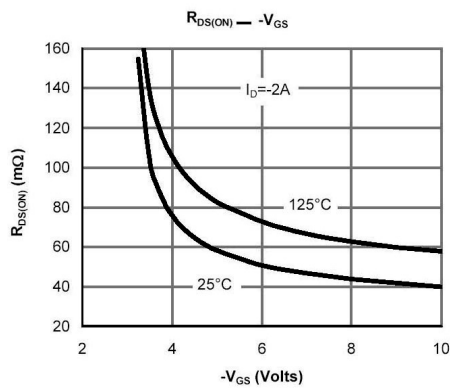
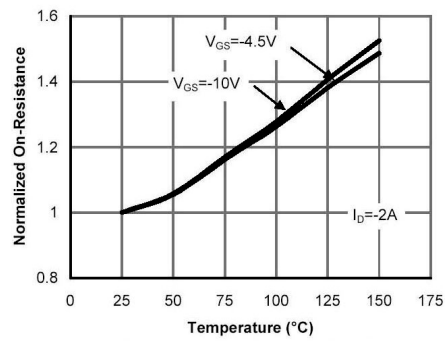
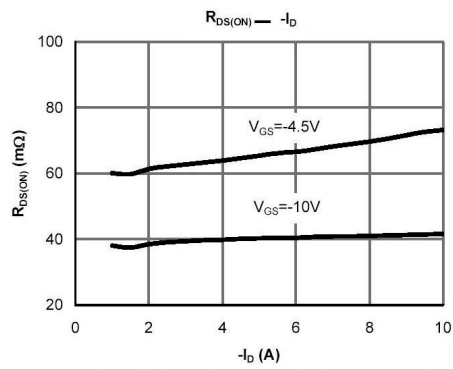
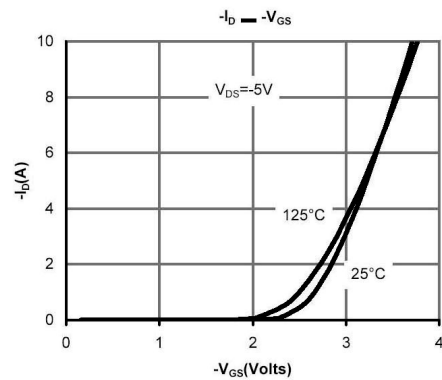
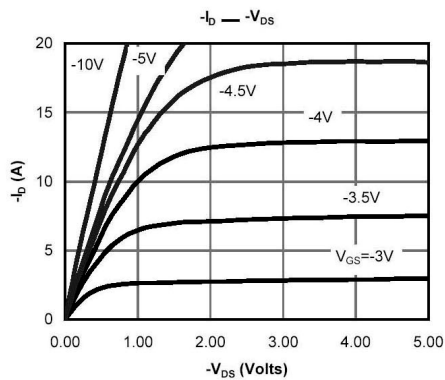
参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DS}	-30	V
Drain Current – Continuous	I_D	-4.1	A
Drain Current- Continuous	$I_D(T_a=70^\circ\text{C})$	-3.5	A
Pulsed Drain Current	I_{DM}	-20	A
Gate-Source Voltage	V_{GS}	± 20	V
Total Power Dissipation	P_D	1.4	W
Total Power Dissipation	$P_D(T_a=70^\circ\text{C})$	1.0	W
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

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}	$V_{GS}=0V$ $I_D=-250\mu A$	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-24V$ $V_{GS}=0V$			-1	μA
		$V_{DS}=-24V$ $V_{GS}=0V$ $T_J=55^\circ\text{C}$			-5	μA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	μA
On–State Drain Current	$I_{D(on)}$	$V_{GS}=-4.5V$ $V_{DS}=-5V$	-10			A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu A$	-1	-1.4	-3	V
Static Drain–Source On–Resistance	$R_{DS(on)1}$	$V_{GS}=-10V$ $I_D=-4.1A$		54	60	m Ω
	$R_{DS(on)2}$	$V_{GS}=-10V$ $I_D=-4.1A$ $T_J=125^\circ\text{C}$		57	73	
	$R_{DS(on)3}$	$V_{GS}=-4.5V$ $I_D=-3A$		80	95	
Forward Transconductance	g_{FS}	$V_{DS}=-5V$ $I_D=-4A$	5.5	8.2		S
Drain–Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=-1A$		-0.77	-1	V
Input Capacitance	C_{iss}	$V_{DS}=-15V$ $V_{GS}=0V$ $f=1\text{MHz}$		700		pF
Output Capacitance	C_{oss}			120		
Reverse Transfer Capacitance	C_{rss}			75		
Turn–On Delay Time	$t_{d(on)}$	$V_{GS}=-10V$ $R_L=3.6\Omega$ $V_{DS}=-15V$ $R_{GEN}=3\Omega$		8.6		ns
Turn–On Rise Time	t_r			5		
Turn–Off Delay Time	$t_{d(off)}$			28.2		
Turn–Off Fall Time	t_f			13.5		

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电参数曲线图 / Electrical Characteristic Curve



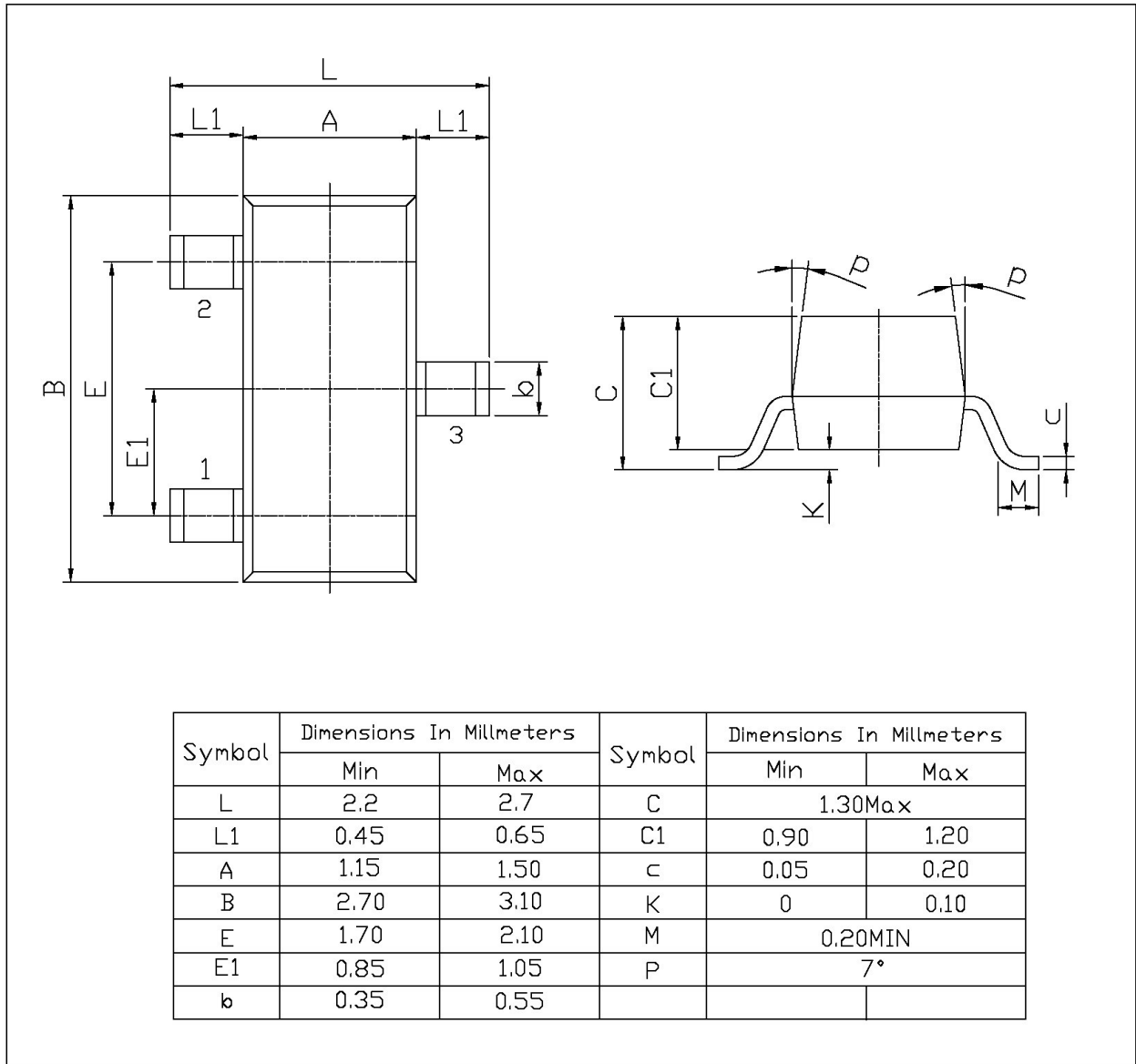
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外形尺寸图 / Package Dimensions

SOT-23

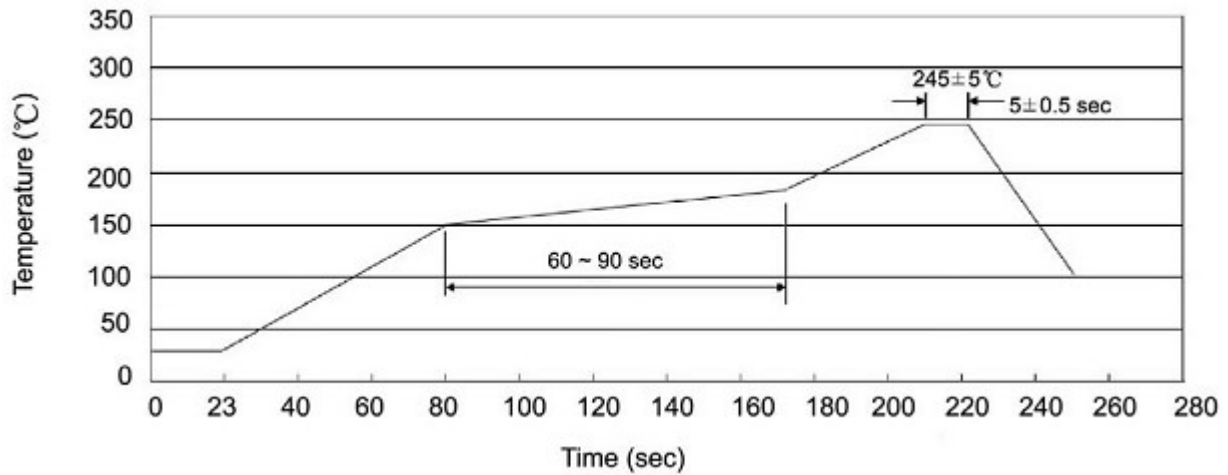
单位: mm



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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