

AP3404

N-Channel Power MOSFET

描述 / Descriptions

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

特征 / Features

$V_{DS} = 30V$

$I_D = 5.8 A (V_{GS} = 10V)$

$R_{DS(ON)} < 22m\Omega (V_{GS} = 10V)$

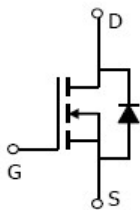
$R_{DS(ON)} < 34m\Omega (V_{GS} = 4.5V)$

用途 / Applications

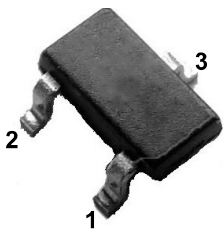
适用于作负载开关或脉宽调制应用。

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)

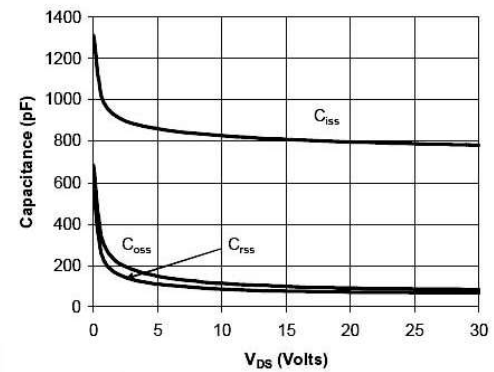
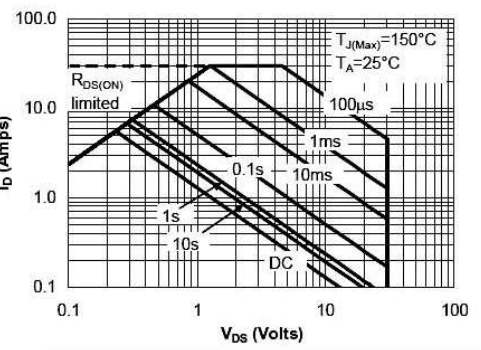
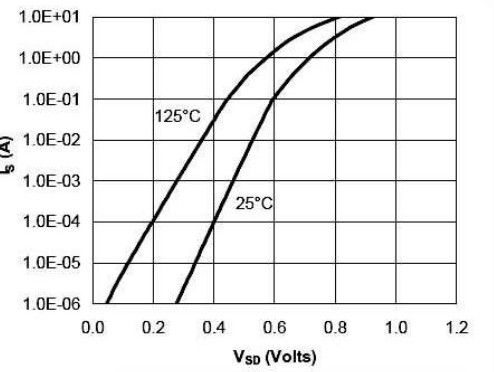
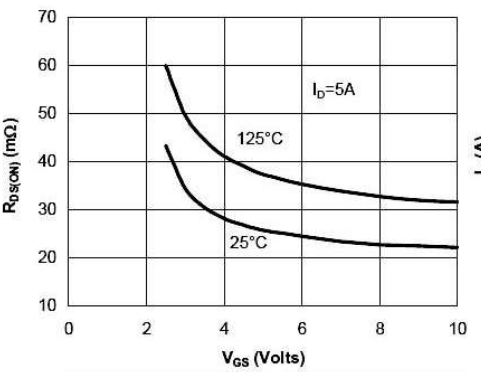
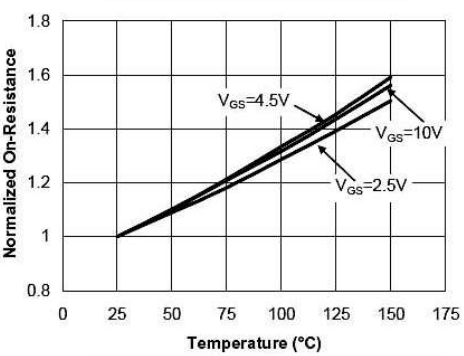
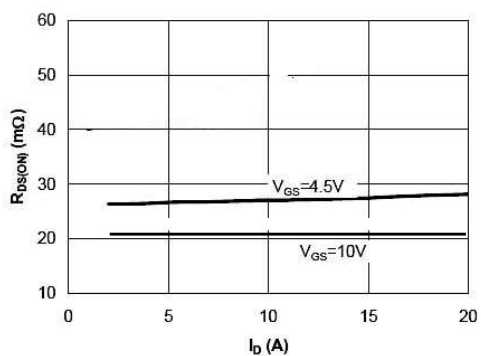
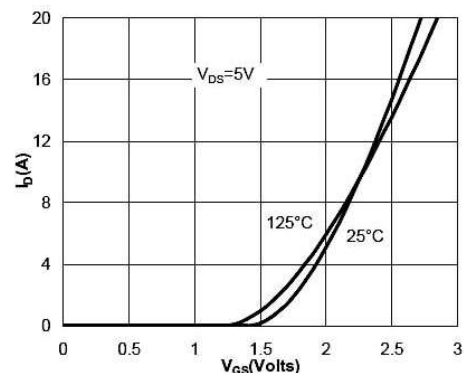
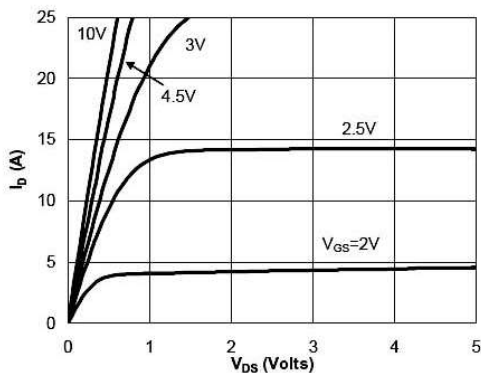
参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Drain-Source Voltage	V_{DS}	30	V
Drain Current – Continuous	I_D	5.8	A
Drain Current- Continuous	$I_D(T_a=70^\circ\text{C})$	4.2	A
Pulsed Drain Current	I_{DM}	34	A
Gate-Source Voltage	V_{GS}	± 20	V
Total Power Dissipation	P_D	1.4	W
Total Power Dissipation	$P_D(T_a=70^\circ\text{C})$	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	$I_{D(on)}$	$V_{GS}=4.5V$ $V_{DS}=5V$	30			A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.2	1.6	2.5	V
Static Drain–Source On–Resistance	$R_{DS(on)(1)}$	$V_{GS}=10V$ $I_D=5.8A$		18	22	m Ω
	$R_{DS(on)(2)}$	$V_{GS}=10V$ $I_D=5.8A$ $T_J=125^\circ\text{C}$			38	
	$R_{DS(on)(3)}$	$V_{GS}=4.5V$ $I_D=5A$		27	34	
Forward Transconductance	g_{FS}	$V_{DS}=5V$ $I_D=5A$	8.5			S
Drain–Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1A$		0.77	1	V
Input Capacitance	C_{iss}	$V_{DS}=15V$ $V_{GS}=0V$ $f=1\text{MHz}$		345	690	pF
Output Capacitance	C_{oss}			55		
Reverse Transfer Capacitance	C_{rss}			32		
Turn–On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $R_L=2.7\Omega$ $V_{DS}=15V$ $R_{GEN}=6\Omega$		2.8		ns
Turn–On Rise Time	t_r			7.2		
Turn–Off Delay Time	$t_{d(off)}$			15.8		
Turn–Off Fall Time	t_f			4.6		

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电参数曲线图 / Electrical Characteristic Curve



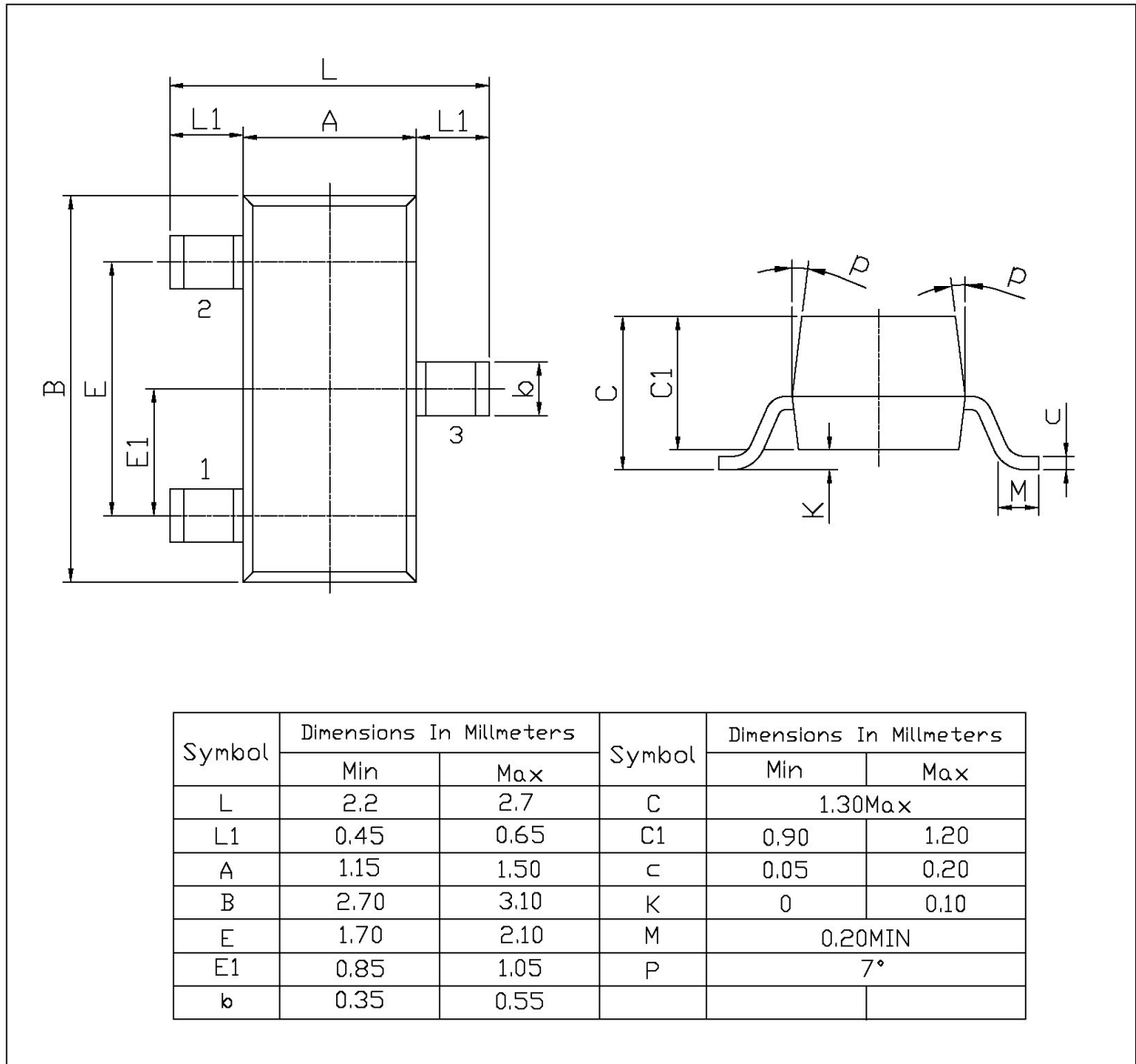
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外形尺寸图 / Package Dimensions

SOT-23

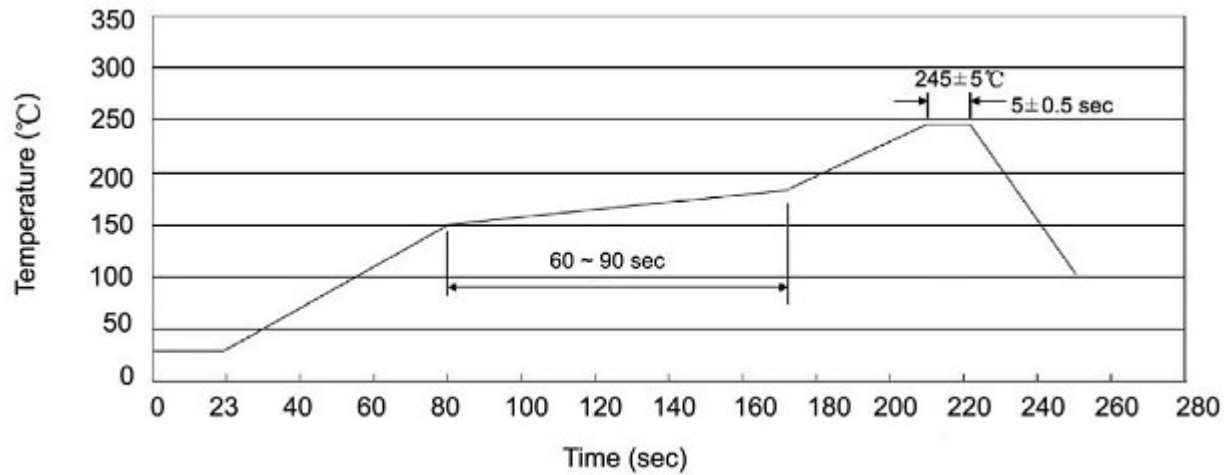
单位: mm



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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

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