

# AP8205

## N-Channel Power MOSFET

### 描述 / Descriptions

SOT23-6 塑封封装 N 沟道双 MOS 管。N-channel Double MOSFET in a SOT23-6 Plastic Package.

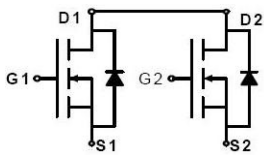
### 特征 / Features

采用先进的沟槽技术，提供较小的导通电阻  $R_{DS(on)}$ ，低栅极电荷，栅极工作电压低至 2.5V。  
advanced trench technology to provide excellent  $R_{DS(on)}$ , low gate charge and operation with gate voltages as low as 2.5V.

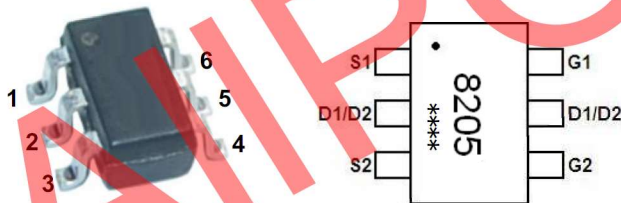
### 用途 / Applications

适用于电池保护电路，开关电路。  
Use as a Battery protection , Switching application.

### 内部等效电路 / Equivalent Circuit



### 引脚排列 / Pinning



### 印章代码 / Marking

Marking	8205
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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	$V_{DS}$	20	V
Drain Current - Continuous	$I_D(T_a=25^\circ C)$	6	A
Drain Current - Continuous	$I_D(T_a=70^\circ C)$	4.8	A
Drain Current – Pulsed	$I_{DM}$	20	A
Gate-Source Voltage	$V_{GS}$	±8.0	V
Maximum Power Dissipation	$P_D(T_a=25^\circ C)$	1.14	W
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	110	°C/W
Junction Temperature	$T_j$	150	°C
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	$BV_{DSS}$	$V_{GS}=0V$ $I_D=250\mu A$	20			V
Drain-Source Leakage Current( $T_j=25^\circ C$ )	$I_{DSS}$	$V_{DS}=20V$ $V_{GS}=0V$			1	$\mu A$
Drain-Source Leakage Current( $T_j=70^\circ C$ )	$I_{DSS}$	$V_{DS}=16V$ $V_{GS}=0V$			25	$\mu A$
Gate-Source Leakage Current	$I_{GSS}$	$V_{GS}=\pm 10V$ $V_{DS}=0V$			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	0.5		1.2	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V$ $I_D=6.0A$			24	m $\Omega$
		$V_{GS}=2.5V$ $I_D=5.2A$			30	m $\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS}=10V$ $I_D=6.0A$		20		S
Forward On Voltage	$V_{SD}$	$V_{GS}=0V$ $I_S=1.7A$			1.2	V
Input Capacitance	$C_{iss}$	$V_{DS}=20V$ $V_{GS}=0V$ $f=1.0MHz$		1035		pF
Output Capacitance	$C_{oss}$			320		pF
Reverse Transfer Capacitance	$C_{rSS}$			150		pF
Turn-on Delay Time	$t_{d(on)}$	$V_{DS}=10V$ $I_D=1A$ $V_{GS}=5V$ $R_G=6\Omega$ $R_D=10\Omega$		30		ns
Rise Time	$t_r$			70		ns
Turn-off Delay Time	$t_{d(off)}$			40		ns
Fall Time	$t_f$			65		ns

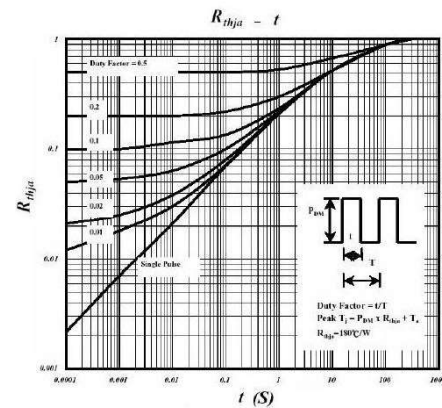
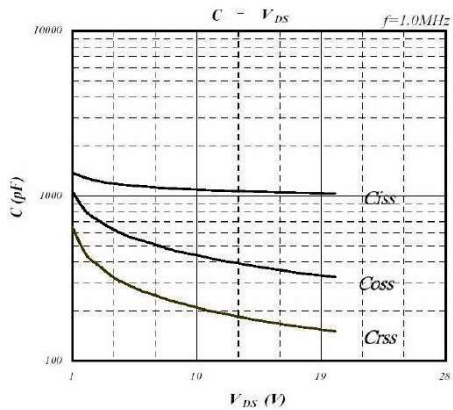
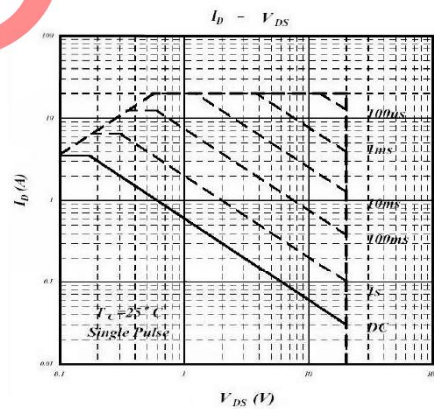
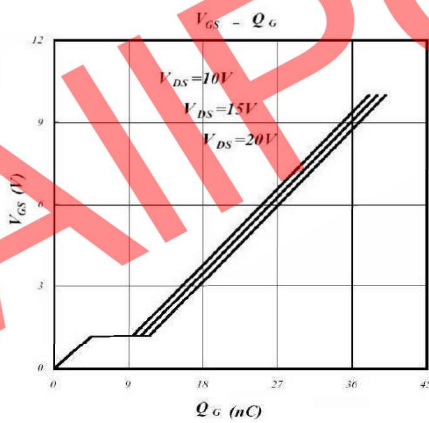
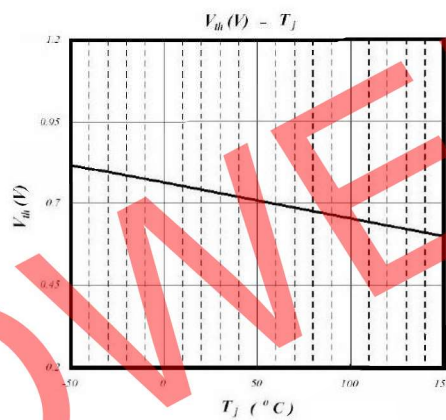
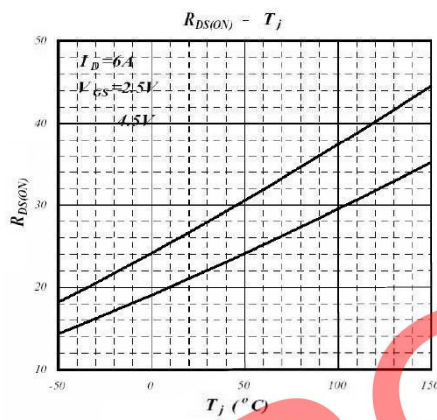
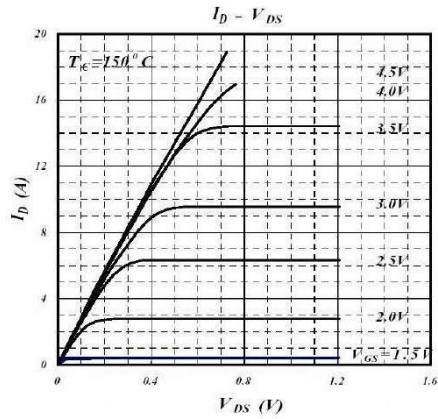
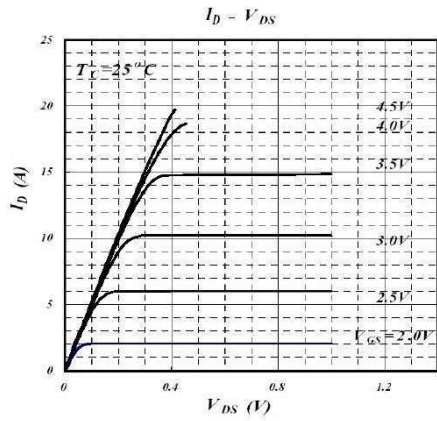
注/Notes:

1. 面装在FR4板,  $t \leq 10$ 秒。Surface Mounted on FR4 Board,  $t \leq 10$  sec.
2. 冲测试: 脉冲宽度 $\leq 300\mu s$ , 占空比 $\leq 2\%$ 。Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .

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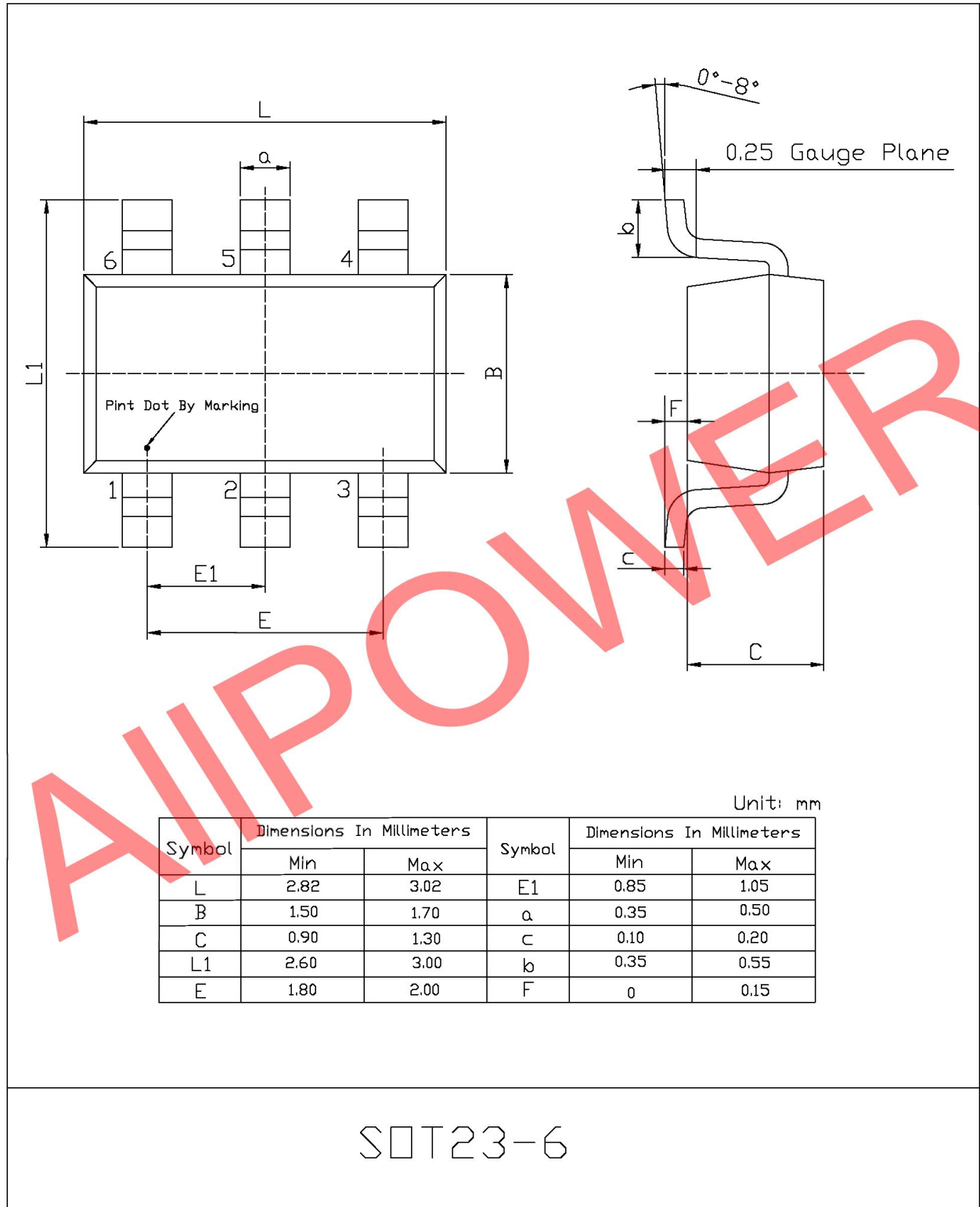
**电参数曲线图 / Electrical Characteristic Curve**



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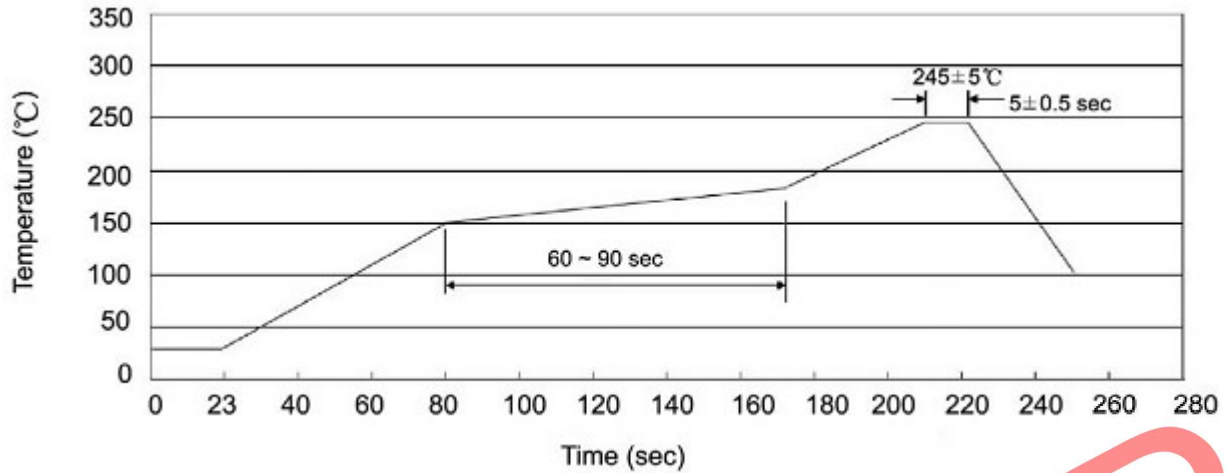
外形尺寸图 / Package Dimensions



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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 <sup>3</sup> )		
	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
SOT23-5/6	3,000	10	30,000	4	120,000	7" x8	210×205×205	445×230×435

**使用说明 / Notices**