

3-TERMINAL POSITIVE VOLTAGE REGULATORS

■ 产品特征

最大输出电流为1.2A
输出电压为5V
热过载保护
短路保护
输出晶体管安全工作区保护

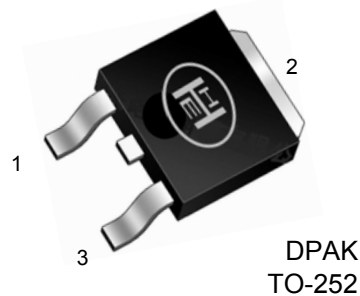
■ 产品用途

稳压电源电路

Package & Marking & Pin & Packing

3-Lead Plastic
TO-252 (DPAK)
Package Code: CV
Pin 1: INPUT (输入)
Pin 2: GND (地)
Pin 3: OUTPUT (输出)

Plastic Bags
80Pcs/Bag
4Kpcs/BOX



■ 极限参数 (Ta=25°C)

参数说明	符号	数值	单位
输入电压	V_i	35-40	V
结到空气热阻	$R_{\theta JA}$	65	°C/W
结到壳热阻	$R_{\theta JC}$	5	
工作温度	T_{OPR}	0 ~ +125	°C
贮存温度	T_{atg}	-65 ~ +150	

打印标识
TR: 三端稳压IC
M: TO-252
HH: HAOHAI
aa: 出厂年份
bb: 出厂自然周

■ 电参数 (除特殊说明, $0 < T_j < 125^\circ\text{C}$, $I_o = 500\text{mA}$, $V_i = 10\text{V}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$)

参数	符号	测试条件	最小值	典型值	最大值	单位
输出电压	V_o	$T_j = 25^\circ\text{C}$	4.80	5.00	5.20	V
		$5\text{mA} < I_o < 1\text{A}$, $P_o < 15\text{W}$, $V_i = 7.5\text{V to } 20\text{V}$	4.75	5.00	5.25	
线性调整率	ΔV_o	$T_j = 25^\circ\text{C}$, $V_i = 7.5\text{V to } 25\text{V}$		4.00	100	mV
		$T_j = 25^\circ\text{C}$, $V_i = 8\text{V to } 12\text{V}$		1.60	50.0	
负载调整率	ΔV_o	$T_j = 25^\circ\text{C}$, $I_o = 5\text{mA to } 1.5\text{A}$		9	100	mV
		$T_j = 25^\circ\text{C}$, $I_o = 250\text{mA to } 750\text{mA}$		4	50	
表态电流	I_q	$T_j = 25^\circ\text{C}$		5.0	8.0	mA
表态电流变化率	ΔI_q	$I_o = 5\text{mA to } 1\text{A}$		0.03	0.5	
		$V_i = 8\text{V to } 25\text{V}$		0.30	0.8	
输出电压温漂	$\Delta V_o / \Delta T$	$I_o = 5\text{mA}$		0.8		mV/°C
输出噪音电压	V_N	$f = 10\text{Hz to } 100\text{kHz}$, $T_a = 25^\circ\text{C}$		42		Mv
纹波抑制比	R_R	$f = 120\text{Hz}$, $V_i = 8\text{V to } 18\text{V}$	62	73		dB
输入输出电压差	V_o	$I_o = 1\text{A}$, $T_j = 25^\circ\text{C}$		2		V
输出阻抗	R_o	$f = 1\text{kHz}$		15		mΩ
短路电流	I_{SC}	$V_i = 35\text{V}$, $T_a = 25^\circ\text{C}$		230		mA
峰值电流	I_{PK}	$T_j = 25^\circ\text{C}$		2.2		A

■ 特征曲线

图1: 静态电流和结点温度的关系曲线图

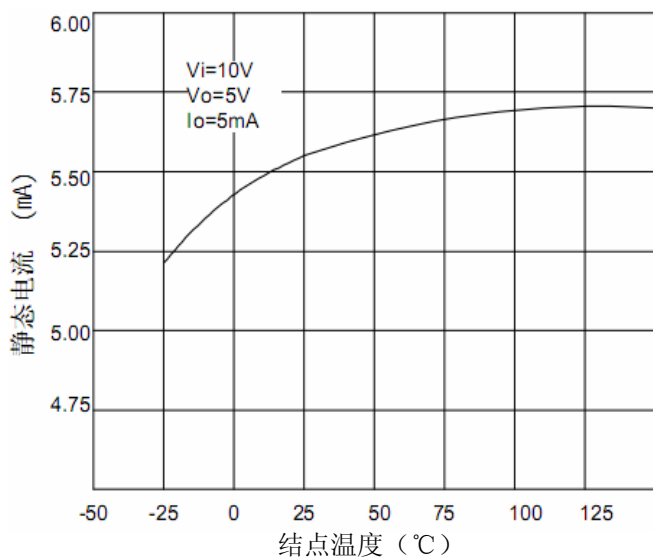


图2: 输出电压和结点温度的关系曲线图

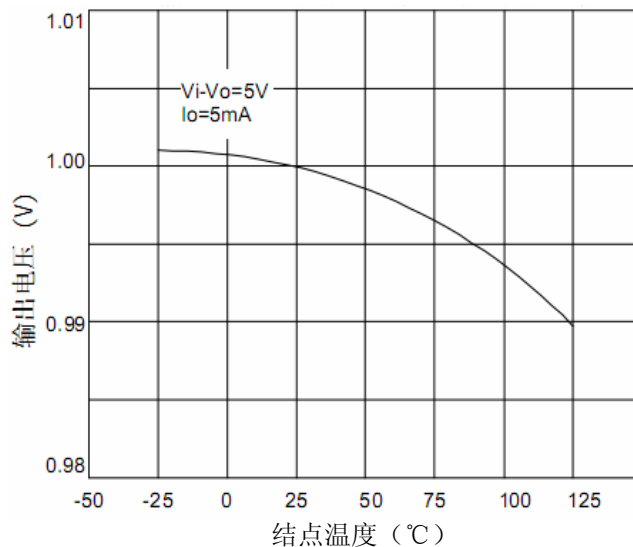


图3: 峰值输出电流

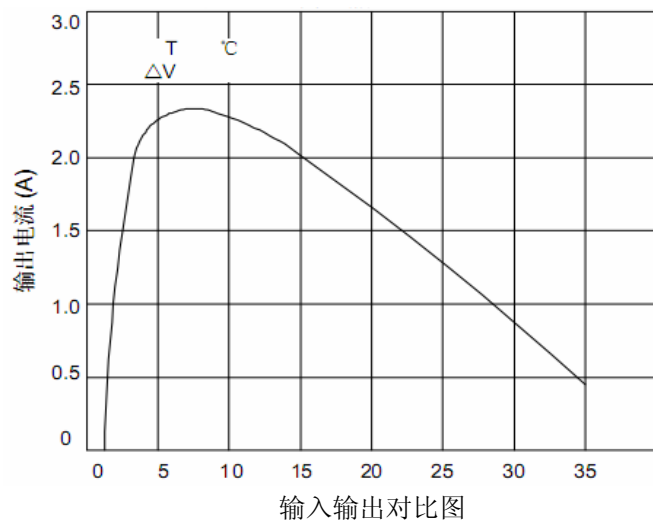
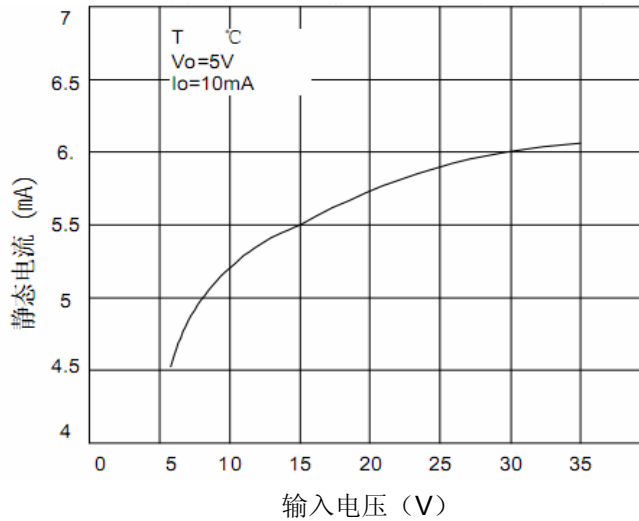


图4: 静态电流和输入电压的关系曲线图



■ 应用电路图

图1: 固定输出稳压电路

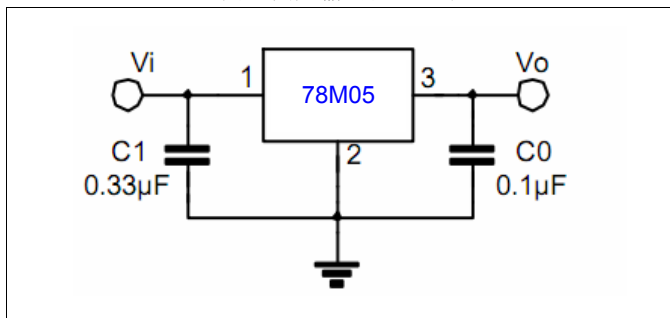
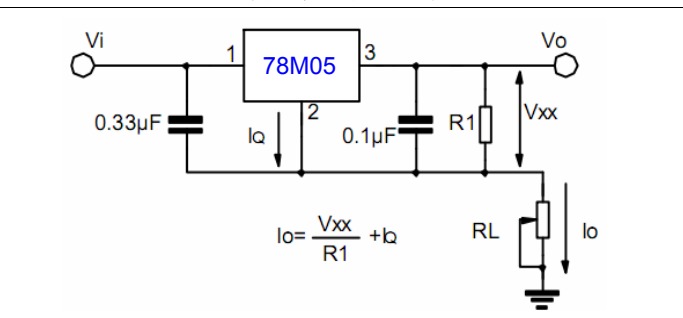


图2: 恒流稳压电路



应用电路图

图3: 增强型稳压输出电路

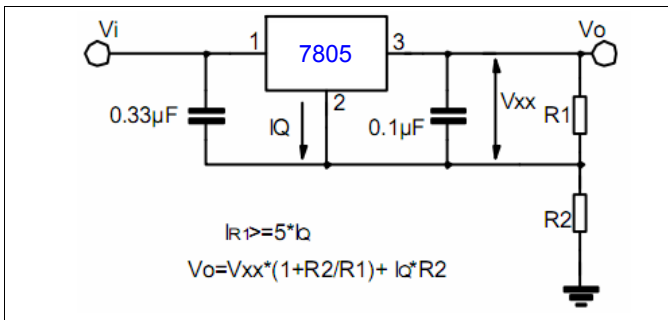


图4: 可调型输出电路

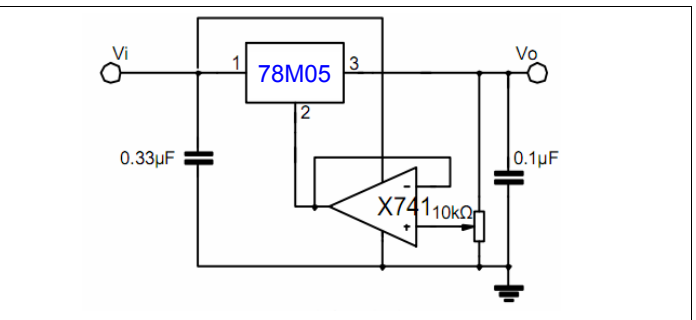


图5: 高电流电压稳压电路

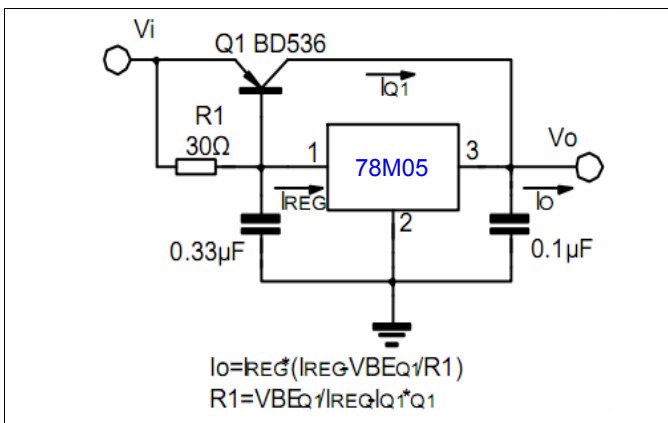


图6: 高输出电流短路保护电路

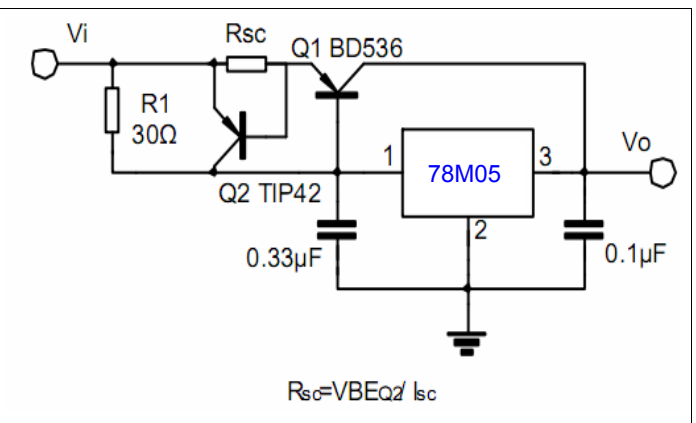


图7: 跟踪电压稳压电路

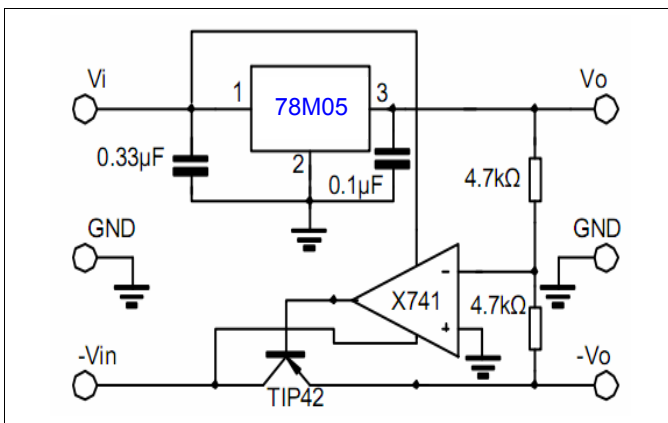


图8: 分电源电路

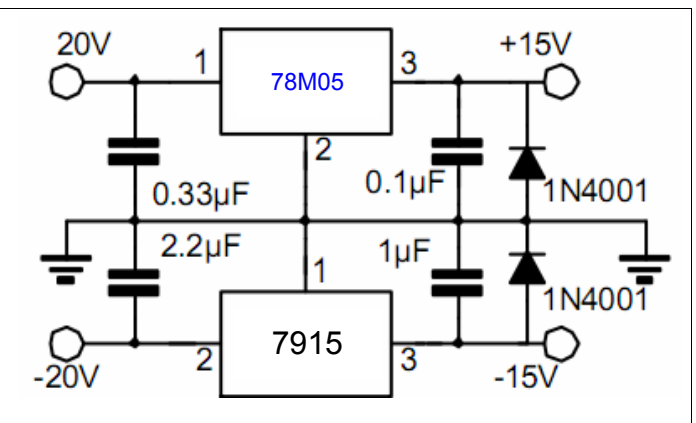


图9: 负电源电压输出电路

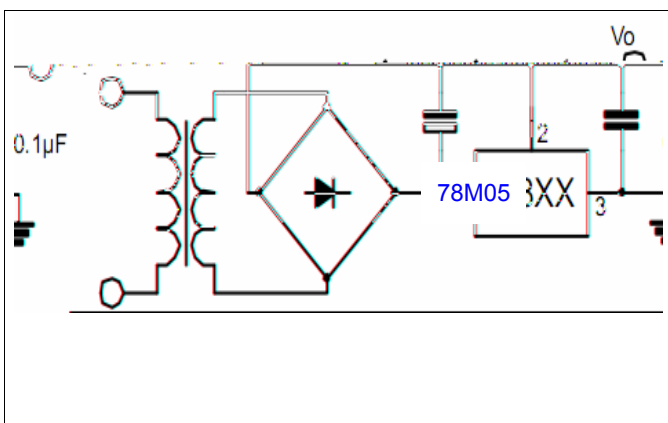
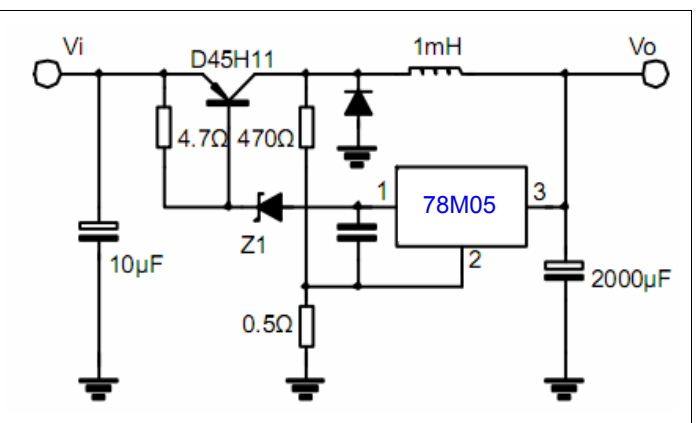


图10: 开关稳压电路



■ 测试电流图

图1: 测直流电参数电路图

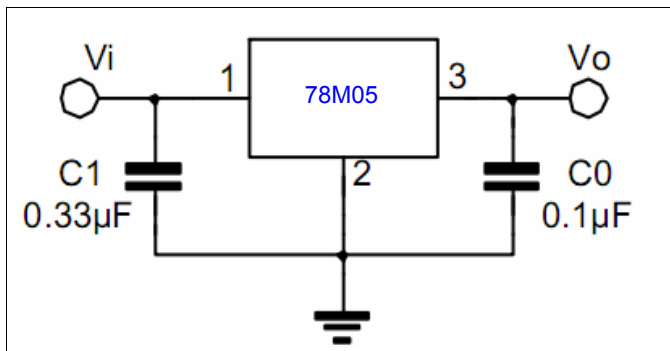


图2: 测负载调整率电路图

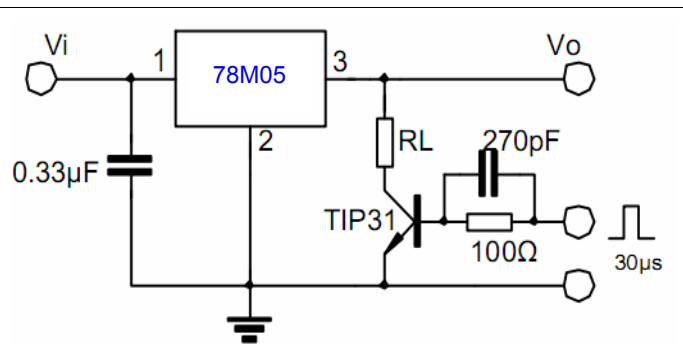
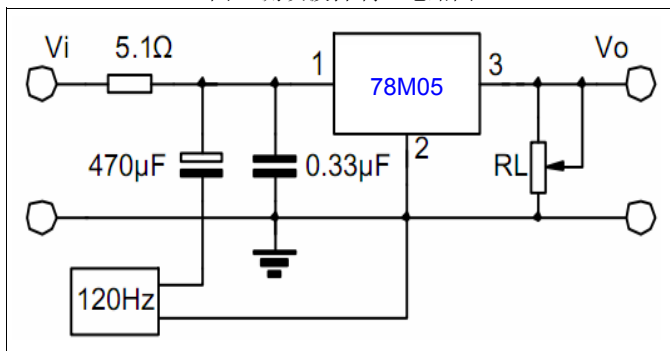
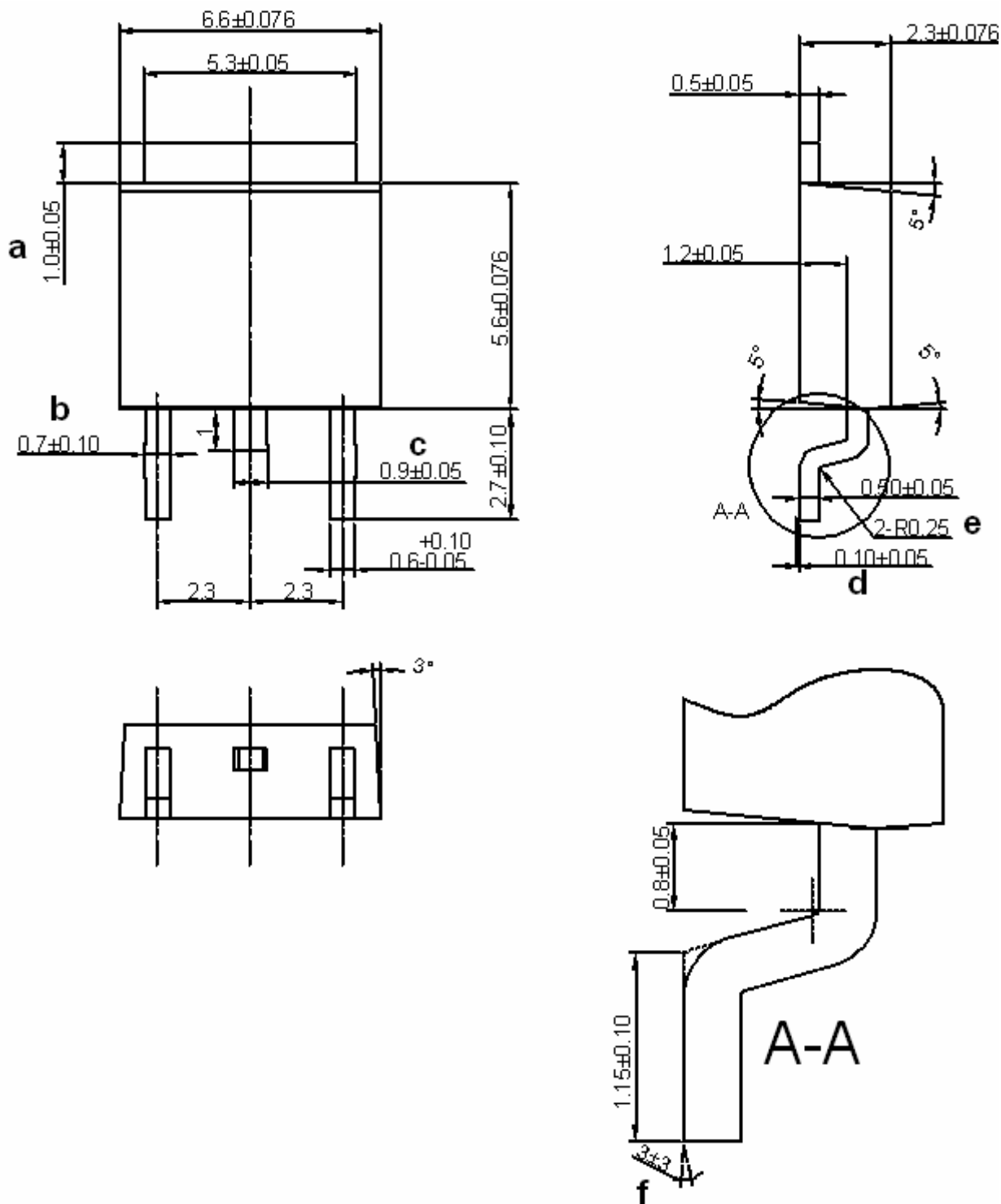


图3: 测纹波抑制比电路图

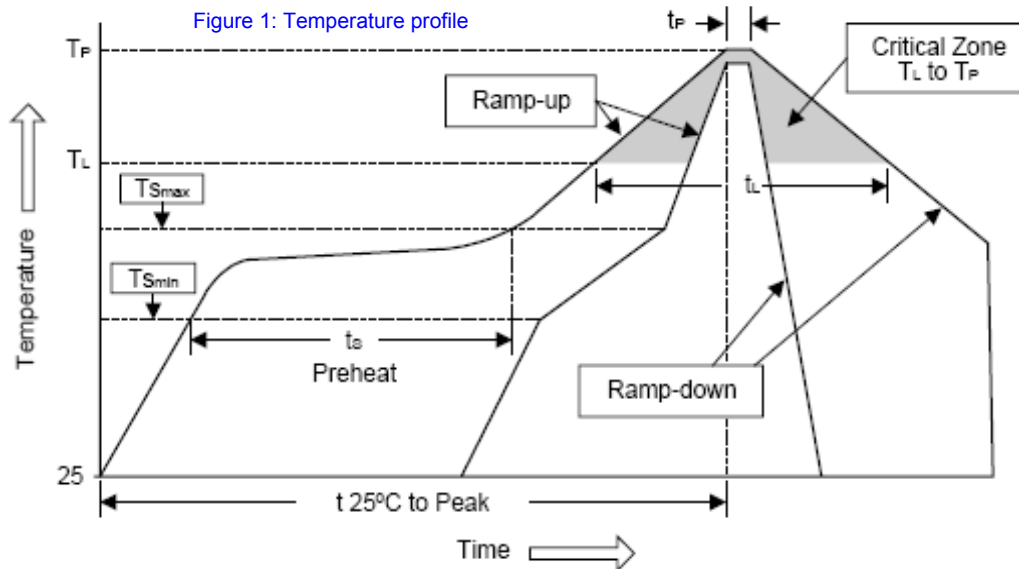


产品封装尺寸数据, 单位: 毫米
PACKAGE MECHANICAL DATA TO-252 (DPAK)



■ Soldering Methods for HAOHAI Products 浩海产品的焊接方法

1. Storage environment: Temperature=10°C~35°C Humidity=65%±15%
2. Reflow soldering of surface-mount devices



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	<3°C/sec	<3°C/sec
Preheat - Temperature Min (T_{smin}) - Temperature Max (T_{smax}) - Time (min to max) (t_s)	100°C 150°C 60~120 sec	150°C 200°C 60~180 sec
T_{smax} to T_L - Ramp-up Rate	<3°C/sec	<3°C/sec
Time maintained above: - Temperature (T_L) - Time (T_L)	183°C 60~150 sec	217°C 60~150 sec
Peak Temperature (T_P)	240°C +0/-5°C	260°C +0/-5°C
Time within 50C of actual Peak Temperature (T_P)	10~30 sec	20~40 sec
Ramp-down Rate	<6°C/sec	<6°C/sec
Time 250C to Peak Temperature	<6 minutes	<8 minutes

3. Flow (wave) soldering (solder dipping) 波峰焊、回流焊、焊锡浸渍温度

Products	Peak temperature	Dipping time
Pb devices.	245°C ±5°C	5sec ±1sec
Pb-Free devices.	260°C +0/-5°C	5sec ±1sec

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