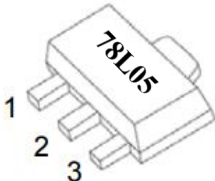


Features > 采用50V工艺平台制造 > 宽输入电压范围：6.5-35V输入 > 全电压、全电流、全温下输出电压冗余范围±5% > 稳定输出电流达 100mA > 内建过温保护、过压保护、过流保护	Max V_{in}	V_o	ID
	35V	5V	100mA
	Application > 仪器仪表 > 主板电源 > 设备电源模块 > 多路电源系统		
Package  Marking and pin assignment	Pin No.	Name	Explication
	1	Vout	输出
	2	GND	芯片地
	3	Vin	输入

Package Marking and Ordering Information

Device Marking	Device	Device Package	Quantity
78L05	78L05	SOT89-3	2500

Absolute Maximum Ratings ($T_c=25^\circ\text{C}$ unless otherwise specified)

Description	Symbol	Value range	Unit
输入电压	V_{in}	-0.30 ~ 35	V
最大结温	T_J	150	$^\circ\text{C}$
最大功耗	P_d	750	mW
热阻 (结到环境)	$R_{\theta JA}$	160	$^\circ\text{C}/\text{W}$
工作温度范围	T_A	-40 ~ 85	$^\circ\text{C}$
存储温度范围	T_{STG}	-55 ~ 150	$^\circ\text{C}$

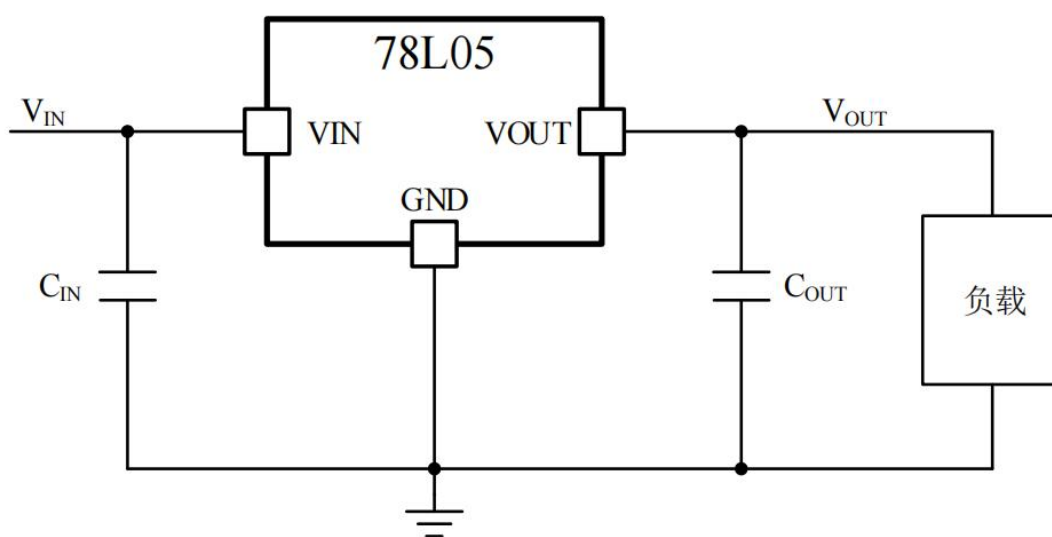
以上表格参数代表电路能够承受的极限范围。达到或者超过这个参数，电路不能正常工作，并且很大可能会损坏。并且长期工作在临界极限参数，也是会大大增加损坏的几率。

Electrical Characteristics ($T_J=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
输出电压	V_o	$V_{IN} = 10\text{V}, I_o = 40\text{mA}$	4.85	5.00	5.15	V
		$7\text{V} < V_{IN} < 25\text{V}$ $1\text{mA} < I_o < 40\text{mA}$	4.80		5.20	

		$1\text{mA} < I_O < 100\text{mA}$	4.75		5.25	
线性调整率	ΔV_O	$7\text{V} < V_{IN} < 25\text{V}, I_O = 10\text{mA}$		18	100	mV
		$8\text{V} < V_{IN} < 25\text{V}, I_O = 10\text{mA}$		10	70	
负载调整率	ΔV_O	$V_{IN} = 8\text{V}, 1\text{mA} < I_O < 100\text{mA}$		20	60	mV
		$V_{IN} = 8\text{V}, 1\text{mA} < I_O < 40\text{mA}$		5	30	
静态电流	I_Q			2.30	5	mA
静态电流变化	ΔI_Q	$8\text{V} < V_{IN} < 25\text{V}$		0.30	1	mA
		$1\text{mA} < I_O < 40\text{mA}$			1	
输出噪声电压	V_n	$f = 10\text{Hz to } 100\text{KHz}$		40		μV
电源抑制比	PSRR	$f = 100\text{Hz}, 8\text{V} < V_{IN} < 16\text{V}$	47	62		dB
峰值输出电流	I_{PK}			300		mA
电压温度系数	V_{TC}	$I_O = 10\text{mA}$		0.50		$\text{mV}/^\circ\text{C}$
低压差	V_{Drop}	$I_O = 100\text{mA}$		1.75	2	V
		$I_O = 200\text{mA}$		1.95	2.10	
最小输入电压	$V_{IN,MIN}$			6.50	7	V
过压保护阈值	$V_{IN,MAX}$	$I_O = 10\text{mA}$		38		V

Typical application



输出 5V 典型应用电路

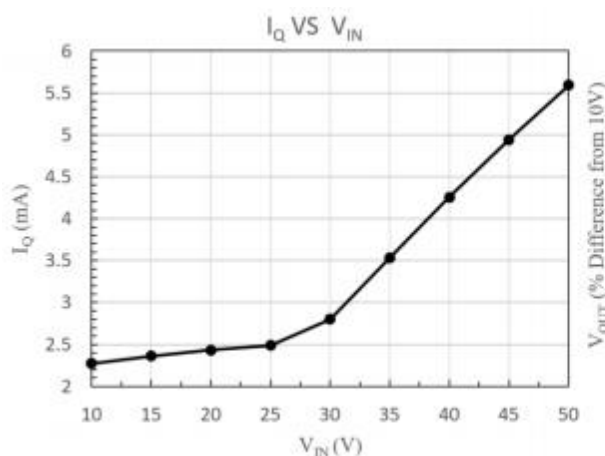
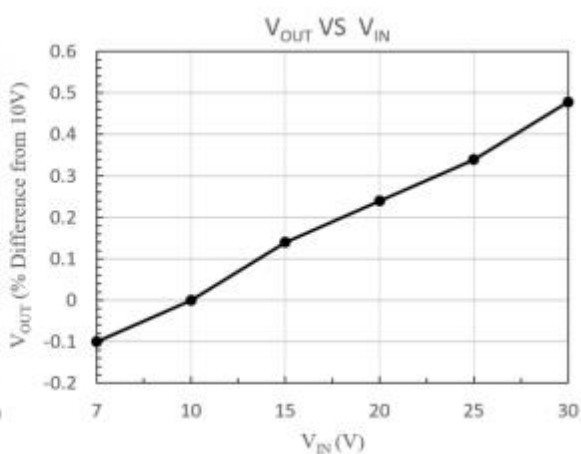
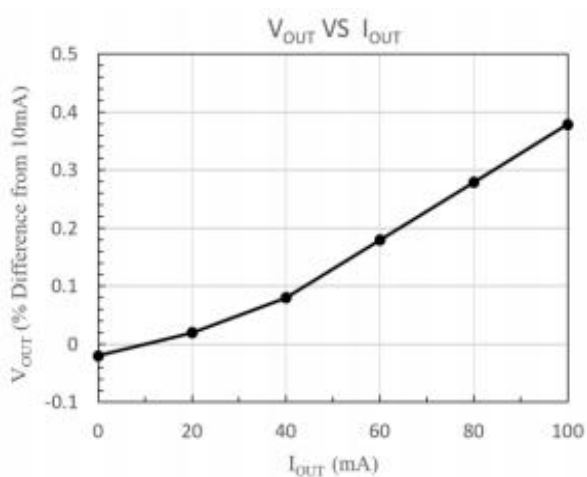
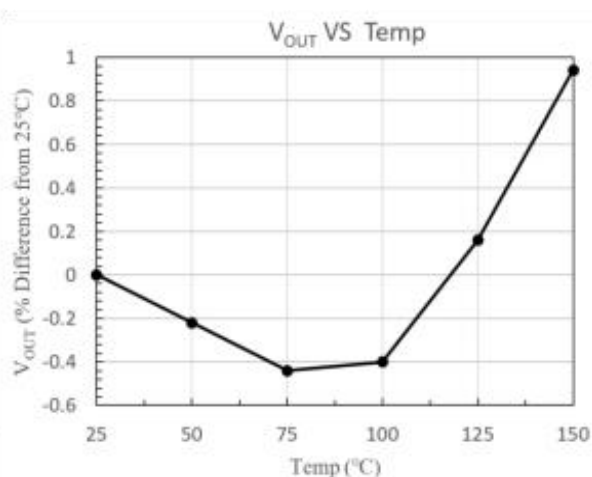
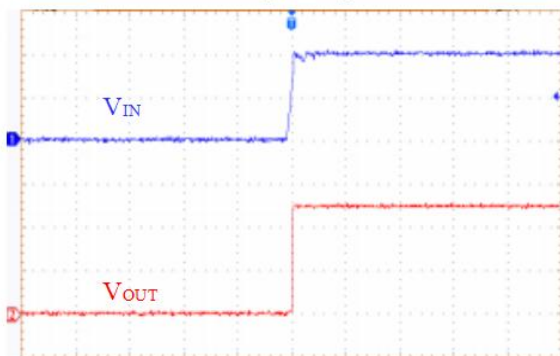
Typical Characteristics (C_{IN}=220nF, C_{OUT}=100nF)


图1 静态电流随输入电压变化


 图2 输出电压随输入电压变化(I_O=10mA)

 图3 输出电压随负载电流变化(V_{IN}=8V)

 图4 输出电压随温度变化(V_{IN}=10V, I_OUT=10mA)

Power Up Response

 CH1: V_{IN} (5V/DIV) CH2: V_{OUT} (2V/DIV)
 I_OUT=10mA, V_{IN}=0V-10V 上电

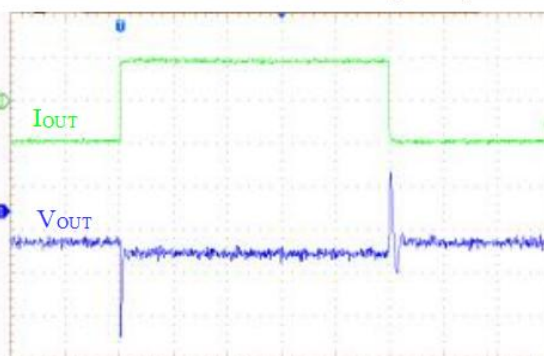
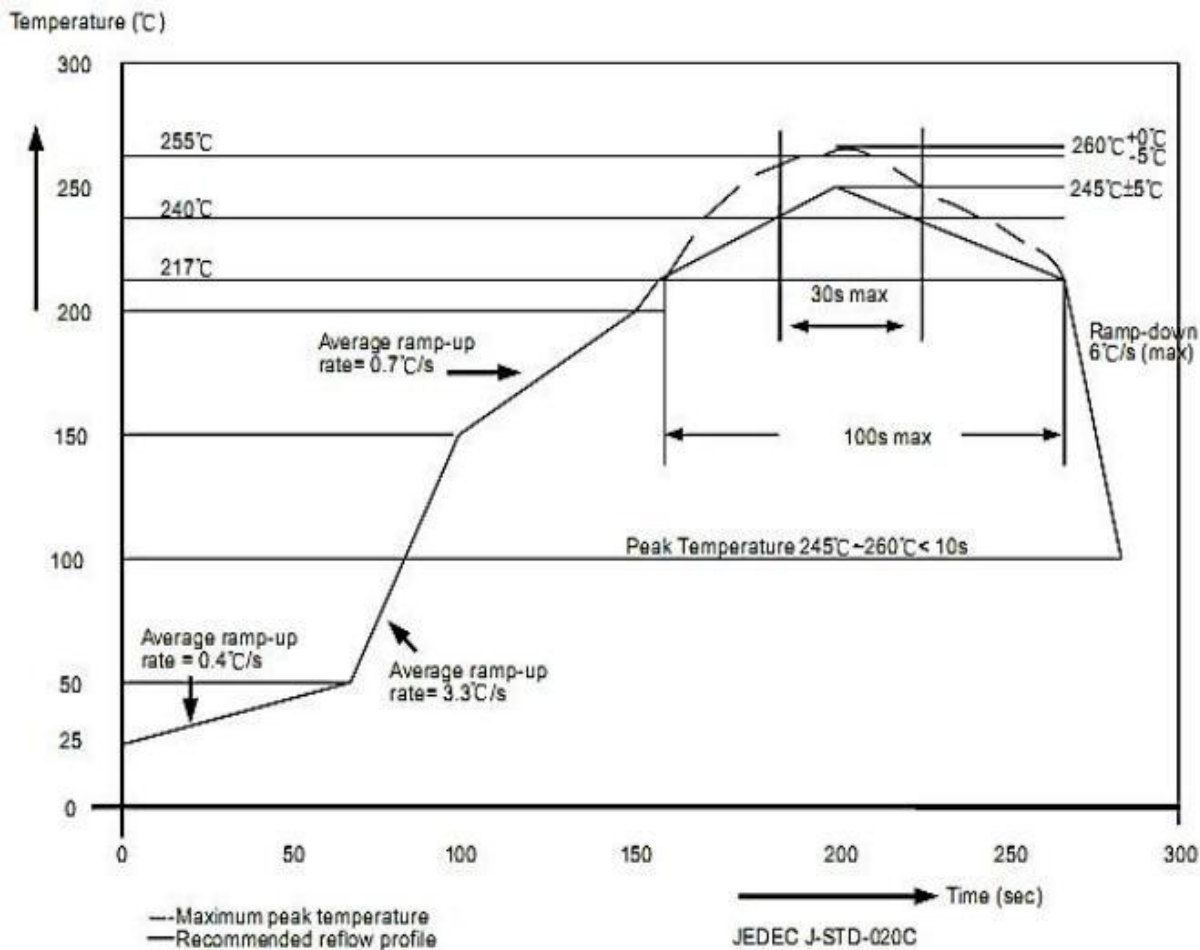
Load Transient Response

 CH1: V_{OUT} (50mV/DIV) CH3: I_OUT (50mA/DIV)
 V_{IN}=10V, I_OUT=10mA-100mA 改变

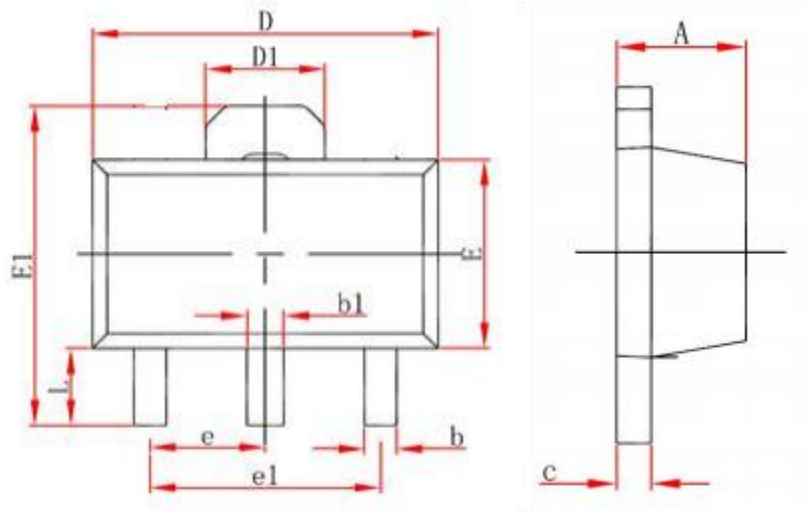
图5 电源上电瞬态响应

图6 负载变化瞬态响应



遵循欧洲 RoHs 标准，封装焊接制程锡炉温度符合 J-STD-020 标准

封装厚度	体积 $\text{mm}^3 < 350$	体积 $\text{mm}^3 : 350-2000$	体积 $\text{mm}^3 \geq 2000$
<1.6mm	260+0°C	260+0°C	260+0°C
1.6mm~2.5mm	260+0°C	250+0°C	245+0°C
$\geq 2.5\text{mm}$	250+0°C	245+0°C	245+0°C

Package Dimensions
SOT89-3


Symbol	Min(mm)	Max(mm)
A	1.3	1.8
b	0.2	0.7
b 1	0.25	0.75
c	0.2	0.6
D	4.3	4.8
E	2.2	2.8
E1	3.8	4.5
D1	1.55(REF)	
e	1.5(TYP)	
e 1	3.0(TYP)	
L	0.8	1.5



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