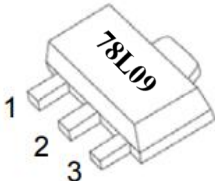



<b>Features</b> <ul style="list-style-type: none"> <li>➢ 采用50V工艺平台制造</li> <li>➢ 宽输入电压范围：10.50-35V输入</li> <li>➢ 全电压、全电流、全温下输出电压冗余范围±5%</li> <li>➢ 稳定输出电流达 100mA</li> <li>➢ 内建过温保护、过压保护、过流保护</li> </ul>	<b>Max <math>V_{in}</math></b>	<b><math>V_o</math></b>	<b>ID</b>
	<b>35V</b>	<b>9V</b>	<b>100mA</b>
<b>Package</b>    Marking and pin assignment	<b>Application</b> <ul style="list-style-type: none"> <li>➢ 仪器仪表</li> <li>➢ 主板电源</li> <li>➢ 设备电源模块</li> <li>➢ 多路电源系统</li> </ul>		
			
	<b>Pin No.</b>	<b>Name</b>	<b>Explication</b>
	1	Vout	输出
	2	GND	芯片地
	3	Vin	输入

**Package Marking and Ordering Information**

Device Marking	Device	Device Package	Quantity
78L09	78L09	SOT89-3	1000

**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	$^{\circ}\text{C}$

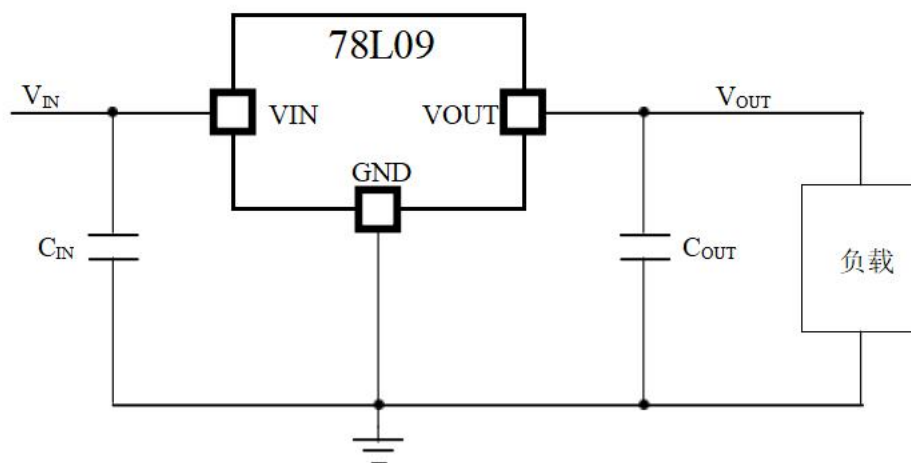
以上表格参数代表电路能够承受的极限范围。达到或者超过这个参数，电路不能正常工作，并且很大可能会损坏。并且长期工作在临界极限参数，也是会大大增加损坏的几率。

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
输出电压	$V_o$	$V_{IN} = 12\text{V}, I_o = 40\text{mA}$	8.73	9.00	9.27	V
		$11\text{V} < V_{IN} < 25\text{V}$ $1\text{mA} < I_o < 40\text{mA}$	8.55		9.45	

		$1\text{mA} < I_o < 100\text{mA}$	8.55		9.45	
线性调整率	$\Delta V_o$	$11\text{V} < V_{\text{IN}} < 25\text{V}, I_o = 10\text{mA}$		25	150	mV
		$11\text{V} < V_{\text{IN}} < 25\text{V}, I_o = 10\text{mA}$		15	100	
负载调整率	$\Delta V_o$	$V_{\text{IN}} = 11\text{V}, 1\text{mA} < I_o < 100\text{mA}$		30	100	mV
		$V_{\text{IN}} = 11\text{V}, 1\text{mA} < I_o < 40\text{mA}$		8	50	
静态电流	$I_Q$			2.30	5	mA
静态电流变化	$\Delta I_Q$	$11\text{V} < V_{\text{IN}} < 25\text{V}$		0.30	1	mA
		$1\text{mA} < I_o < 40\text{mA}$			1	
输出噪声电压	$V_n$	$f = 10\text{Hz to } 100\text{KHz}$		70		$\mu\text{V}$
电源抑制比	PSRR	$f = 100\text{Hz}, 11\text{V} < V_{\text{IN}} < 16\text{V}$	47	56		dB
峰值输出电流	$I_{\text{PK}}$			300		mA
电压温度系数	$V_{\text{TC}}$	$I_o = 10\text{mA}$		0.80		$\text{mV}/^\circ\text{C}$
低压差	$V_{\text{Drop}}$	$I_o = 100\text{mA}$		1.75	2	V
		$I_o = 200\text{mA}$		1.95	2.10	
最小输入电压	$V_{\text{IN,MIN}}$			10.50	11	V
过压保护阈值	$V_{\text{IN,MAX}}$	$I_o = 10\text{mA}$		42		V

### Typical application



输出 9V 典型应用电路

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

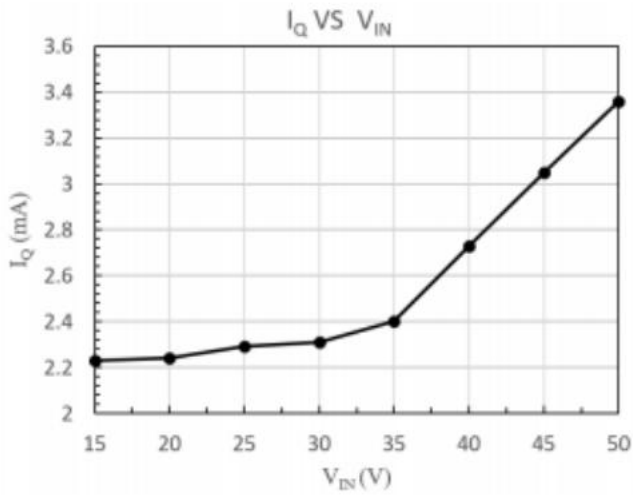


图1 静态电流随输入电压变化

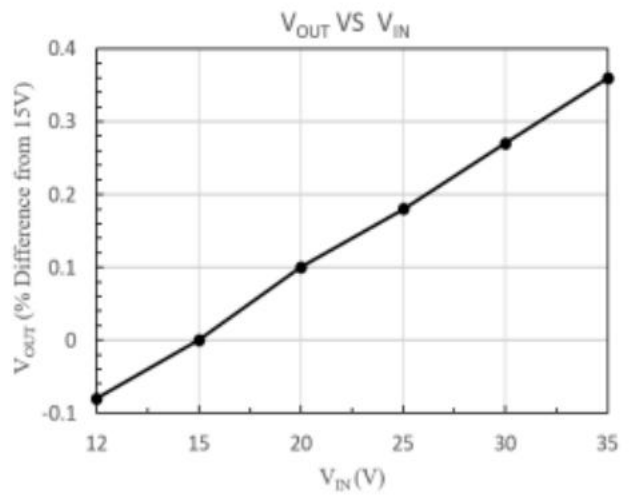


图2 输出电压随输入电压变化( $I_o=10mA$ )

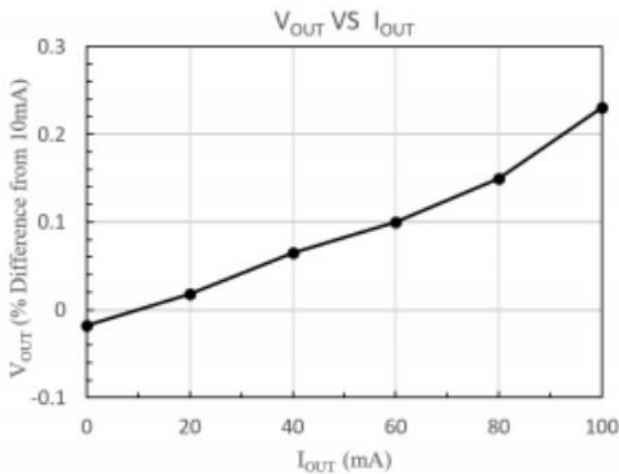


图3 输出电压随负载电流变化( $V_{IN}=12V$ )

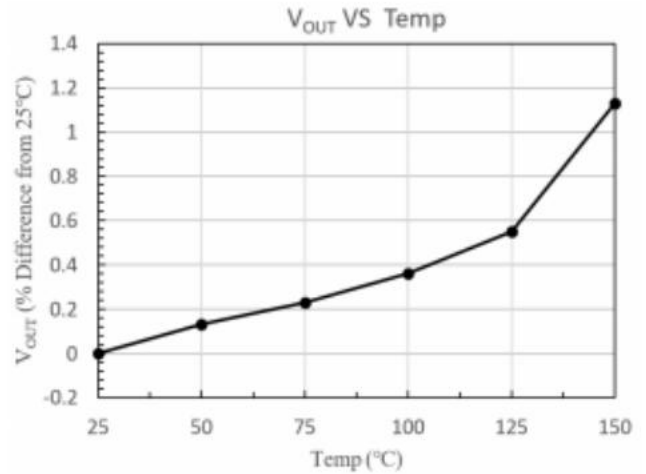
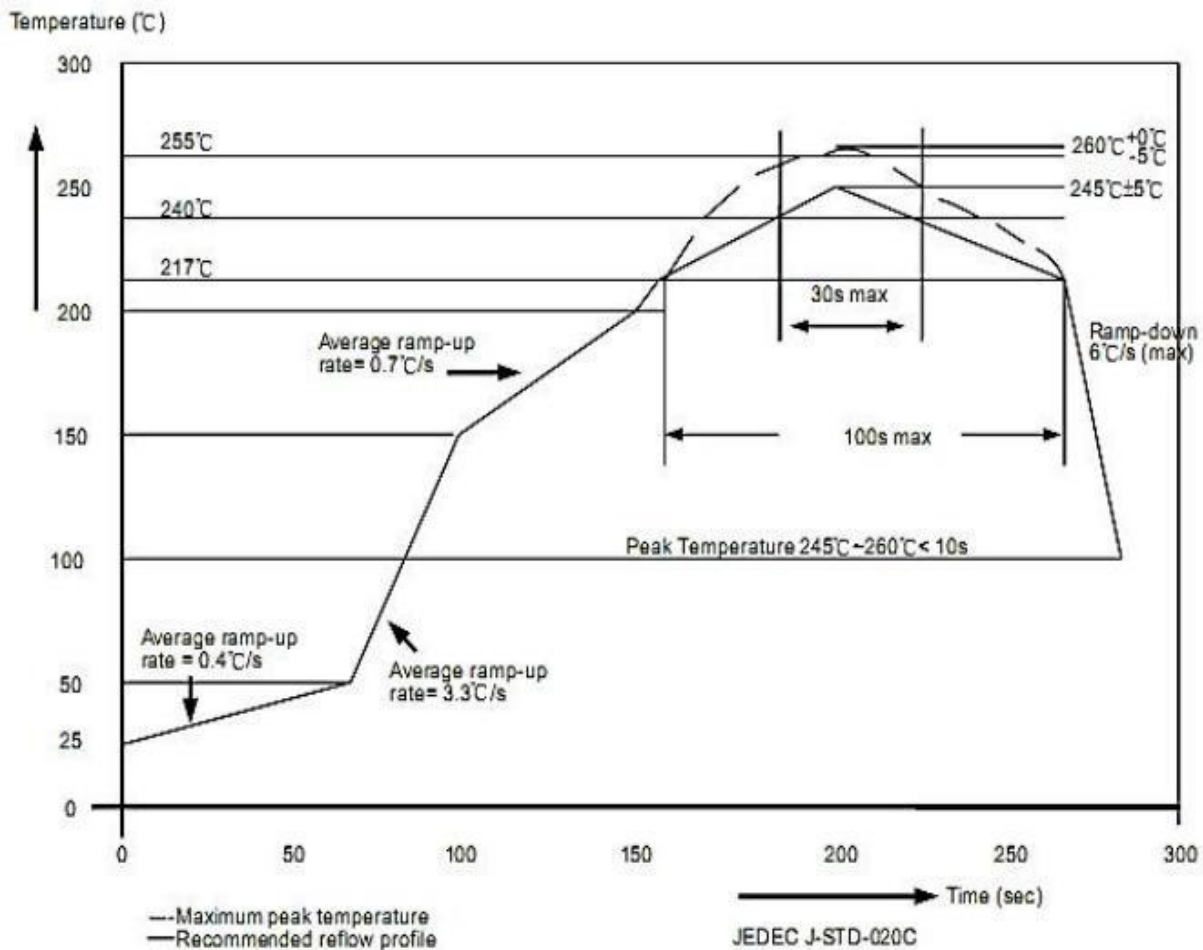
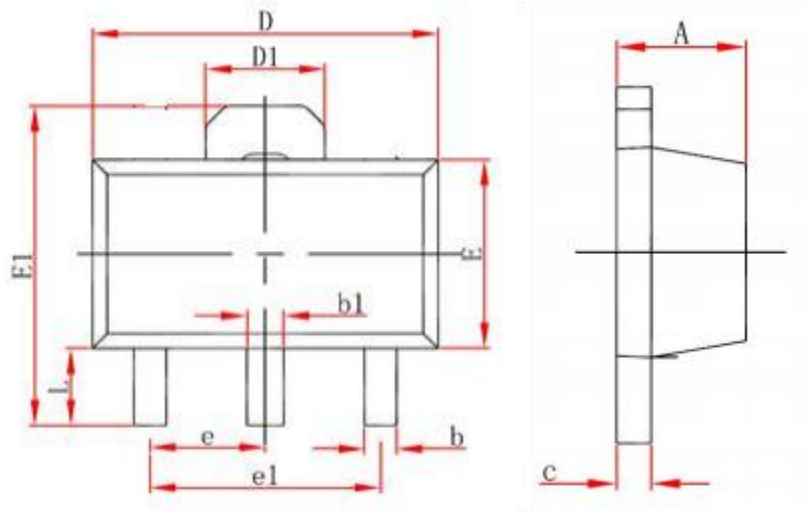


图4 输出电压随温度变化( $V_{IN}=10V, I_{OUT}=10mA$ )



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 mm <sup>3</sup> < 350	体积 mm <sup>3</sup> : 350-2000	体积 mm <sup>3</sup> ≥ 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
≥2.5mm	250+0°C	245+0°C	245+0°C

**PackageDimensions**
**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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