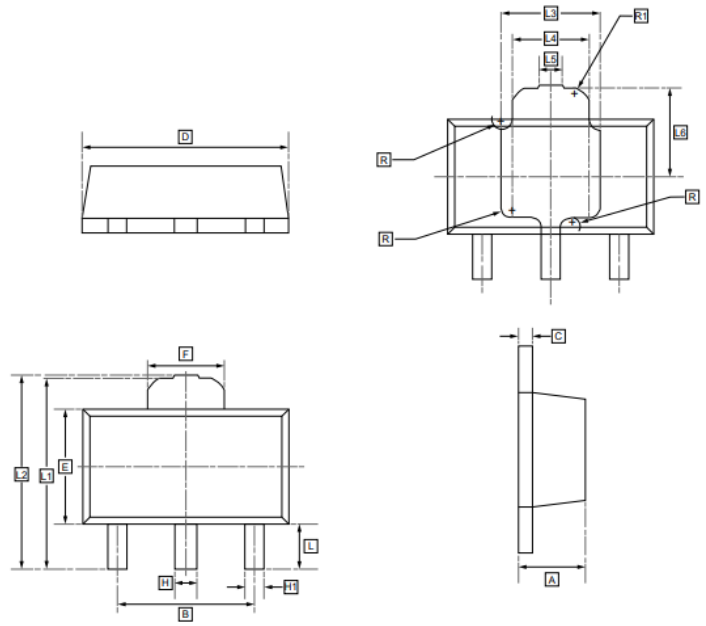
Adjustable Voltage Regulator

Primary characteristics		
Parameter	**Value**	**Unit**
Output voltage	5.0	V
Output current	100	mA

Features

- Pb-free and **RoHS** compliant
- Complete series of protections:
  Short circuit current limiting;
  Thermal overload protection;

Case dimensions



SOT-89

Unit mm	A	B	C	D	E	F	H	H1	L	L1	L2	L3	L4	L5	L6	R	R1
MIN	1.45	2.95	0.33	4.45	2.45	1.65	0.45	0.37	0.9	4.1	4.1	2.14	1.67	0.38	1.93	0.17	0.15
MAX	1.55	3.05	0.43	4.55	2.55	1.75	0.58	0.48	1.0	4.3	4.35	2.18	1.73	0.42	1.97		

Absolute maximum ratings				
Parameter		**Symbol**	**Rating**	**Unit**
Input voltage	V_O=3.3~18V	V_I	35	V
	V_O=24V		40	
Power dissipation		P_d	400	mW
Operating temperature		T_{OPR}	-20 ~ +120	°C
Storage Temperature		T_{STG}	-55 ~ +150	°C

Electrical characteristics

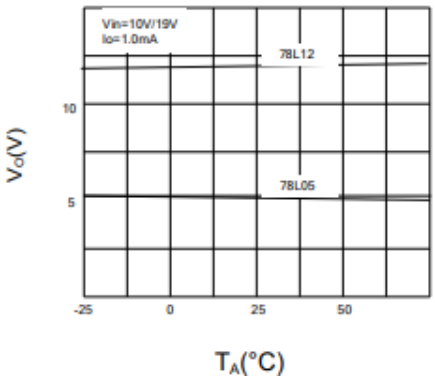
V_I=10V, I_O=40mA, 0<T_J<25°C, C_1=0.33μF, C_O=0.1μF, unless otherwise specified)[1)]

Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Output voltage	V_O	T_J=25°C	4.8	5.0	5.2	V[2)]
		7.5V ≤ V_I ≤ 20V,I_O=1mA~40mA	4.75	-	5.25	
		7.5V ≤ V_I ≤ V_{MAX},I_O=1mA~70mA	4.75	-	5.25	
Load regulation	ΔV_{OUT}	T_J=25°C,I_O=1mA~100mA	-	11	60	mV
		T_J=25°C,I_O=1mA~40mA	-	5.0	30	
Line regulation	ΔVo	7V ≤ V_I ≤ 20V,T_J=25°C	-	8	150	mV
		8V ≤ V_I ≤ 20V,T_J=25°C	-	6	100	
Quiescent current	Iq		-	2.0	5.5	mA
Quiescent current change	ΔIq	8V ≤ V_I ≤ 20V			1.5	mA
		1mA ≤ V_I ≤ 40mA			0.1	
Output noise voltage	V_N	10Hz ≤ f ≤ 100kHz		40		μV
Temperature coefficient of V_o	ΔVo/ΔT	I_o=5mA		0.65		mV/°C
Ripple rejection	RR	8V ≤ V_I ≤ 20V,f=120Hz,T_J=25°C	40	49		db
Dropout voltage	Vd	T_J=25°C		1.7		V

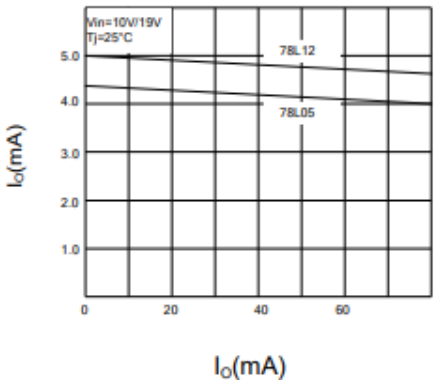
Notes:
1) The Maximum steady state usable output current and input voltage are very dependent on the heating sinking and/or lead temperature length of the package. The date above respresent pulse test conditions with junction temperatures as indicated at the initiation of test.
2) Power dissipation<0.75W.

Ratings and characteristic curves

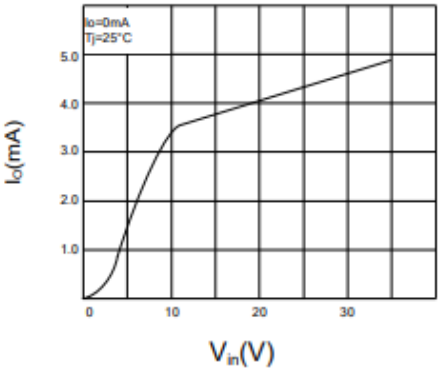
Output voltage vs. Ambient temperature



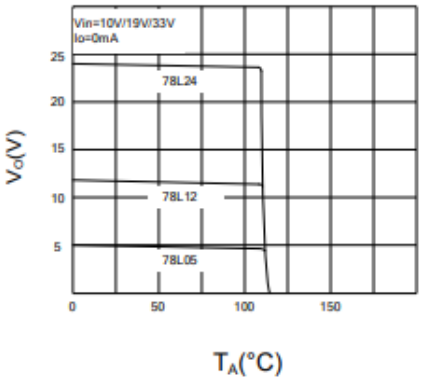
Quiescent current vs. Output current

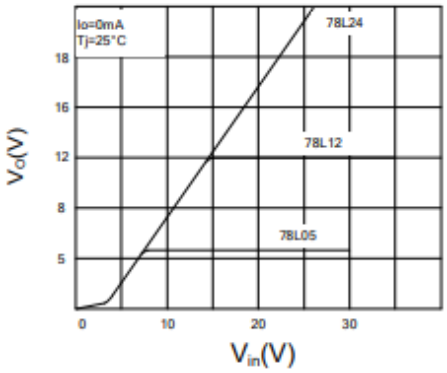
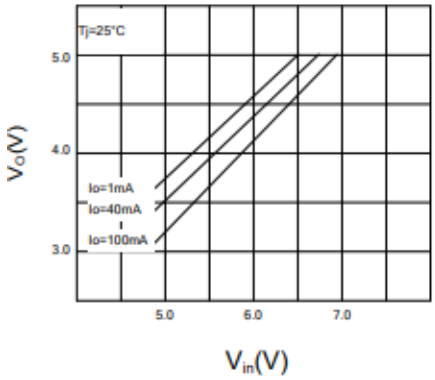


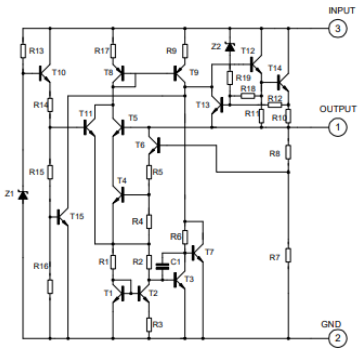
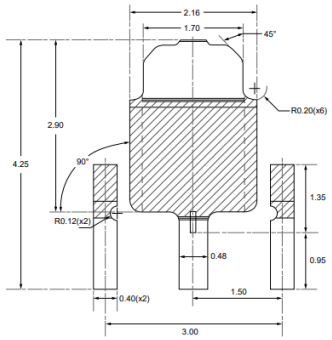
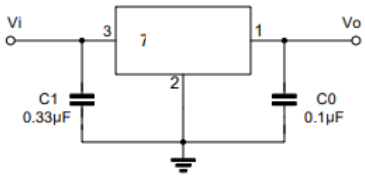
Quiescent current vs. Input voltage



Thermal shutdown



Output characteristics	Dropout characteristics
	

Block diagram	Suggested pad layout (unit mm)	Typical application
		

Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Ordering information			
Part Number	**Package**	**Shipping Quantity**	**Dimensions**
78L05	SOT-89	**1000**	---

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