



**THE DATASHEET OF
MC78L33F-TP**



Features

- Internal Thermal Overload Protection
- Internal Short Circuit Current Limiting
- No External Components Required
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)

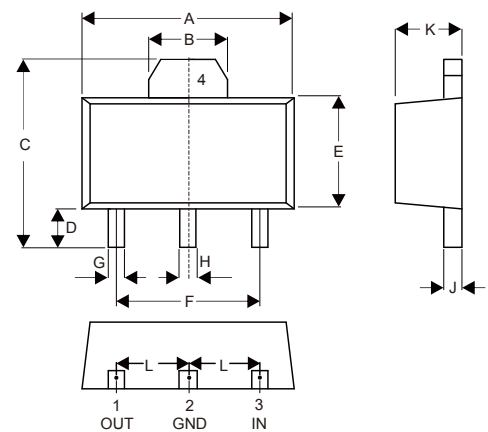
Maximum Ratings

Parameter	Symbol	Value	Unit
Input Voltage	V_I	30	V
Maximum Output Current	I_o	0.1	A
Power Dissipation	P_D	0.5	W
Operating Junction Temperature Range	T_{opr}	-40~125	°C
Storage Temperature Range	T_{STG}	-40~150	°C

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

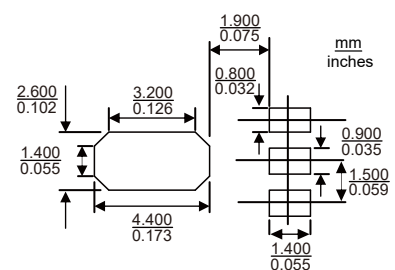
Three-Terminal Low Current Positive Voltage Regulators

SOT-89



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.169	0.185	4.30	4.70	
B	0.061		1.55		TYP.
C	0.154	0.171	3.91	4.35	
D	0.031	0.047	0.80	1.20	
E	0.089	0.104	2.25	2.65	
F	0.118		3.00		TYP.
G	0.013	0.020	0.33	0.52	
H	0.015	0.021	0.38	0.53	
J	0.014	0.017	0.35	0.44	
K	0.055	0.063	1.40	1.60	
L	0.059		1.50		TYP.

Suggested Solder Pad Layout

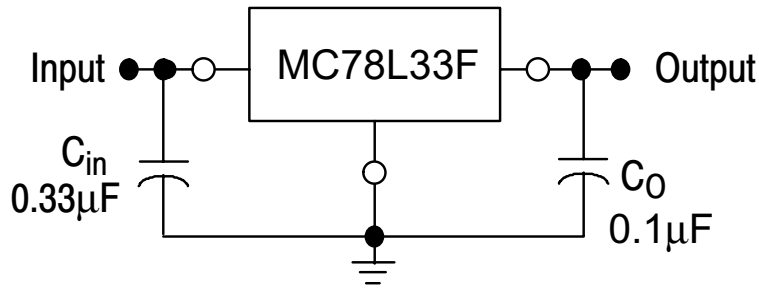


Electrical Characteristics

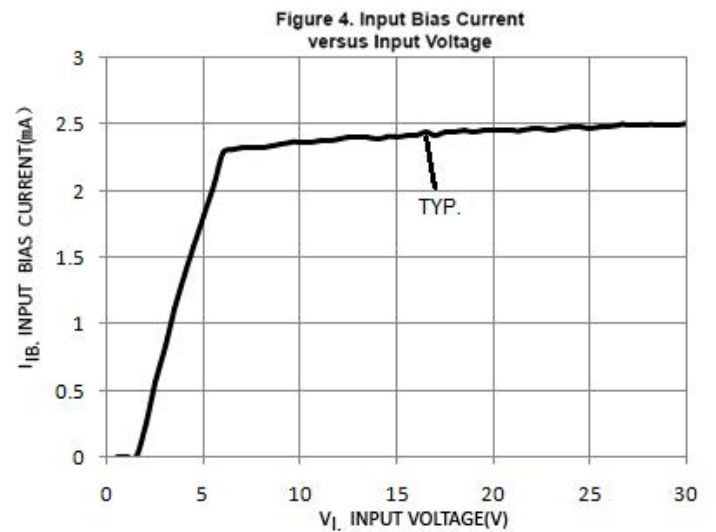
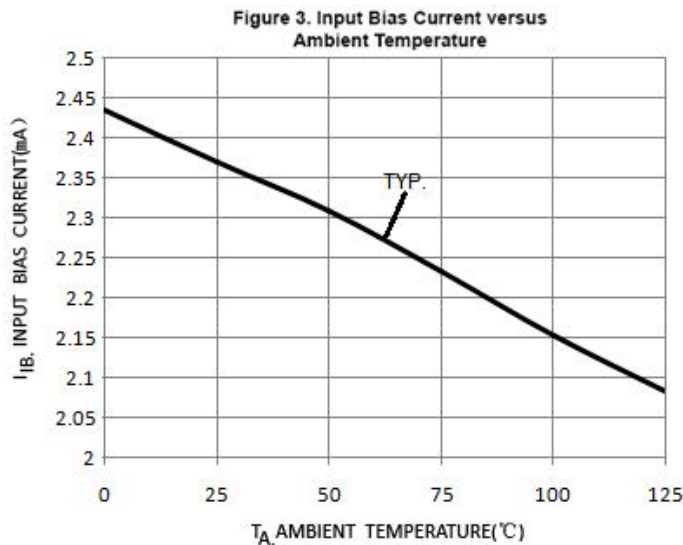
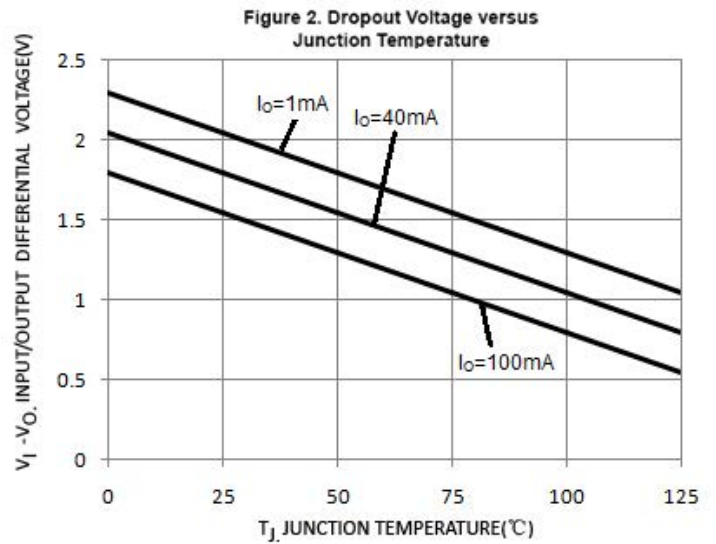
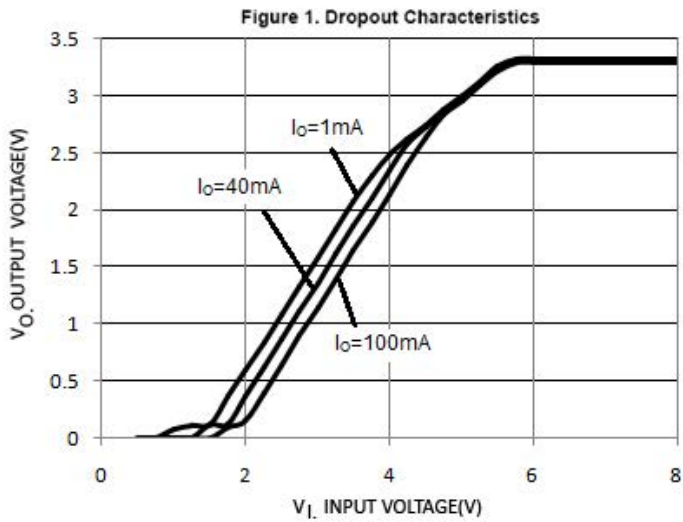
 ($V_i=10V$, $I_o=40mA$, $0^\circ C < T_j < 125^\circ C$, $C_i=0.33\mu F$, $C_o=0.1\mu F$, Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V _o	T _j =25°C	3.168	3.3	3.432	V
		7.0V ≤ V ₁ ≤ 20V, I _o =1mA-40mA	3.315	-	3.465	V
		V ₁ =8.3V I _o =1mA-70mA	3.315	-	3.465	V
Load Regulation	ΔV _o	I _o =1mA-100mA, T _j =25°C	-	-	60	mV
		I _o =1mA-40mA, T _j =25°C	-	-	30	mV
Line Regulation	ΔV _o	5.8V ≤ V ₁ ≤ 20V, T _j =25°C	-	-	150	mV
		6.3V ≤ V ₁ ≤ 20V, T _j =25°C	-	-	100	mV
Input Bias Current	I _{IB}	T _j =25°C	-	-	6.0	mA
		T _j =125°C	-	-	5.5	mA
Input Bias Current Change	ΔI _{IB}	6.3V ≤ V ₁ ≤ 20V	-	-	1.5	mA
		1mA ≤ I _o ≤ 40mA	-	-	0.1	mA
Output Noise Voltage	V _N	10Hz ≤ f ≤ 100KHz	-	40	-	μV
Ripple Rejection	RR	6.3V ≤ V ₁ ≤ 16.3V, f=120Hz, T _j =25°C	41	49	-	dB
Dropout Voltage	V _L .V _o	T _j =25°C	-	2.5	-	V

Typical Application



Curve Characteristics



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:1Kpcs/Reel

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