



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)

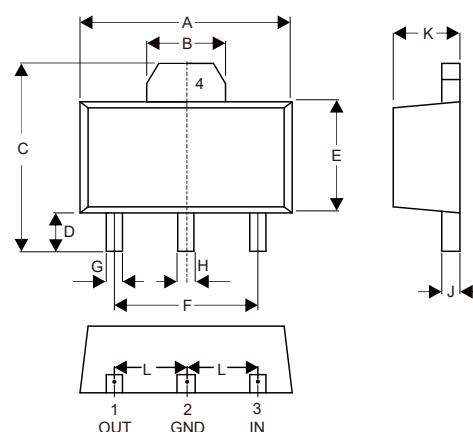
Maximum Ratings

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.

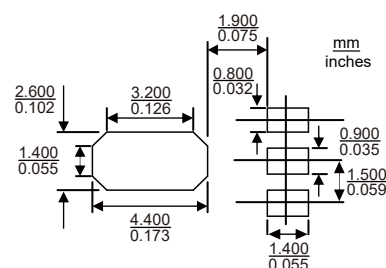
Three-Terminal Low Current Positive Voltage Regulators

SOT-89



DIMENSIONS					
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

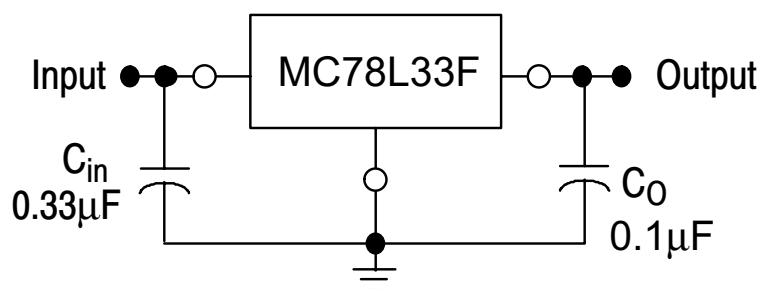


Electrical Characteristics

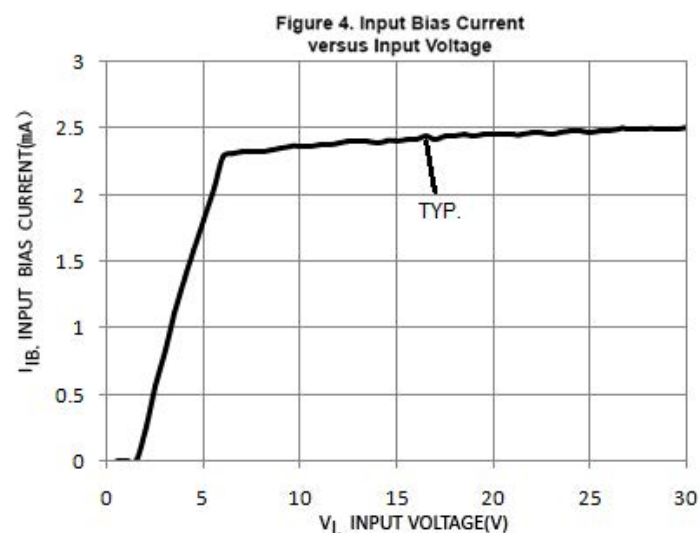
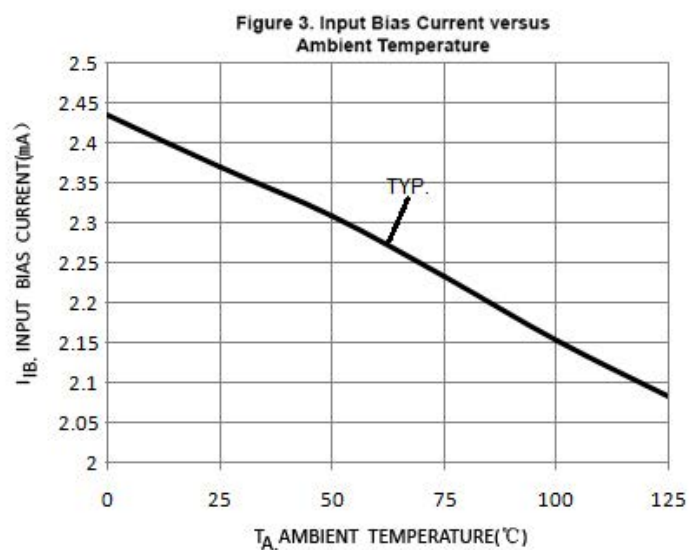
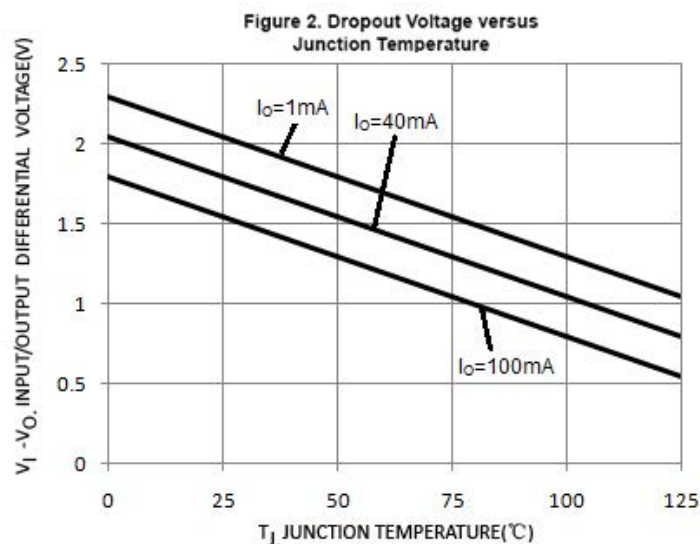
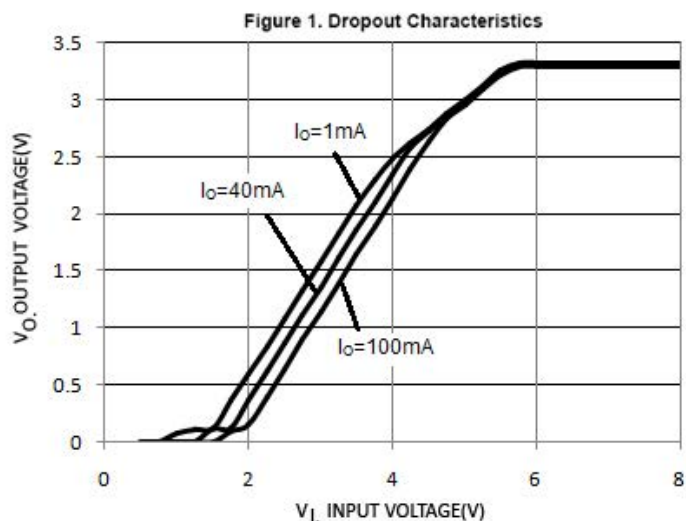
($V_i=10V$, $I_o=40mA$, $0^{\circ}C < T_j < 125^{\circ}C$, $C_i=0.33\mu F$, $C_o=0.1\mu F$, Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$T_j=25^{\circ}C$	3.168	3.3	3.432	V
		$7.0V \leq V_i \leq 20V$, $I_o=1mA-40mA$	3.315	-	3.465	V
		$V_i=8.3V$ $I_o=1mA-70mA$	3.315	-	3.465	V
Load Regulation	ΔV_o	$I_o=1mA-100mA$, $T_j=25^{\circ}C$	-	-	60	mV
		$I_o=1mA-40mA$, $T_j=25^{\circ}C$	-	-	30	mV
Line Regulation	ΔV_o	$5.8V \leq V_i \leq 20V$, $T_j=25^{\circ}C$	-	-	150	mV
		$6.3V \leq V_i \leq 20V$, $T_j=25^{\circ}C$	-	-	100	mV
Input Bias Current	I_{IB}	$T_j=25^{\circ}C$	-	-	6.0	mA
		$T_j=125^{\circ}C$	-	-	5.5	mA
Input Bias Current Change	ΔI_{IB}	$6.3V \leq V_i \leq 20V$	-	-	1.5	mA
		$1mA \leq I_o \leq 40mA$	-	-	0.1	mA
Output Noise Voltage	V_N	$10Hz \leq f \leq 100KHz$	-	40	-	μV
Ripple Rejection	RR	$6.3V \leq V_i \leq 16.3V$, $f=120Hz$, $T_j=25^{\circ}C$	41	49	-	dB
Dropout Voltage	$V_{L.V_o}$	$T_j=25^{\circ}C$	-	2.5	-	V

Typical Application



Curve Characteristics



Ordering Information

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

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