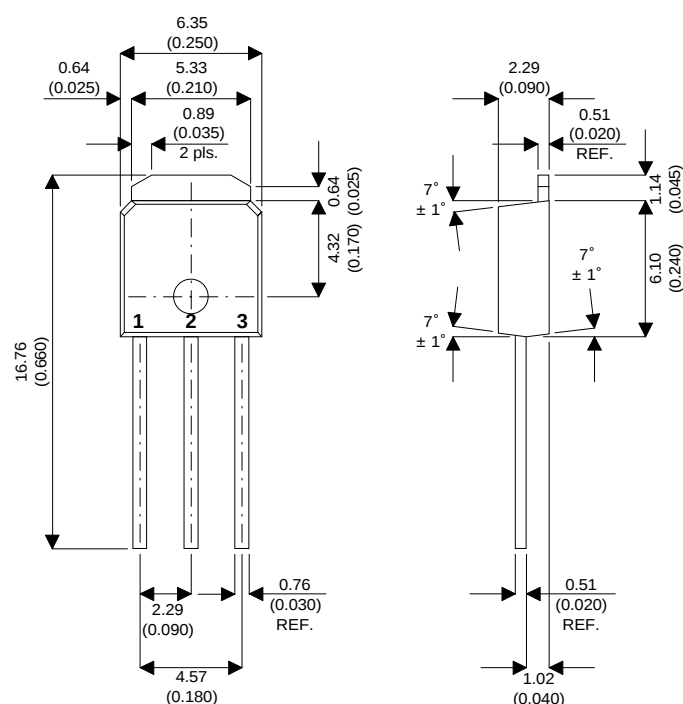


Dimensions in mm (inches)



3 TERMINAL LOW CURRENT 12 VOLT POSITIVE VOLTAGE REGULATOR

- **0.01%/V LINE REGULATION**
- **0.3%/A LOAD REGULATION**
- **THERMAL OVERLOAD PROTECTION**
- **SHORT CIRCUIT PROTECTION**
- **SAFE OPERATING AREA PROTECTION**
- **1% OUTPUT VOLTAGE TOLERANCE**

Pin 1 – V_{IN} Pin 2 – GND Pin 3 – V_{OUT}

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V _I	DC Input Voltage	35V
P _D	Power Dissipation	Internally limited
T _j	Operating Junction Temperature Range	0°C to 125°C
	Maximum Junction Temperature	125°C
T _{stg}	Storage Temperature Range	−65°C to +150°C
T _L	Lead Temperature (Soldering, 10 sec)	300°C

ELECTRICAL CHARACTERISTICS ($T_j = 25^\circ\text{C}$ unless stated)

Parameter	Test Conditions	IP78M12ADP			IP78M12DP			Unit
		Min.	Typ.	Max.	Min.	Typ.	Max.	
V_O Output Voltage*	$I_O = 100\text{mA}$ $V_{IN} = 19\text{V}$	11.88	12	12.12	11.50	12	12.50	V
	$I_O = 5\text{mA to } 350\text{mA}$ $V_{IN} = 14.8 \text{ to } 27\text{V}$ $T_j = 0 \text{ to } 125^\circ\text{C}$ $P_D \leq P_{MAX}$	11.64		12.36	11.4		12.6	
ΔV_O Line Regulation*	$I_O = 200\text{mA}$ $V_{IN} = 14.5 \text{ to } 30\text{V}$		4	18			60	mV
	$I_O = 200\text{mA}$ $V_{IN} = 16 \text{ to } 30\text{V}$ $T_j = 0 \text{ to } 125^\circ\text{C}$		4	18			30	
	$I_O = 500\text{mA}$ $V_{IN} = 16 \text{ to } 22\text{V}$		4	18			120	
ΔV_O Load Regulation*	$I_O = 5\text{mA to } 500\text{mA}$ $V_{IN} = 19\text{V}$ $T_j = 0 \text{ to } 125^\circ\text{C}$		10	60			120	mV
I_d Quiescent Current*	$I_O = 350\text{mA}$ $V_{IN} = 19\text{V}$ $T_j = 0 \text{ to } 125^\circ\text{C}$		4	6		4	6	mA
ΔI_Q Quiescent Current Change*	$I_O = 5 \text{ to } 500\text{mA}$ $V_{IN} = 19\text{V}$ $T_j = 0 \text{ to } 125^\circ\text{C}$		0.1	0.5			0.5	mA
	$I_O = 200\text{mA}$ $V_{IN} = 14.8 \text{ to } 30\text{V}$ $T_j = 0 \text{ to } 125^\circ\text{C}$		0.2	0.8			0.8	
V_N Output Noise Voltage	$f = 10\text{Hz to } 100\text{kHz}$		75	480		75	480	μV
$\frac{\Delta V_{IN}}{\Delta V_O}$ Ripple Rejection	$V_{IN} = 15 \text{ to } 25\text{V}$ $f = 120\text{Hz}$ $I_O = 300\text{mA}$	58	72		55			dB
	$V_{IN} = 15 \text{ to } 25\text{V}$ $f = 120\text{Hz}$ $I_O = 100\text{mA}$ $T_j = 0 \text{ to } 125^\circ\text{C}$	58	72		55			
Dropout Voltage*	$I_O = 350\text{mA}$		2	2.5			2.5	V
I_{SC} Short Circuit Current*	$V_{IN} = 35\text{V}$		300	600		300	600	mA
I_{PK} Peak Output Current*	$V_{IN} = 19\text{V}$	0.7	1.0	1.4		1.0	1.6	A
Average Temperature Coefficient of Output Voltage*	$I_O = 5\text{mA}$		1.2	4.8		1.2		$\text{mV} / ^\circ\text{C}$

* Pulse Test: $t_p \leq 10\text{ms}$, $\delta \leq 5\%$.

All characteristics are measured with a capacitor across the input of $0.22\mu\text{F}$ and a capacitor across the output of $0.1\mu\text{F}$. Output Voltage changes due to changes in internal temperature must be taken into account separately.