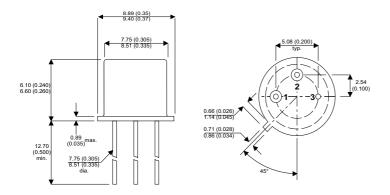


IP117MAHVH IP117MHVH LM117HVH IP117MAH IP117MH LM117H

MECHANICAL DATA

Dimensions in mm (inches)



H Package TO39

Pin 1 = V_{in} Pin 2 = ADJ. Pin 3 = V_{out}

0.5 AMP POSITIVE ADJUSTABLE VOLTAGE REGULATOR

FEATURES

- Ouput Voltage Range Adjustable:
 1.25 to 40V For Standard Version
 1.25 to 60V For –HV Version
- 1% Output Voltage Tolerance (-A Versions)
- 0.3% Load Regulation
- 0.01%/V Line Regulation
- Complete Series Of Protections:
 - Current Limiting
 - Thermal Shutdown
 - SOA Control
- Also Available In Ceramic SMD1 and LCC4 Hermetic Ceramic Surface Mount Packages.

DESCRIPTION

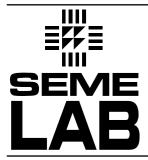
The IP117M Series are three terminal positive adjustable voltage regulators capable of supplying in excess of 0.5A over a 1.25V to 60V output range. These regulators are exceptionally easy to use and require only two external resistors to set the output voltage. In addition to improved line and load regulation, a major feature of the "A" series is the initial output voltage tolerance, which is guaranteed to be less than 1%.

Over full operating conditions, including load, line, and power dissipation, the reference voltage is guaranteed not to vary more than 2%. These devices exhibit current limit, thermal overload protection, and improved power device safe operating area protection, making them essentially indestructible.

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

V_{I-O}	Input - Output Differential Voltage	Standard	40V		
		HV Series	60V		
P_{D}	Power Dissipation		Internally limited		
T_J	Operating Junction Temperature Range		−55 to 150°C		
T_{STG}	Storage Temperature		−65 to 150°C		

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IP117MAHVH IP117MHVH LM117HVH

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				IP117MAHV IP117MA			IP117MHV , IP117M				
Parameter		Test Conditions			Min.	Тур.	Max.	Min.	Тур.	Max.	Units
	Reference Voltage	I _{OUT} = 10mA			1.238	1.25	1.262				V
V_{REF}		I _{OUT} = 10mA t	o I _{MAX}								
		$V_{IN} - V_{OUT} = 3V \text{ to } V_{MAX}$ $P \le P_{MAX}$ $T_J = -55 \text{ to } +150^{\circ}\text{C}$			1.220	1.250	1.270	1.200	1.250	1.300	V
ΔV_{OUT}	Line Regulation ¹	$V_{IN} - V_{OUT} = 3V \text{ to } V_{MAX}$			0.005	0.010		0.010	0.020	%/V	
ΔV_{IN}			$T_J = -55 \text{ to } +150^{\circ}\text{C}$			0.010	0.020		0.020	0.050	% / V
	Load Regulation ¹	I _{OUT} = 10mA t	o I _{MAX}	V _{OUT} ≤ 5V		5	15		5	15	mV
ΔV_{OUT}				V _{OUT} ≥ 5V		0.1	0.3		0.1	0.3	%
ΔI_{OUT}		I _{OUT} = 10mA t	o I _{MAX}	V _{OUT} ≤ 5V		15	50		20	50	mV
		$T_J = -55 \text{ to } +150^{\circ}\text{C}$ $V_{OUT} \ge 5V$			0.3	1		0.3	1	%	
	Thermal Regulation	t _p = 20ms				0.002	0.020		0.030	0.070	%/W
		101/		$C_{ADJ} = 0$		65			65		dB
	Ripple Rejection	V _{OUT} = 10V		C _{ADJ} = 10μF				66 8			dB
		f = 120Hz		55 to +150°C	66 80	ļ	80				
I_{ADJ}	Adjust Pin Current	$T_{J} = -55 \text{ to } +150^{\circ}\text{C}$				50	100		50	100	μΑ
ΔI_{ADJ}	Adjust Pin Current	I _{OUT} = 10mA t	o I _{MAX}								
		$T_J = -55 \text{ to } +150^{\circ}\text{C}$ $V_{IN} - V_{OUT} = 2.5\text{V to } V_{MAX}$			0.2	0.2	2 5	0.2	5	μΑ	
	Change										
		$V_{IN} - V_{OUT} = 4$	40V			0.5			0.5		
I _{MIN}	Minimum Load	$T_J = -55 \text{ to } +150^{\circ}\text{C}$ $V_{IN} - V_{OUT} = 60V \text{ (HV SERIES)}$ $T_J = -55 \text{ to } +150^{\circ}\text{C}$				3.5	5	3.5	3.5	5	mA
	Current					3.5	7			7 mA	
									3.5		
I _{CL}		V _{IN} − V _{OUT} ≤ 15V		0.50 0.8			0.50			А	
	0	$T_{\rm J} = -55 \text{ to } +150^{\circ}\text{C}$			0.80		0.50	0.80			
	Current Limit	$V_{IN} - V_{OUT} = 4$	40V		0.15	0.20		0.15	0.20		
		V _{IN} - V _{OUT} = 60V (HV SERIES)			0.30			0.30		A	
ΔV_{OUT}	Temperature									1	
∆TEMP Stability		$T_{J} = -55 \text{ to } +150^{\circ}\text{C}$			1	2		1		%	
ΔV_{OUT}	. –			(%	
$\Delta TIME$	Long Term Stability	$T_A = +125$ °C			0.3	1		0.3	1		
e _n	RMS Output Noise				0.55:		0.001				
"	(% of V _{OUT})	f = 10 Hz to 10 kHz			0.0	0.001		0.001		%	
$R_{\theta JC}$	Thermal Resistance	10045	204 5								
	Junction to Case	LCC4 Package			TBA		TBA			°C/W	

¹⁾ Regulation is measured at constant junction temperature, using pulse testing at a low duty cycle. Changes in output voltage due to heating effects are covered under thermal regulation specifications. Load regulation is measured 1/8" below the base of the package on the output pin.

2) Test Conditions unless othewise stated: $V_{IN} - V_{OUT} = 5V$, $T_J = 25^{\circ}C$, $I_{OUT} = 0.1A$, $P_{MAX} = TBA$, $I_{MAX} = 0.5A$ $V_{MAX} = 40V$ for standard series , 60V for HV series.

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