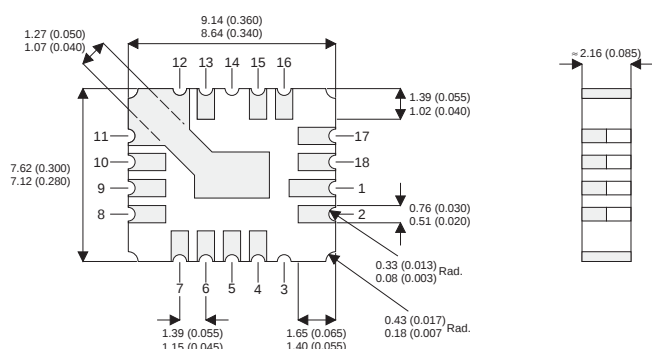


MECHANICAL DATA

Dimensions in mm (inches)



LCC4 CERAMIC SURFACE MOUNT

Pads 4,5 – Adjust

Pads 6,7,8,9,10,11,12,13 – V_{OUT}

Pads 15,16,17,18,1,2 – V_{IN}

0.5 AMP NEGATIVE ADJUSTABLE VOLTAGE REGULATOR IN CERAMIC SURFACE MOUNT PACKAGE

FEATURES

- –1.2V TO 47V OUTPUT VOLTAGE RANGE
- 0.5A OUTPUT CURRENT
- 1% OUTPUT VOLTAGE TOLERANCE
- 0.5% / A LOAD REGULATION
- 0.01% / V LINE REGULATION
- 0.02% / W THERMAL REGULATION
- INTERNAL PROTECTION

Internal current and power limiting coupled with true thermal limiting prevents device damage due to overloads or shorts, even if the regulator is not fastened to a heat sink.

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise stated)

V_{I-O}	Input - Output Differential Voltage	– Standard	40V
		– HV Series	50V
I_O	Output Current		Internally limited
P_D	Power Dissipation		Internally limited
T_J	Operating Junction Temperature Range		–55 to +150°C
T_{STG}	Storage Temperature		–65 to 150°C

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

Semelab plc. Telephone +44(0)1455 556565. Fax +44(0)1455 552612.

E-mail: sales@semelab.co.uk

Website: <http://www.semelab.co.uk>

Document Number 2830

Issue 2

Parameter	Test Conditions	IP137MAHV IP137MA			IP137MHV , IP137M			Units
		Min.	Typ.	Max.	Min.	Typ.	Max.	
V_{REF} Reference Voltage	$I_{OUT} = 10mA$	-1.238	-1.25	-1.262	-1.225	-1.25	-1.275	V
	$I_{OUT} = 10mA$ to I_{MAX} $V_{IN} - V_{OUT} = 3V$ to V_{MAX} $P \leq P_{MAX}$ $T_J = -55$ to $150^\circ C$	-1.220	-1.25	-1.280	-1.200	-1.25	-1.300	V
$\frac{\Delta V_{OUT}}{\Delta V_{IN}}$ Line Regulation 1	$V_{IN} - V_{OUT} = 3V$ to V_{MAX} $T_J = -55$ to $150^\circ C$	0.005	0.010		0.010	0.020		%V
		0.010	0.030		0.020	0.050		
$\frac{\Delta V_{OUT}}{\Delta I_{OUT}}$ Load Regulation 1	$I_{OUT} = 10mA$ to I_{MAX} $T_J = -55$ to $150^\circ C$	$V_{OUT} \leq 5V$		5	25	15	25	mV
		$V_{OUT} \geq 5V$		0.1	0.5	0.3	0.5	%
	$I_{OUT} = 10mA$ to I_{MAX} $T_J = -55$ to $150^\circ C$	$V_{OUT} \leq 5V$		10	50	20	50	mV
		$V_{OUT} \geq 5V$		0.2	1	0.3	1	%
Thermal Regulation	$t_p = 10ms$ $T_A = 25^\circ C$	0.002	0.020		0.002	0.02		%/W
Ripple Rejection	$V_{OUT} = -10V$ $f = 120Hz$	$C_{ADJ} = 0$		60	66	60		dB
		$C_{ADJ} = 10\mu F$ $T_J = -55$ to $150^\circ C$		70	80	66	77	dB
I_{ADJ} Adjust Pin Current	$T_J = -55$ to $150^\circ C$	65	100		65	100		μA
ΔI_{ADJ} Adjust Pin Current Change	$T_J = -55$ to $+150^\circ C$	$I_{OUT} = 10mA$ to I_{MAX}		0.2	2	0.5	5	μA
		$V_{IN} - V_{OUT} = 3V$ to $40V$		1.0	5	2	5	
		$V_{IN} - V_{OUT} = 3V$ to $50V$ (HV SERIES)		2.0	6	3	6	
I_{MIN} Minimum Load Current	$T_J = -55$ to $150^\circ C$	$V_{IN} - V_{OUT} \leq 40V$		2.5	5	2.5	5	mA
		$V_{IN} - V_{OUT} \leq 10V$		1.2	3	1.2	3	
I_{CL} Current Limit	$T_J = -55$ to $150^\circ C$	$V_{IN} - V_{OUT} \leq 15V$		0.50	0.80	1.5	0.50	A
		$V_{IN} - V_{OUT} = 40V$		0.15	0.17		0.15	
		$V_{IN} - V_{OUT} = 50V$ (HV SERIES)		0.10	0.17	0.5	0.10	
$\frac{\Delta V_{OUT}}{\Delta TEMP}$ Temperature Stability	$T_J = -55$ to $150^\circ C$	0.6	1.5		0.6			%
$\frac{\Delta V_{OUT}}{\Delta TIME}$ Long Term Stability	$T_A = +125^\circ C$ $t = 1000$ Hrs	0.3	1		0.3	1		%
e_n RMS Output Noise (% of V_{OUT})	$f = 10$ Hz to 10 kHz $T_A = 25^\circ C$	0.003			0.003			%
$R_{\theta JC}$ Thermal Resistance Junction to Case	LCC4 Package		13			13		$^\circ C/W$

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.

2) Test Conditions unless otherwise stated: $V_{IN} - V_{OUT} = 5V$, $I_{OUT} = 0.1A$, $P_{MAX} = 10W$, $I_{MAX} = 0.5A$
 $V_{MAX} = 40V$ for standard series, $50V$ for HV series.

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

Semelab plc. Telephone +44(0)1455 556565. Fax +44(0)1455 552612.

E-mail: sales@semelab.co.uk Website: <http://www.semelab.co.uk>

Document Number 2830

Issue 2