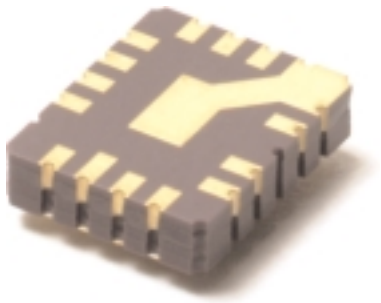
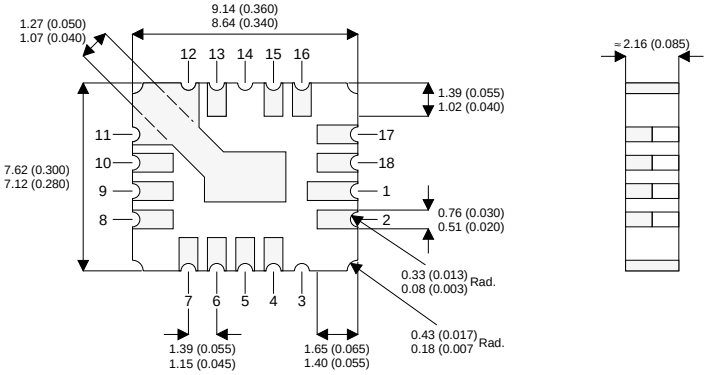
LT1085LCC4

MILITARY VERSION

MECHANICAL DATA
Dimensions in mm (inches)

CERAMIC SURFACE MOUNT LOW DROPOUT POSITIVE ADJUSTABLE VOLTAGE REGULATOR FOR HI-REL APPLICATIONS





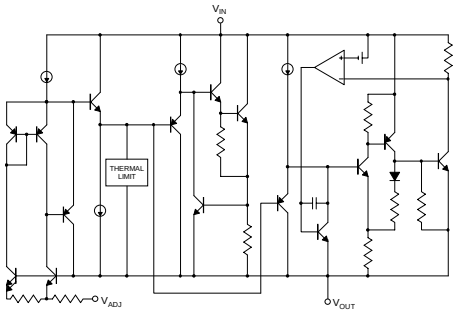
LCC4

Pads 5,4 = adjust
Pads 6,7,8,9,10,11,13 = Vin
Pads 1,2,15,16,17,18 = Vout

FEATURES

- **Ceramic Surface Mount Hermetic Package**
- **Low Dropout Performance**
- **Output Current 3A**
- **Line Regulation 0.015% / V Typical.**
- **Load Regulation 0.1% Typical.**
- **Full Temperature Range (–55 to +150°C)**

BLOCK DIAGRAM



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

V_{I-O}	Input–Output Differential Voltage		30V
P_D	Power Dissipation		Internally limited
V_{IN}	Operating Input Voltage		25V
T_J	Operating Junction Temperature Range	Control	–55 to 150°C
		Power	–55 to 200°C
T_{STG}	Storage Temperature Range		–65 to 150°C
θ_{JC}	Thermal Resistance (junction to case)		13°C/W

* Although the devices' maximum operating voltage is limited to 25V the devices are guaranteed to withstand transient input voltages up to 30V. For input voltages greater than the maximum operating input voltage, some degradation of specifications will occur.

Semelab plc. Telephone +44(0)1455 556565. Fax +44(0)1455 552612.
E-mail: sales@semelab.co.uk Website: http://www.semelab.co.uk

LT1085LCC4

MILITARY VERSION

DESCRIPTION

The LT1085 is designed to provide 3A with higher efficiency than currently available devices. All internal circuitry is designed to operate down to 1V input to output differential and the dropout voltage is fully specified as a function of load current. Dropout is guaranteed at a maximum of 1.5V at maximum output current, decreasing at lower load currents. On-chip trimming adjusts the reference output voltage to 1%. Current limit is also trimmed, minimising the stress on both the regulator and power source circuitry under overload conditions.

ELECTRICAL CHARACTERISTICS (Pre Irradiation) (T_J = 25°C unless otherwise stated)

Parameter		Test Conditions	Min.	Typ.	Max.	Unit
V_{REF}	Reference Voltage	$V_{IN} - V_{OUT}$ = 3V I_O = 10mA	1.238	1.250	1.252	V
		$V_{IN} - V_{OUT}$ = 1.5 to 15V I_O = 10mA to 3A T_J = –55 to 125°C	1.225	1.25	1.270	
$REG_{(LINE)}$	Line Regulation	I_O = 10mA (V_{IN}–V_{OUT}) = 1.5 to 15V T_J = –55 to 125°C		0.015	0.2	%
		I_O = 10mA (V_{IN}–V_{OUT}) = 15 to 30V T_J = –55 to 125°C			0.5	
$REG_{(LOAD)}$	Load Regulation See notes 1,2	$V_{IN} - V_{OUT}$ = 3V I_O = 10mA to 3A T_J = –55 to 125°C		0.1 0.2	0.3 0.4	%
V_D	Dropout Voltage See note 3	ΔV_{REF} = 1% I_{OUT} = 3A T_J = –55 to 125°C		1.3	1.5	V
I_{CL}	Current Limit	$V_{IN} - V_{OUT}$ = 5V T_J = –55 to 125°C	3.2	4		A
		$V_{IN} - V_{OUT}$ = 25V T_J = –55 to 125°C	0.2	0.5		
I_Q	Quiescent Current Minimum Load Current [4]	$V_{IN} - V_{OUT}$ = 5V T_J = –55 to 125°C		5	10	mA
$REG_{(THERM)}$	Thermal Regulation	T_P = 30ms T_A = 25°C		0.004	0.02	%/W
R_A	Ripple Rejection	f = 120Hz $V_{IN} - V_{OUT}$ = 3V I_O = 3A C_{ADJ} = 25µF	60	75		dB
I_{PIN}	Adjust Pin Current	T_J = –55 to 125°C		55	120	µA
ΔI_{PIN}	Adjust Pin Current Change	$V_{IN} - V_{OUT}$ = 1.5 to 15V I_O = 10mA to 3A T_J = –55 to 125°C		0.2	5	µA
T_S	Temperature Stability	T_J = –55 to 125°C		0.5		%
	Long Term Stability	T_A = 125°C T = 1000 Hrs		0.3		%
V_N	RMS Output Noise	f = 10Hz to 10kHz T_A = 25°C		0.003		%

Notes:

1 Load and line regulation are measured at a constant junction temperature by low duty cycle pulse testing.

2 Power dissipation is determined by the input - output differential and the output current. Guaranteed maximum power dissipation will not be available over the full input - output voltage range.

3 Dropout voltage is specified over the full output current range of the device.