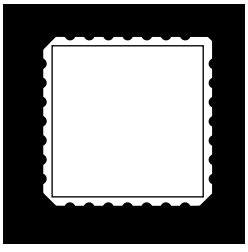
SURFACE MOUNT LOW DROPOUT POSITIVE ADJUSTABLE REGULATOR



Three Terminal, Adjustable Low Dropout 2.0 Amp And 1.0 Amp Positive Voltage Regulators

FEATURES

- Hermetic Surface Mount Package
- Operates Down To 1V Dropout, 1.5V @ Max. Current
- .020% Line Regulation Typically
- .050% Load Regulation Typically
- 1% Reference Voltage
- Electrically Equivalent To LT1085 And LT1086
- Available Hi-Rel Screened

DESCRIPTION

These three terminal positive adjustable voltage regulators in a surface mount package are designed to provide 2.0 Amps and 1.0 Amp with higher efficiency than conventional voltage regulators. The devices are designed to operate to 1 Volt input to output differential and the dropout voltage is specified as a function of load current. These devices are ideally suited for Hi-Rel applications where surface mount, small size, hermeticity and high reliability are required.

ABSOLUTE MAXIMUM RATINGS @ 25°C

Input Voltage . . . . . 35 V
Operating Junction Temperature Range . . . . . - 55°C to + 150°C
Storage Temperature Range . . . . . - 55°C to + 150°C
Output Current - OM185SM. . . . . 2.0 A
OM186SM. . . . . 1.0 A
Thermal Resistance - OM185SM . . . . . 9°C/W
OM186SM . . . . . 14°C/W
Lead Temperature (Soldering 10 Seconds) . . . . . 280°C

ELECTRICAL CHARACTERISTICS (T_J = -55°C to +125°C)

Parameter	Conditions		Min.	Max.	Units
Reference Voltage	I_{OUT} = 10mA, T_j = 25°C				
	$(V_{IN} - V_{OUT})$ = 3V		1.238	1.262	V
	10mA ≤ I_{OUT} ≤ $I_{FULL\ LOAD}$				
	1.5V ≤ $(V_{IN} - V_{OUT})$ ≤ 25 V (Note 3)	•	1.220	1.270	V
Line Regulation	I_{LOAD} = 10mA, 1.5V ≤ $(V_{IN} - V_{OUT})$ ≤ 15V, T_j = 25°C			0.25	%
	15V ≤ $(V_{IN} - V_{OUT})$ ≤ 35V (Notes 1 & 2)	•		0.6	%
Load Regulation	$(V_{IN} - V_{OUT})$ = 3V				
	10mA ≤ I_{OUT} ≤ $I_{FULL\ LOAD}$				
	T_j = 25°C (Notes 1, 2, & 3)			1.0	%
		•		1.2	%
Dropout Voltage	ΔV_{REF} = 1%, I_{OUT} = $I_{FULL\ LOAD}$	•		1.5	V
Current Limit					
OM185SM	$(V_{IN} - V_{OUT})$ = 5V	•	2.0		A
	$(V_{IN} - V_{OUT})$ = 25V	•	0.10		A
OM186SM	$(V_{IN} - V_{OUT})$ = 5V	•	1.0		A
	$(V_{IN} - V_{OUT})$ = 25V	•	0.05		A
Minimum Load Current	$(V_{IN} - V_{OUT})$ = 25V	•		15	mA
Thermal Regulation	T_A = 25°C, 30 ms pulse				
OM185SM				0.025	%/W
OM186SM				0.055	%/W
Ripple Rejection	f = 120Hz				
	C_{ADJ} = 25µF Tantalum				
	I_{OUT} - $I_{FULL\ LOAD}$ $(V_{IN} - V_{OUT})$ = 3V		60		dB
Adjust Pin Current	T_J = 25°C			120	µA
Adjust Pin Current Change	10mA ≤ I_{OUT} ≤ $I_{FULL\ LOAD}$				
	1.5V ≤ $(V_{IN} - V_{OUT})$ ≤ 25V	•		5	µA
Temperature Stability	-55°C ≤ T_J ≤ +150°C			1	%
Long Term Stability	T_A = 125°C, 1000 Hrs.			1	%

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

Note 2: Line and load regulation are guaranteed up to the maximum power dissipation (OM185/20W, OM186/10W). 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.

Note 3: $I_{FULL\ LOAD}$ curve is defined as the minimum value of current limit as a function of input to output voltage. Note that power dissipation is only achievable over a limited range of input to output voltage.

Note 4: Dropout voltage is specified over the full output current range of the device.

The • denotes the specifications which apply over the full operating temperature range.

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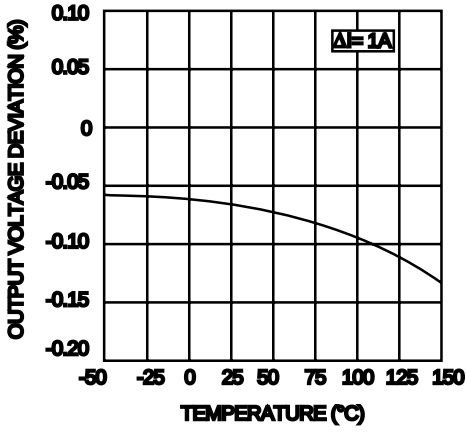
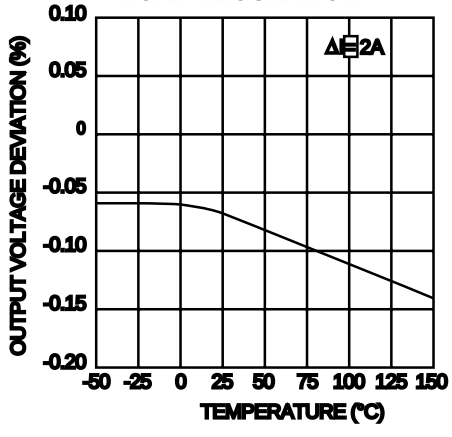
TYPICAL PERFORMANCE CHARACTERISTICS

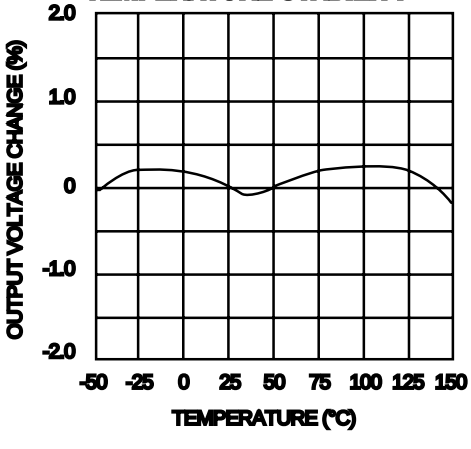
OM186SM
LOAD REGULATION



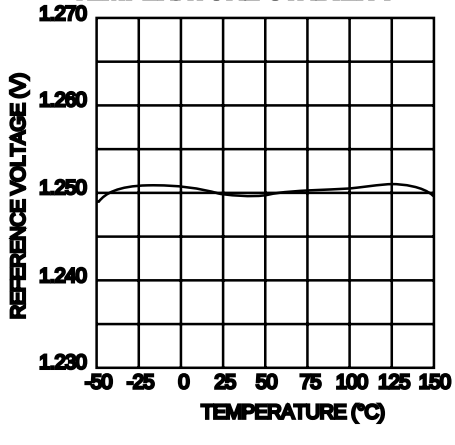
OM185SM
LOAD REGULATION



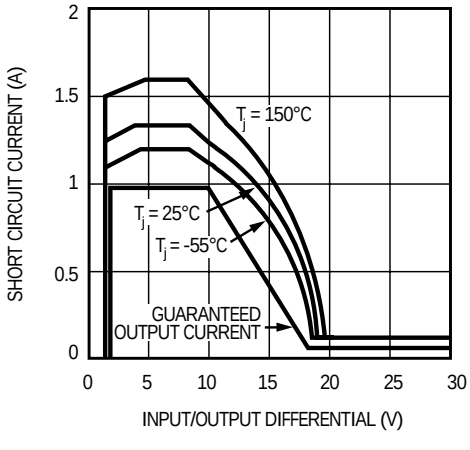
OM186SM
TEMPERATURE STABILITY



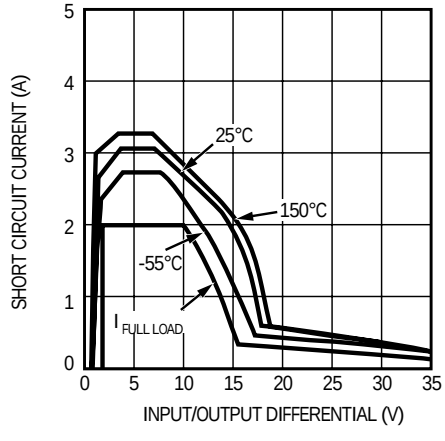
OM185SM
TEMPERATURE STABILITY



OM186SM
SHORT CIRCUIT CURRENT



OM185SM
SHORT CIRCUIT CURRENT



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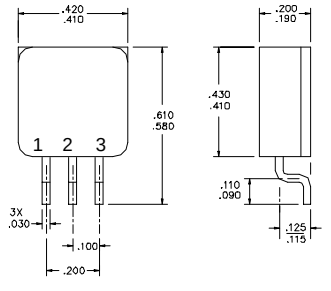
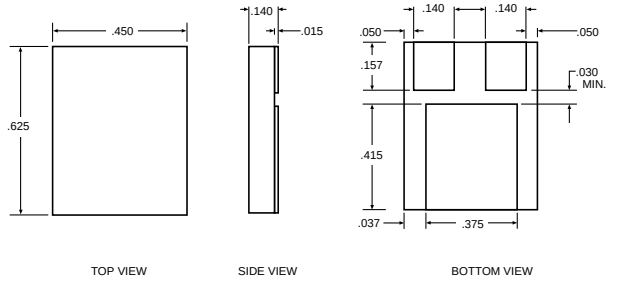
MECHANICAL OUTLINES

D2

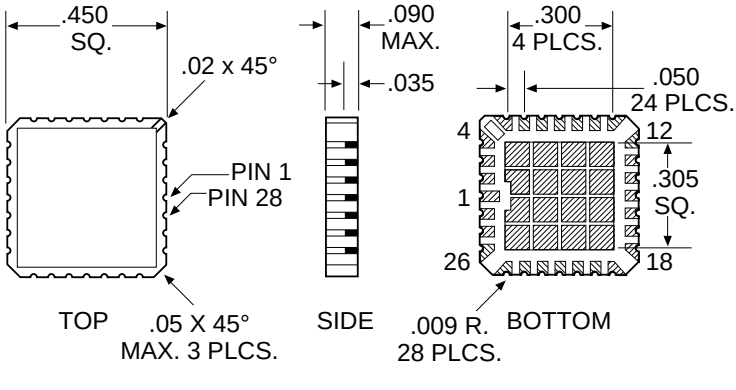


1. ADJ
2. Vout
3. Vin

SMD-1



LCC-28



Pin Connection

Pin 1, 15 thru 28:	IN
Pin 2, 3, 13, and 14:	ADJ
Pin 4 thru 12:	OUT