International
IOR Rectifier

PD-97264

Three Terminal, Adjustable Negative Voltage Regulator

OM1325SM
1.5A

Product Summary:

Part Number	Standard Military Drawing Number	V_{IN}	Adjustable V_{OUT}	Package
OM1325SM	7703406M	-4.25V to -41.25V	-1.2V to -37V	SMD-3

SMD-3

These three terminal negative voltage regulators are supplied in hermetically sealed packages. All protective features are designed into the circuit, including thermal shutdown, current-limiting, and safe-area control. With heat sinking, these devices can deliver up to 1.5 amps of output current. The unit also features output voltages that can be fixed from -1.2 volts to -37 volts using external resistors.

Features:

- Similar to Industry Standard LM137A
- Approved to DSCC Standardized Military Drawing Number 7703406
- Built-in Thermal Overload Protection
- Short Circuit Current Limiting
- Maximum Output Voltage Tolerence is Guaranteed ±1%
- This part is also available in
  TO-257AA Package as OM1325ST(Isolated),
  TO-257AA Package as OM1325NT(Non-Isolated),
  SMD-1 Package as OM1325NM,
  TO-204 Package as OM1325NK

Absolute Maximum Ratings @ TC = 25°C

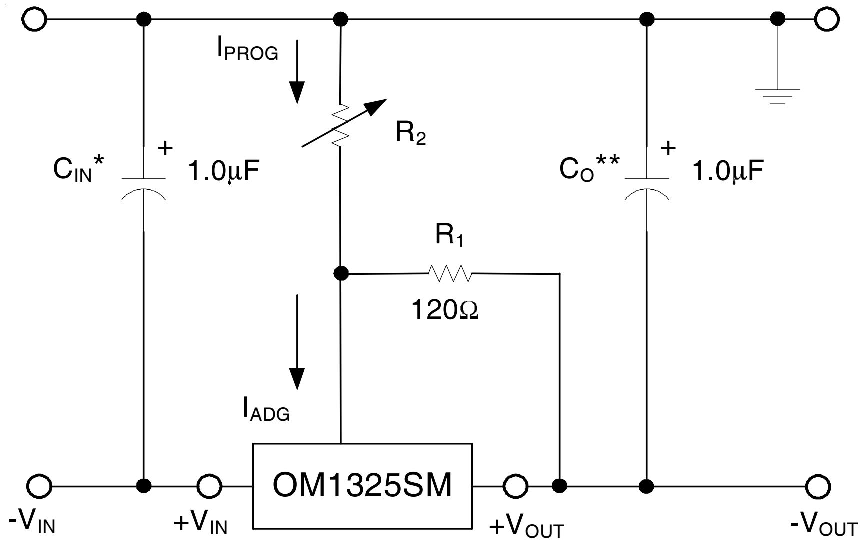
Parameter	Symbol	Value	Units
Recommended Output Voltage Range	V_{OUT}	-1.2 to -37	VDC
Recommended Input Voltage Range	V_{IN}	-4.25 to -41.25	
Output Current	I_{OUT}	1.5	A
Power Dissipation	P_D	20	W
Input - Output Voltage Differential	V_{DIFF}	40	V
Thermal Resistance, Junction to Case	R_{THJC}	3.5	°C/W
Operating Temperature Range	T_J	-55 to +150	
Storage Temperature Range	T_S	-65 to +150	°C
Lead Temperature (Soldering 10 seconds)	T_L	300	

Electrical Characteristics: -55°C ≤ T_A ≤ 125°C, I_L = 8.0mA (Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	Min.	Max.	Units
Reference Voltage	V_{DIFF} = 3.0V, T_A = 25°C	V_{REF}	-1.262	-1.238	V
	V_{DIFF} = 3.0V ③		-1.280	-1.220	
	V_{DIFF} = 40V ③		-1.280	-1.220	
Line Regulation ①	3.0V ≤ V_{DIFF} ≤ 40V, T_A = 25°C	R_{LINE}	-4.5	4.5	mV
	3.0V ≤ V_{DIFF} ≤40V ③		-13.8	13.8	
Load Regulation ①	8.0mA ≤ I_L ≤ 1.5A, V_{DIFF} = 5.0V ③	R_{LOAD}	-25	25	
	8.0mA ≤ I_L ≤ 1.5A, V_{DIFF} = 12V , TA = 25°C		-25	25	
	8.0mA ≤ I_L ≤ 200mA, V_{DIFF} = 40V, T_A = 25°C		-25	25	
	8.0mA ≤ I_L ≤ 100mA, V_{DIFF} = 40V ③		-50	50	
Thermal Regulation	V_{IN} = -14.6V, I_L = 1.5A P_D = 20W, t = 10ms, T_A = 25°C	V_{RTH}	-5.0	5.0	
Ripple Rejection ②	f = 120Hz, V_{OUT} = V_{REF} ③ C_{ADJ} = 10µF	R_N	66	-	dB
Adjustment Pin Current	V_{DIFF} = 3.0V ③	I_{ADJ}	-	100	µA
	V_{DIFF} = 40V ③		-	100	
Adjustment Pin Current Change	3.0V ≤ V_{DIFF} ≤ 40V ③	$I_{ADJ\ (line)}$	-5.0	5.0	
	8.0mA ≤ I_L ≤ 1.5A, V_{DIFF} = 5.0V ③	$I_{ADJ\ (load)}$	-5.0	5.0	
Minimum Load Current	V_{DIFF} = 3.0V, V_{OUT} = -1.4V(forced) ③	I_{Lmin}	-	3.0	mA
	V_{DIFF} = 10V, V_{OUT} = -1.4V (forced) ③		-	3.0	
	V_{DIFF} = 40V, V_{OUT} = -1.4V (forced) ③		-	5.0	
Current Limit ②	V_{DIFF} = 5.0V ③	I_{CL}	1.5	3.5	A
	V_{DIFF} = 40V, T_A = 25°C		0.24	1.2	

NOTES:
① Load and Line Regulation are specified at a constant junction temperature. Pulse testing with low duty cycle is used. Changes in output voltage due to heating effects must be taken into account separately.
② If not tested, shall be guaranteed to the specified limits.
③ Denotes the specifications which apply over the full operating temperature range.

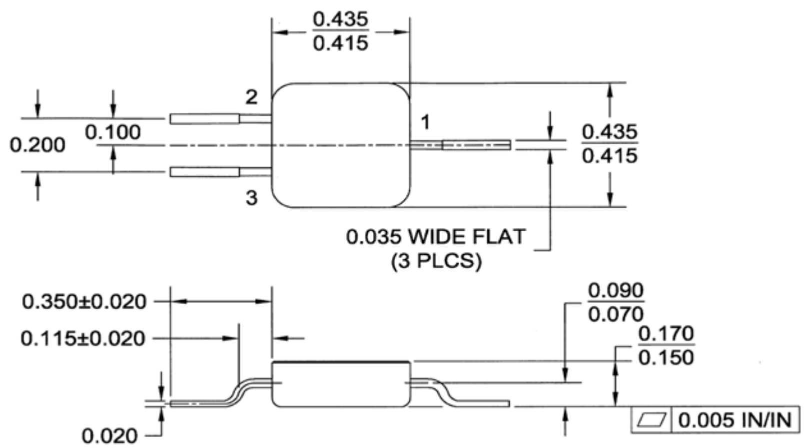
Standard Application



* C_{in} is required if regulator is located more than 4 inches from power supply filter. A 1.0µF solid tantalum or 10µF aluminum electrolytic is recommended.
** C_o is necessary for stability. A 1.0µF solid tantalum or 10µF aluminum electrolytic is recommended.

$$V_{OUT} = -1.25V\,(1 + R2/R1)$$

Case Outline and Dimensions - SMD-3



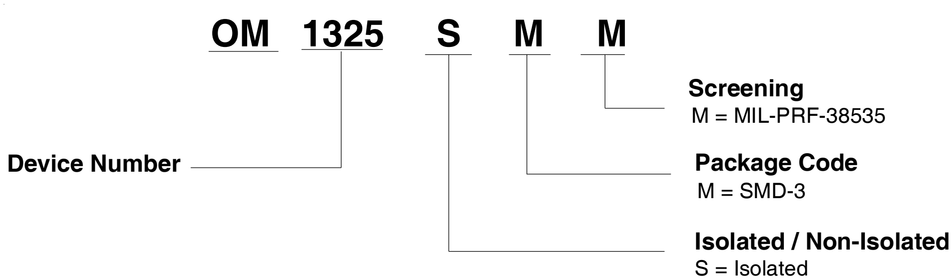
NOTES

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994
2. CONTROLLING DIMENSION: INCH
3. DIMENSIONS ARE SHOWN IN INCHES
4. TOLERANCES ARE ±0.010 U.O.S
5. SEE INDIVIDUAL DATA SHEETS FOR PIN ASSIGNMENTS
6. OUTLINE USED WITH OM PART NUMBERS ONLY

PIN ASSIGNMENTS

Pin 1 - Adjust
Pin 2 - Input
Pin 3 - Output
Case - Isolated

Part Numbering Nomenclature



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IR WORLD HEADQUARTERS: 233 Kansas St., El Segundo, California 90245, USA Tel: (310) 252-7105
IR LEOMINSTER : 205 Crawford St., Leominster, Massachusetts 01453, USA Tel: (978) 534-5776
Data and specifications subject to change without notice. 10/2006