

High-Precision Three-Pin Regulator Monolithic IC MM1257

Outline

This IC is a high-precision high-voltage stabilized power supply device which stands out from ordinary low-saturation three-pin regulators.

It can be used at a wide range of output voltages, from 3V to 12V, delivering output currents up to 100mA. It is one of a series of devices available at lower prices than previous regulators.

Features

- | | |
|--------------------------------------|--|
| 1. Input current | 27V max. |
| 2. Output noise voltage | 200 μ Vrms typ. |
| 3. Maximum output current | 100mA max. |
| 4. No-load input current | 500 μ A typ. |
| 5. Thermal shutdown circuit provided | |
| 6. Output voltage ranks | A : 12V \pm 2% E : 6V \pm 2%
B : 10V \pm 2% F : 5V \pm 2%
C : 9V \pm 2% G : 3V \pm 2%
D : 8V \pm 2% |

Package

TO-92A (MM1257□T)

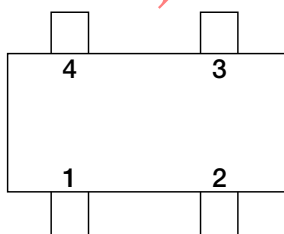
MMP-4A (MM1257□M)

*The output voltage rank appears in the boxes.

Applications

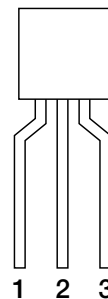
1. Mobile computers
2. Portable transceivers
3. Cordless phones

Pin Assignment



MMP-4A
(TOP VIEW)

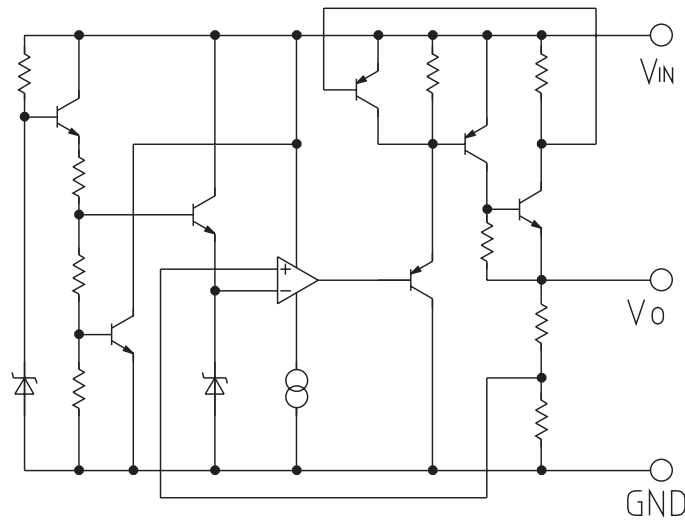
1	NC
2	V _{IN}
3	V _{OUT}
4	GND



TO-92A

1	V _{OUT}
2	GND
3	V _{IN}

Equivalent Circuit Diagram



Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Ratings	Units
Storage temperature	T _{STG}	-40~+125	°C
Operating temperature	T _{OPR}	-20~+75	°C
Power supply current	V _{CC max.}	27	V
Output current	I _{OUT}	100	mA
Maximum Ratings	P _d	200 (MMP-4A), 300 (TO-92A)	mW

Recommended Operating Conditions

Item	Symbol	Ratings	Units
Input voltage	V _{IN}	7~27	V
Output current	I _O	1~100	mA

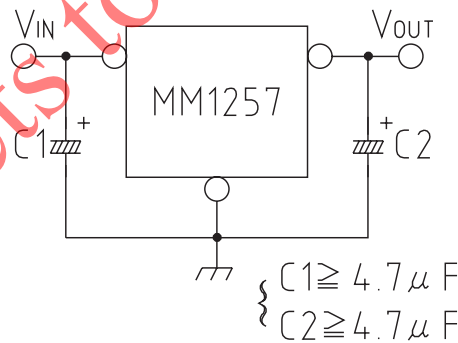
Pin Description

Pin no.	Pin name	Function
1	N.C	N.C
2	V _{IN}	Power supply input pin
3	V _{OUT}	Regulator output pin
4	GND	GND

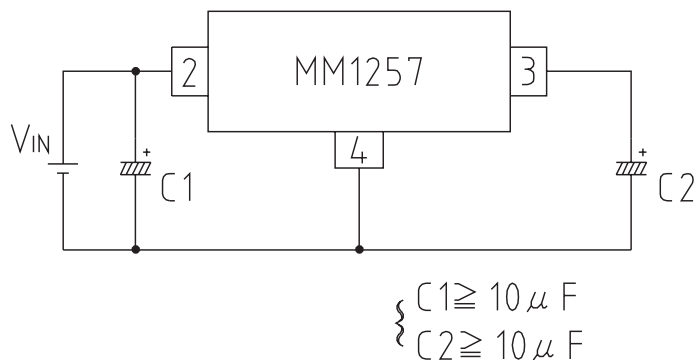
Electrical Characteristics ($V_o=5V$)

Item	Symbol	Measurement circuit	Measurement conditions	Min.	Typ.	Max.	Units	
Output voltage	V_o	1	$V_{IN}=V_o+3V, I_o=40mA$	A	11.76	12.0	12.24	V
				B	9.80	10.0	10.20	
				C	8.82	9.0	9.18	
				D	7.84	8.0	8.16	
				E	5.88	6.0	6.12	
				F	4.90	5.0	5.10	
				G	2.94	3.0	3.06	
No-load input current	I_{ccq}	1	$V_{IN}=V_o+4V, I_o=40mA$		0.50	1.50	mA	
Input fluctuation rate	ΔV_1	1	$V_{IN}=14.5V\sim 25V, I_o=40mA$	A	120	250	mV	
			$V_{IN}=12.5V\sim 24V, I_o=40mA$	B	110	250		
			$V_{IN}=11.5V\sim 22V, I_o=40mA$	C	100	250		
			$V_{IN}=10.5V\sim 22V, I_o=40mA$	D	90	250		
			$V_{IN}=8.5V\sim 20V, I_o=40mA$	E	60	200		
			$V_{IN}=7V\sim 20V, I_o=40mA$	F	50	150		
			$V_{IN}=7V\sim 18V, I_o=40mA$	G	25	150		
Load fluctuation rate	ΔV_2	1	$V_{IN}=15V, I_o=1\sim 100mA$	A	80	160	mV	
			$V_{IN}=13V, I_o=1\sim 100mA$	B	70	140		
			$V_{IN}=12V, I_o=1\sim 100mA$	C	65	130		
			$V_{IN}=11V, I_o=1\sim 100mA$	D	60	120		
			$V_{IN}=9V, I_o=1\sim 100mA$	E	40	80		
			$V_{IN}=8V, I_o=1\sim 100mA$	F	20	60		
			$V_{IN}=8V, I_o=1\sim 100mA$	G	20	60		

Measuring Circuit



Application Circuits



Note: The cause of oscillation is due to set wiring and capacitance changes in capacitor caused by temperatures changes, so please take extra care in placing the wires.