

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 V _{RMS} 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)

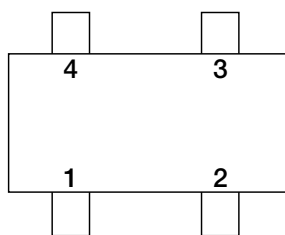
MMP-4A (MM1257□M)

*The output voltage rank appears in the boxes.

Applications

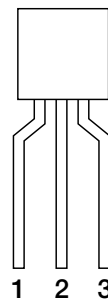
1. Handheld computers
2. Portable transceivers
3. Cordless phones

Pin Assignment



MMP-4A

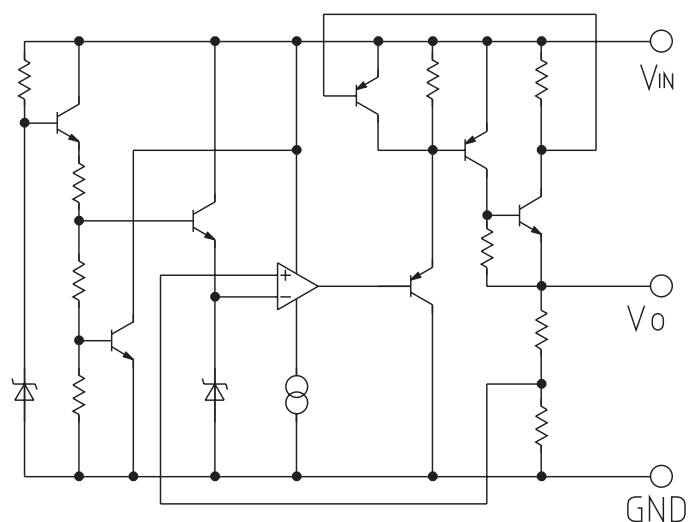
1	NC
2	V _{IN}
3	V _{OUT}
4	GND



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

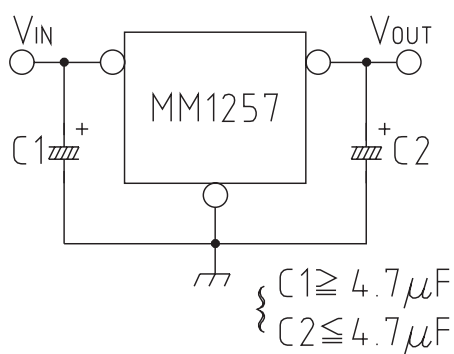
Pin Description

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
				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
			V _{IN} =7V, I _o =40mA	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~25V, I _o =40mA	A	120	250	mV
			V _{IN} =12.5V~24V, I _o =40mA	B	110	250	
			V _{IN} =11.5V~22V, I _o =40mA	C	100	250	
			V _{IN} =10.5V~22V, I _o =40mA	D	90	250	
			V _{IN} =8.5V~20V, I _o =40mA	E	60	200	
			V _{IN} =7V~20V, I _o =40mA	F	50	150	
			V _{IN} =7V~18V, I _o =40mA	G	25	150	
Load fluctuation rate	ΔV ₂	1	V _{IN} =15V, I _o =1~100mA	A	80	160	mV
			V _{IN} =13V, I _o =1~100mA	B	70	140	
			V _{IN} =12V, I _o =1~100mA	C	65	130	
			V _{IN} =11V, I _o =1~100mA	D	60	120	
			V _{IN} =9V, I _o =1~100mA	E	40	80	
			V _{IN} =8V, I _o =1~100mA	F	20	60	
			V _{IN} =8V, I _o =1~100mA	G	20	60	

Measuring Circuit



Application Circuits

