

DATA SHEET

Part No.	AN8005M
Package Code No.	HSIP003-P-0000Q

Maintenance/Discontinued includes following lifecycle stage.
planned maintenance type
maintenance type
planned discontinued type
discontinued type
Please visit following URL about latest information.
<http://www.semicon.panasonic.co.jp/en/>

Contents

■ Overview	3
■ Features	3
■ Applications	3
■ Package	3
■ Type	3
■ Block Diagram	4
■ Pin Descriptions	5
■ Absolute Maximum Ratings	6
■ Operating Supply Voltage Range	6
■ Electrical Characteristics	7
■ Electrical Characteristics (Reference values for design)	8
■ Technical Data	9

Maintenance/Discontinued includes following four Product lifecycle stage.
Discontinued type
planned maintenance type
maintenance type
planned discontinued type
discontinued type
Please visit following URL about latest information.
<http://www.semicon.panasonic.co.jp/en/>

AN8005M

3-pin, positive output, low dropout voltage regulator (50 mA type)

■ Overview

The AN80xxM series are 3-pin, low dropout, fixed positive output type monolithic voltage regulators.

Since their power consumption can be minimized, they are suitable for battery-used power supply and reference voltage.

12 types of output voltage are available; 2 V, 2.5 V, 3 V, 4 V, 4.5 V, 5 V, 6 V, 7 V, 8 V, 8.5 V, 9 V, and 10 V.

■ Features

- Input/output voltage difference: 0.3 V max.
- Output current of up to 50 mA
- Low bias current: 0.6 mA typ.
- Output voltage: 5 V
- Built-in over current protection circuit

■ Applications

- 3-pin positive output voltage regulator (low drop 50 mA type)

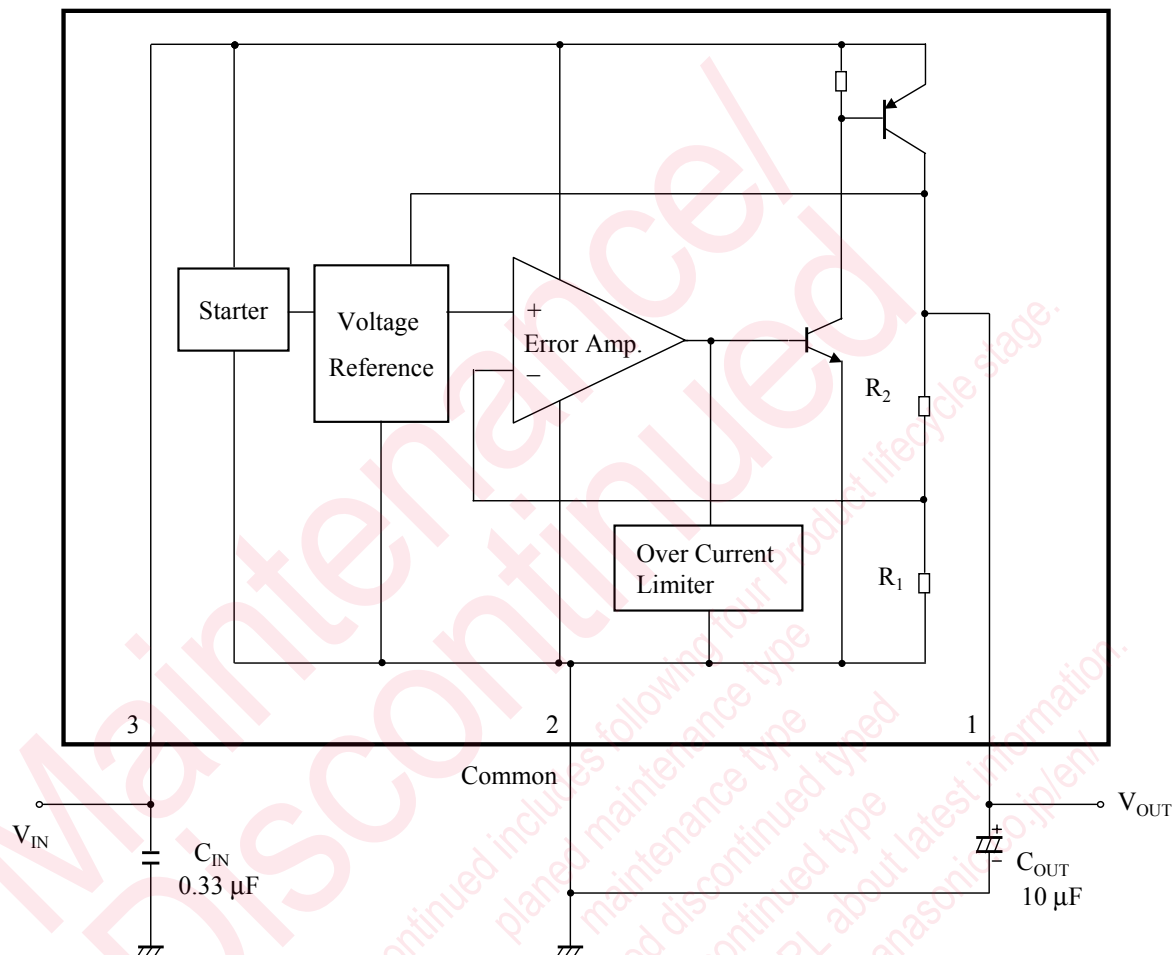
■ Package

- 3-pin plastic single inline package with heat sink (SIP type)

■ Type

- Silicon monolithic bipolar IC

■ Block Diagram



C_{OUT} : AN80xxM series have their internal gain in order to improve performance. When the power line on the output side is long, use a capacitor of 10 μF.

Also, the capacitor on the output side should be attached as close to the IC as possible.

When using at a low temperature, it is recommended to use the capacitors with low internal impedance (for example, tantalum capacitor) for output capacitors.

R_1 : 5 kΩ
 R_2 : 15 kΩ

■ Pin Descriptions

Pin No.	Pin name	Type	Description
1	Output	Output	Regulated power output
2	Common	Ground	Ground
3	Input	Input	Input supplies power to the internal circuit

Maintenance/Discontinued includes four Product lifecycle stage.
planned maintenance type
maintenance type
planned discontinued type
discontinued type
Please visit following URL about latest information.
<http://www.semicon.panasonic.co.jp/en/>

■ Absolute Maximum Ratings

A No.	Parameter	Symbol	Rating	Unit	Note
1	Supply voltage	V_{CC}	20	V	*1
2	Supply current	I_{CC}	100	mA	*4
3	Power dissipation	P_D	270	mW	*2
4	Operating ambient temperature	T_{opr}	-30 to +80	°C	*3
5	Storage temperature	T_{stg}	-55 to +150	°C	*3

Note) *1: The values under the condition not exceeding the above absolute maximum ratings and the power dissipation.

*2: The power dissipation shown is the value at $T_a = 80^\circ\text{C}$ for independent (unmounted) IC packaged.

When using this IC, refer to the $\bullet P_D - T_a$ diagram in the ■ Technical Data and use under the condition not exceeding the allowable value.

*3: Except for the power dissipation, operating ambient temperature, and storage temperature, all ratings are for $T_a = 25^\circ\text{C}$.

*4: Built-in over current limit circuit, and the current will not go over the limit.

■ Operating supply voltage range

Parameter	Symbol	Range	Unit	Note
Supply voltage range	V_{CC}	5.5 to 11.0	V	—

Note) The values under the condition not exceeding the above absolute maximum ratings and the power dissipation.

■ Electrical Characteristics

Note) Unless otherwise specified, $T_a = 25^\circ\text{C} \pm 2^\circ\text{C}$, $V_{\text{IN}} = 6.0\text{ V}$, $I_{\text{OUT}} = 20\text{ mA}$, $C_{\text{IN}} = 0.33\ \mu\text{F}$ and $C_{\text{OUT}} = 10\ \mu\text{F}$ (ESR less than $5\ \Omega$).

B No.	Parameter	Symbol	Conditions	Limits			Unit	Note
				Min	Typ	Max		
1	Output voltage	V_{OUT}	$T_j = 25^\circ\text{C}$	4.8	5.0	5.2	V	—
2	Line regulation	REG_{LIN}	$T_j = 25^\circ\text{C}$ $5.5\text{ V} \leq V_{\text{IN}} \leq 11.0\text{ V}$	—	4.5	50	mV	—
3	Load regulation	REG_{LOA}	$T_j = 25^\circ\text{C}$ $1\text{ mA} \leq I_{\text{OUT}} \leq 40\text{ mA}$	—	12	40	mV	—
			$T_j = 25^\circ\text{C}$ $1\text{ mA} \leq I_{\text{OUT}} \leq 50\text{ mA}$	—	25	50		
4	Minimum input/output voltage difference	VD	$T_j = 25^\circ\text{C}$ $V_{\text{IN}} = 4.8\text{ V}$, $I_{\text{OUT}} = 20\text{ mA}$	—	0.07	0.2	V	—
			$T_j = 25^\circ\text{C}$ $V_{\text{IN}} = 4.8\text{ V}$, $I_{\text{OUT}} = 50\text{ mA}$	—	0.12	0.3		
5	Bias current	I_{Q}	$T_j = 25^\circ\text{C}$ $I_{\text{OUT}} = 0\text{ mA}$	—	0.7	1.0	mA	—

■ Electrical Characteristics (Reference values for design)

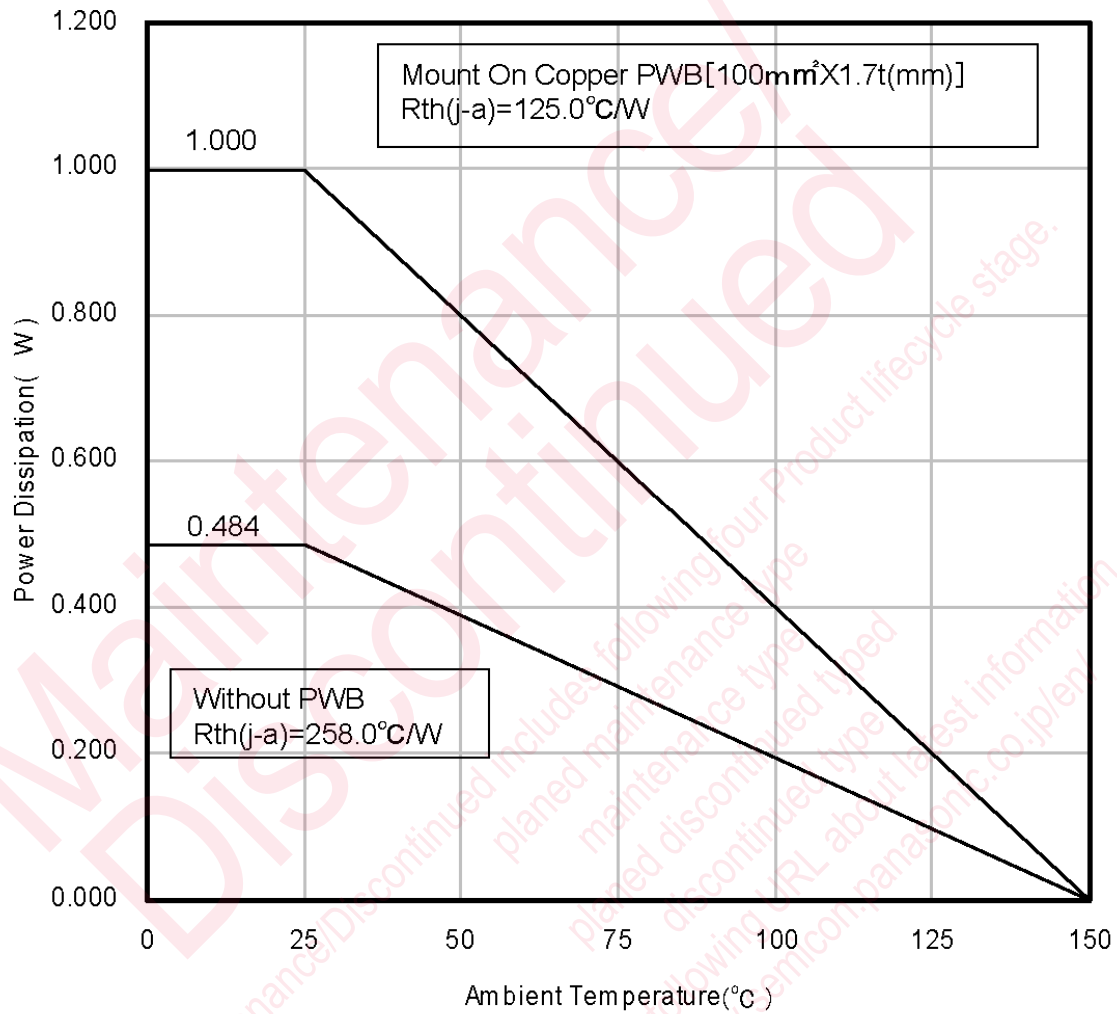
Note) Unless otherwise specified, $T_a = 25^\circ\text{C} \pm 2^\circ\text{C}$, $V_{\text{IN}} = 6.0\text{ V}$, $I_{\text{OUT}} = 20\text{ mA}$, $C_{\text{IN}} = 0.33\text{ }\mu\text{F}$ and $C_{\text{OUT}} = 10\text{ }\mu\text{F}$ (ESR less than $5\text{ }\Omega$).

The characteristics listed below are reference values for design of the IC and are not guaranteed by inspection.

If a problem does occur related to these characteristics, Panasonic will respond in good faith to user concerns.

B No.	Parameter	Symbol	Conditions	Reference values			Unit	Note
				Min	Typ	Max		
6	Ripple rejection ratio	RR	$6.0\text{ V} \leq V_{\text{IN}} \leq 8.0\text{ V}$ $f = 120\text{ Hz}$	52	64	—	dB	—
7	Output noise voltage	Vno	$10\text{ Hz} \leq f \leq 100\text{ kHz}$	—	95	—	μV	—
8	Output voltage temperature coefficient	$\frac{\Delta V_{\text{OUT}}}{T_a}$	$-30^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$	—	0.25	—	$\text{mV}/^\circ\text{C}$	—

- Technical Data
- $P_D - T_a$ diagram



Restrictions in using the technical information and applications described in this book

This book is to be exported or provided to non-residents, the laws and regulations related to security export control, must be observed.

This book is to show the main characteristics and application circuit examples of the products. It does not constitute a warranty of any property right or other right owned by Panasonic Corporation or any other company as to the infringement upon any such right owned by any other company. The information described in this book.

This book is for standard applications or general electronic equipment (such as office equipment and household appliances).

Special applications:

Automobiles, traffic control equipment, combustion equipment, life support equipment, etc. where high reliability are required, or if the failure or malfunction of the product

are subject to change without notice for modification and/or improvement of the products, therefore, ask for the most up-to-date Product Information to satisfy your requirements.

Do not exceed the absolute maximum rating and the guaranteed operating conditions (such as temperature range). Especially, please be careful not to exceed the range of absolute maximum rating for turn-on and mode-switching. Otherwise, we will not be liable for any damage.



Please take into the consideration of incidence of break down and failure in the systems such as redundant design, arresting the spread of fire, personal injury, fire, social damages, for example, by using the products.

Performance and characteristics change due to external factors (ESD, EOS, electrostatic discharge) or at customer's process. When using products for which the shelf life and the elapsed time since first opening the packages.

Do not use partially, without the prior written permission of our company.

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View AN8005M on WIN SOURCE](#)
-  [Panasonic Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management