MITSUMI

Low-saturation voltage 1.5A LDO

MM1870 Series

Outline

This IC is a 1.5A LDO with a low saturation voltage.

In addition to a low-saturation voltage (0.26V typ., Io=1.5 A), the device has a low voltage output with a minimum of 0.9 V, and is therefore capable of low-voltage operation.

This device is offered in the PKG TO–252–5A package featuring high heat dissipation and the small-sized PKG HSOP–8A package.

For protection, it includes an over-current protection circuit and a thermal shutdown circuit.
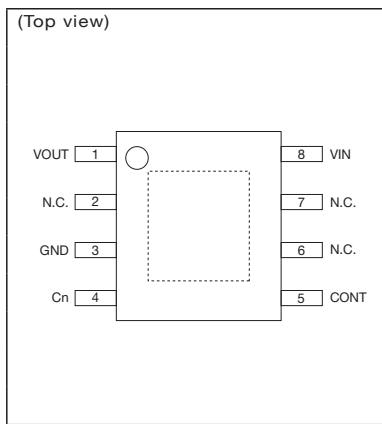
Applications

(1) Flat TVs
(2) DVD/Blu–ray recorders
(3) Set top boxes

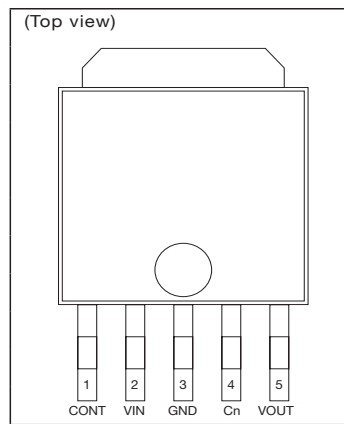## Features   (Unless otherwise specified, Ta=+25°C)

(1) Input voltage range ....1.25V to 10V
(2) Output voltage range ....0.9V to 5.0V
(3) Output voltage accuracy.......V_{OUT}±2%
(4) Output current.......................1.5A
(5) Current consumption ....1mA typ.
                                        (No–Load Input Current)
(6) Output capacitor 1µF
(7) Dropout voltage....................0.26V typ. (Io=1500mA)
(8) Line regulation.......................10mV typ. ,20mV max.
                                        (Io=1mA)
(9) Load regulation ....19mV typ. ,50mV max.
                                        (Io=1mA to 1500mA)
(10) Ripple rejection ....65dB typ. (f=1kHz)

Pin assignment

HSOP–8A

(Top view)

VOUT	1		8	VIN
N.C.	2		7	N.C.
GND	3		6	N.C.
Cn	4		5	CONT

TO–252–5A

(Top view)

| 1 | 2 | 3 | 4 | 5 |
| CONT | VIN | GND | Cn | VOUT |

Pin no.	HSOP-8A	TO-252-5A
1	VOUT	CONT
2	N.C.	VIN
3	GND	GND
4	Cn	Cn
5	CONT	VOUT
6	N.C.	---
7	N.C.	---
8	VIN	---

Model name structure
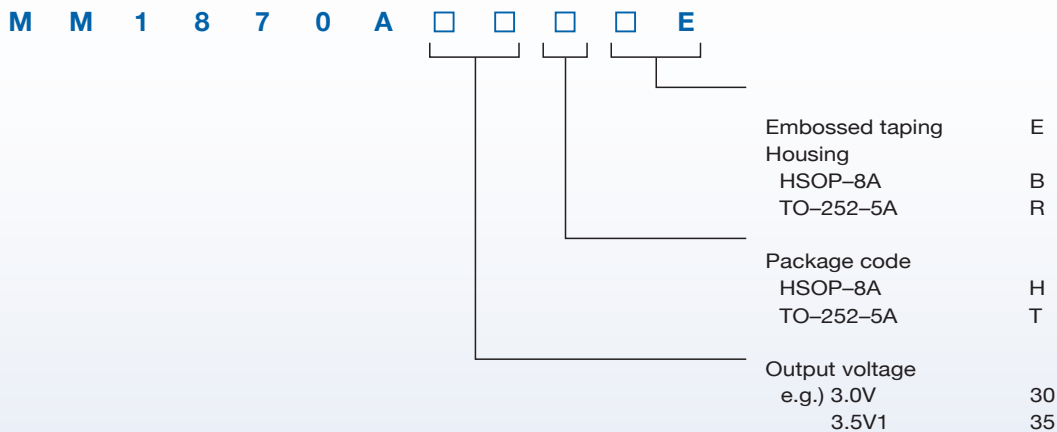
M M 1 8 7 0 A □ □ □ □ E

Embossed taping	E
Housing	
HSOP–8A	B
TO–252–5A	R
Package code	
HSOP–8A	H
TO–252–5A	T
Output voltage	
e.g.) 3.0V	30
3.5V1	35

Selection guide

Output Voltage	Accuracy	Parts No.		Dropout Voltage (Typ.) Io=1,500mA	Output Current	No–Load Input Current (Typ.)
		HSOP–8A Package (2,000pcs/Reel)	TO–252–5A Package (3,000pcs/Reel)			
0.9V	±30mV	MM1870A09HBE	MM1870A09TRE	*	1500mA	1mA
1.0V	±30mV	MM1870A10HBE	MM1870A10TRE	*	1500mA	1mA
1.1V	±30mV	MM1870A11HBE	MM1870A11TRE	0.26V	1500mA	1mA
1.2V	±30mV	MM1870A12HBE	MM1870A12TRE	0.26V	1500mA	1mA
1.3V	±30mV	MM1870A13HBE	MM1870A13TRE	0.26V	1500mA	1mA
1.4V	±30mV	MM1870A14HBE	MM1870A14TRE	0.26V	1500mA	1mA
1.5V	±2%	MM1870A15HBE	MM1870A15TRE	0.26V	1500mA	1mA
1.6V	±2%	MM1870A16HBE	MM1870A16TRE	0.26V	1500mA	1mA
1.7V	±2%	MM1870A17HBE	MM1870A17TRE	0.26V	1500mA	1mA
1.8V	±2%	MM1870A18HBE	MM1870A18TRE	0.26V	1500mA	1mA
1.9V	±2%	MM1870A19HBE	MM1870A19TRE	0.26V	1500mA	1mA
2.0V	±2%	MM1870A20HBE	MM1870A20TRE	0.26V	1500mA	1mA
2.1V	±2%	MM1870A21HBE	MM1870A21TRE	0.26V	1500mA	1mA
2.2V	±2%	MM1870A22HBE	MM1870A22TRE	0.26V	1500mA	1mA
2.3V	±2%	MM1870A23HBE	MM1870A23TRE	0.26V	1500mA	1mA
2.4V	±2%	MM1870A24HBE	MM1870A24TRE	0.26V	1500mA	1mA
2.5V	±2%	MM1870A25HBE	MM1870A25TRE	0.26V	1500mA	1mA
2.6V	±2%	MM1870A26HBE	MM1870A26TRE	0.26V	1500mA	1mA
2.7V	±2%	MM1870A27HBE	MM1870A27TRE	0.26V	1500mA	1mA
2.8V	±2%	MM1870A28HBE	MM1870A28TRE	0.26V	1500mA	1mA
2.9V	±2%	MM1870A29HBE	MM1870A29TRE	0.26V	1500mA	1mA
3.0V	±2%	MM1870A30HBE	MM1870A30TRE	0.26V	1500mA	1mA
3.1V	±2%	MM1870A31HBE	MM1870A31TRE	0.26V	1500mA	1mA
3.2V	±2%	MM1870A32HBE	MM1870A32TRE	0.26V	1500mA	1mA
3.3V	±2%	MM1870A33HBE	MM1870A33TRE	0.26V	1500mA	1mA
3.4V	±2%	MM1870A34HBE	MM1870A34TRE	0.26V	1500mA	1mA
3.5V	±2%	MM1870A35HBE	MM1870A35TRE	0.26V	1500mA	1mA
3.6V	±2%	MM1870A36HBE	MM1870A36TRE	0.26V	1500mA	1mA
3.7V	±2%	MM1870A37HBE	MM1870A37TRE	0.26V	1500mA	1mA
3.8V	±2%	MM1870A38HBE	MM1870A38TRE	0.26V	1500mA	1mA
3.9V	±2%	MM1870A39HBE	MM1870A39TRE	0.26V	1500mA	1mA
4.0V	±2%	MM1870A40HBE	MM1870A40TRE	0.26V	1500mA	1mA
4.1V	±2%	MM1870A41HBE	MM1870A41TRE	0.26V	1500mA	1mA
4.2V	±2%	MM1870A42HBE	MM1870A42TRE	0.26V	1500mA	1mA
4.3V	±2%	MM1870A43HBE	MM1870A43TRE	0.26V	1500mA	1mA
4.4V	±2%	MM1870A44HBE	MM1870A44TRE	0.26V	1500mA	1mA
4.5V	±2%	MM1870A45HBE	MM1870A45TRE	0.26V	1500mA	1mA
4.6V	±2%	MM1870A46HBE	MM1870A46TRE	0.26V	1500mA	1mA
4.7V	±2%	MM1870A47HBE	MM1870A47TRE	0.26V	1500mA	1mA
4.8V	±2%	MM1870A48HBE	MM1870A48TRE	0.26V	1500mA	1mA
4.9V	±2%	MM1870A49HBE	MM1870A49TRE	0.26V	1500mA	1mA
5.0V	±2%	MM1870A50HBE	MM1870A50TRE	0.26V	1500mA	1mA

* The parameter is not guaranteed in the model less than V$_{OUT}$