

M62237FP

Constant Voltage Constant Current Control IC

REJ03F0238-0200

Rev.2.00

Jun 15, 2007

Description

M62237FP is constant voltage/current control IC with high accuracy ref. voltage ($1.25 \text{ V} \pm 1.0\%$) suitable for secondary side control for charger and switching power supply.

Built-in OP Amps for voltage/current control and external output terminal for current control OP Amp. allow for phase compensation.

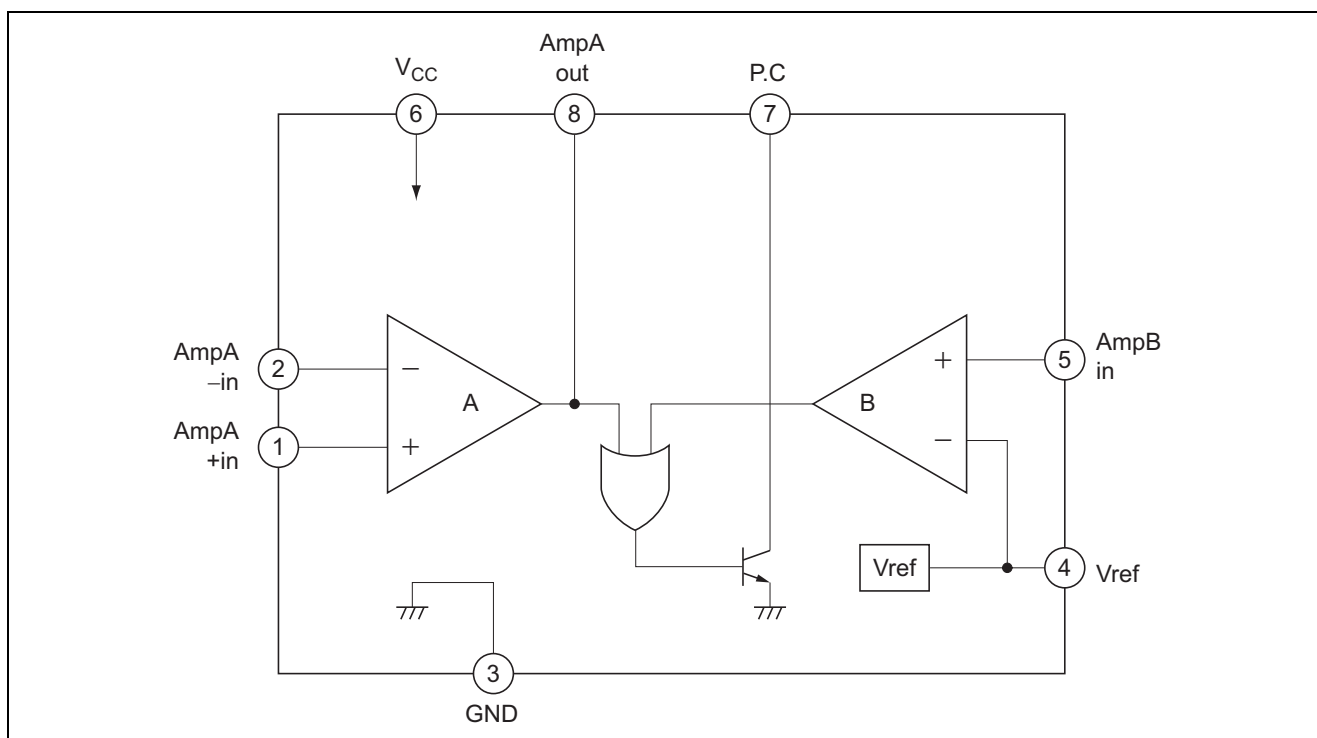
Features

- Operating power supply voltage range: 2.5 to 15 V
- High accuracy ref. voltage: $1.25 \text{ V} \pm 1.0\%$
- PC terminal output current: 20 mA

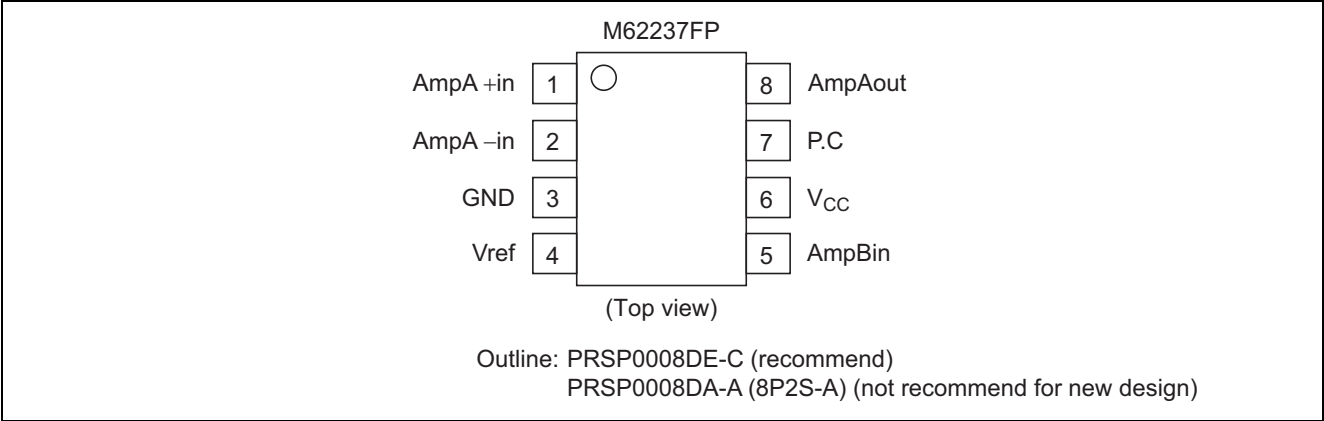
Application

Secondary side control for charger and switching power supply

Block Diagram



Pin Arrangement



Absolute Maximum Ratings

(Ta = 25°C, unless otherwise specified)

Item	Symbol	Ratings	Unit	Conditions
Supply voltage	V _{CC}	16	V	
P.C terminal voltage	VP.C	16	V	
P.C terminal input current	IP.C	20	mA	
Vref terminal output current	Iref	5	mA	
Input differential voltage	VID	16	V	Amp.A
		9	V	Amp.B
Power dissipation	Pd	440	mW	
Thermal derating	Kθ	4.4	mW/°C	Ta ≥ 25°C
Operating temperature	Topr	−20 to 75	°C	
Storage temperature	Tstg	−40 to 125	°C	

Electrical Characteristics

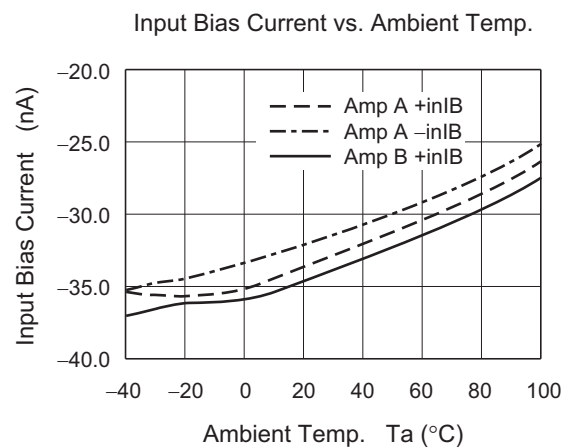
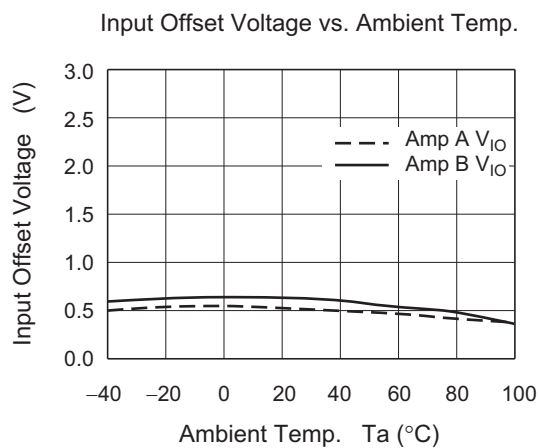
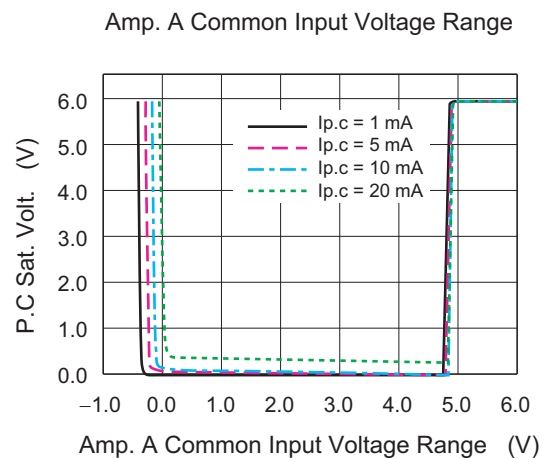
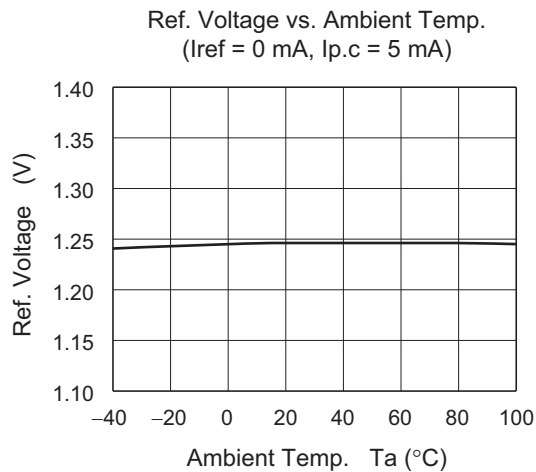
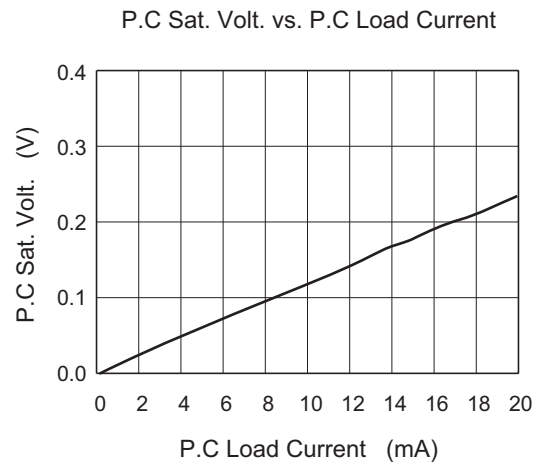
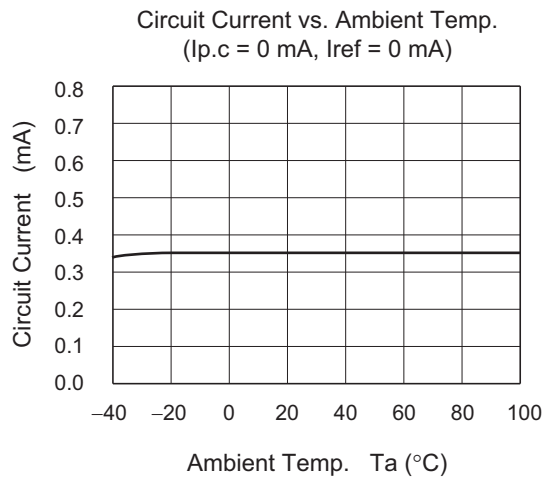
(V_{CC} = 6 V, Ta = 25°C, unless otherwise specified)

	Item	Symbol	Min	Typ	Max	Unit	Conditions
All	Supply voltage	V _{CC}	2.5	—	15	V	
	Supply current	I _{CC}	—	0.8	—	mA	IP.C = 0, Iref = 0
	Ref. voltage	Vref	1.237	1.25	1.263	V	Iref = 0, IP.C = 5 mA
	Ref. voltage regulation	ΔVref	—	10	30	mV	Iref = 0 to 2 mA
P.C	P.C terminal sat. volt.	Vsat	—	0.2	0.4	V	IP.C = 10 mA
	P.C terminal leak current	IP.CLEAK	—	—	2	μA	VP.C = 6 V
AMP A ^(Note1)	Input offset voltage	VIO	—	0.5	2.5	mV	
	Input bias current	IB+, IB−	—	−100	—	nA	
	Common mode input volt.	VICM	0	—	4.0	V	IP.C = 5 mA
	Open voltage gain	GVO	—	80	—	dB	
	Common mode rejection ratio	CMRR	—	70	—	dB	
	Supply voltage rejection ratio	SVRR	—	70	—	dB	
	Slew rate	SR	—	0.5	—	V/μs	
AMP A ^(Note2)	Output voltage range	VOM	0.9	—	1.9	V	
	Output source current	Is _{source}	—	−20	—	μA	
	Output sink current	Is _{sink}	—	100	—	μA	
AMP B ^(Note3)	Input offset voltage	VIO	—	0.5	3.0	mV	
	Input bias current	IB+	—	−100	—	nA	
	Open voltage gain	GVO	—	80	—	dB	
	Supply voltage rejection ratio	SVRR	—	70	—	dB	
	Slew rate	SR	—	0.5	—	V/μs	

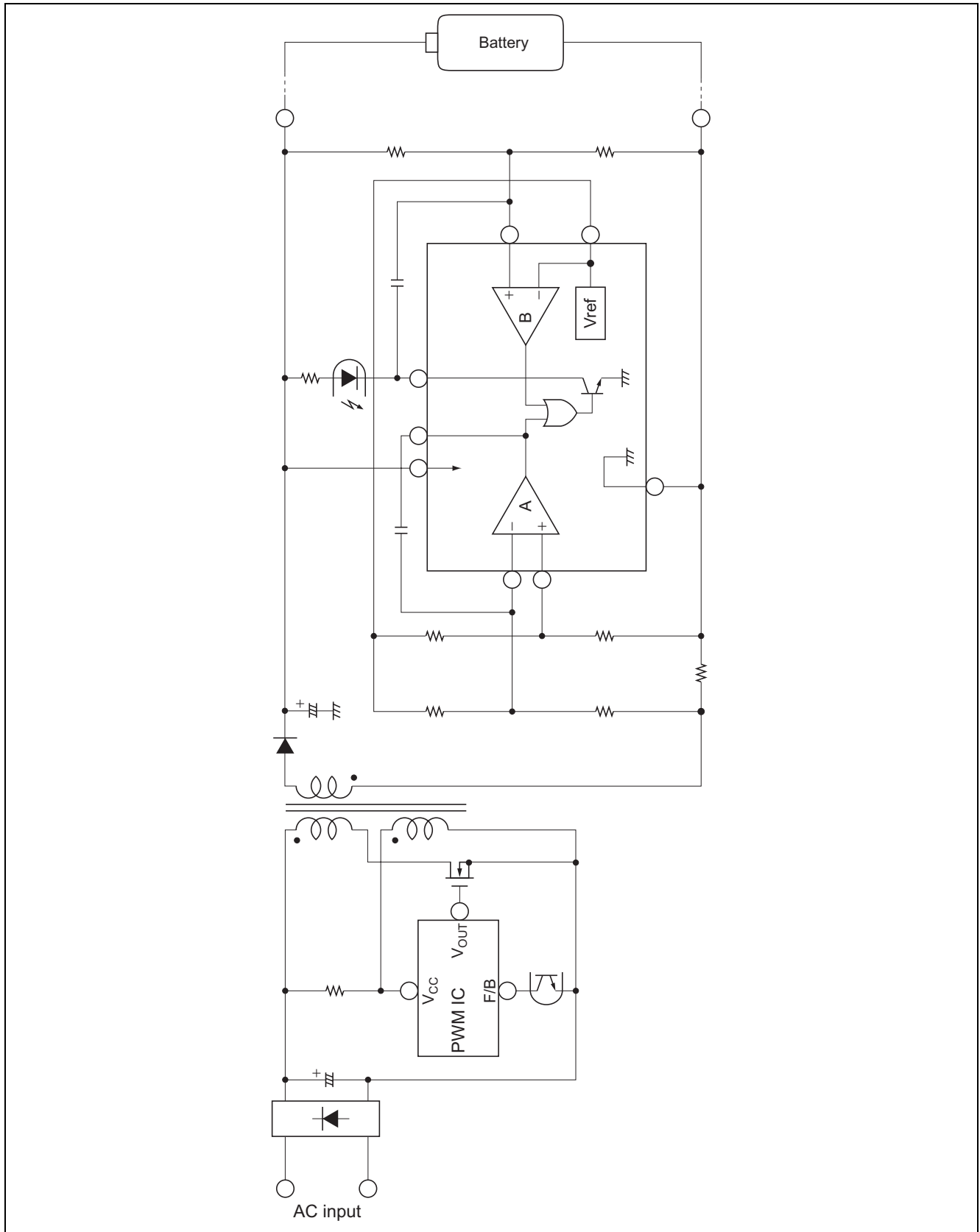
- Notes: 1. Amp A +in, −in terminal for input, PC terminal for output
 2. Amp A +in, −in terminal for input, Amp A out terminal for output
 3. Amp B +in, −in terminal for input, PC terminal for output

Typical Characteristics

($T_a = 25^\circ\text{C}$, $V_{CC} = 6\text{ V}$, unless otherwise noted)

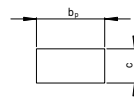
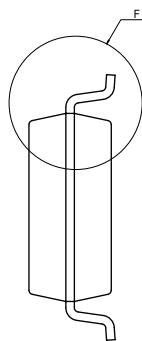
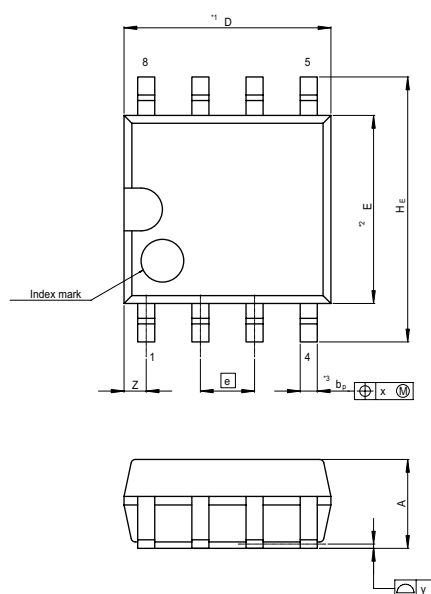
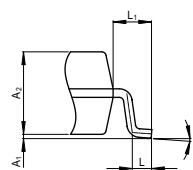


Application Diagram (with Switching Mode Power Supply)



Package Dimensions

JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
P-SOP8-4.4x4.85-1.27	PRSP0008DE-C	—	0.1g

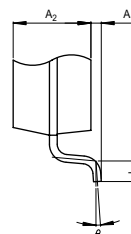
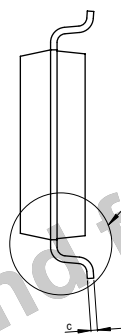
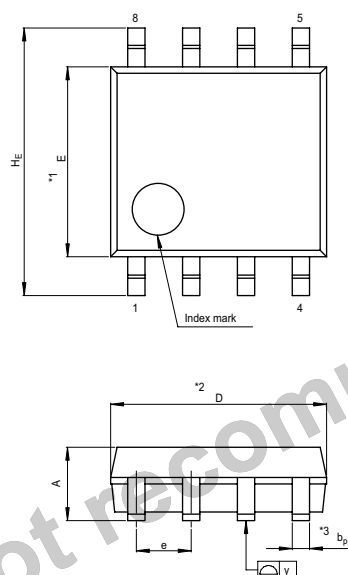
Terminal cross section
(Ni/Pd/Au plating)

Detail F

NOTE)
1. DIMENSIONS **1 (Nom) AND **2*
DO NOT INCLUDE MOLD FLASH.
2. DIMENSION **3 DOES NOT
INCLUDE TRIM OFFSET.

Reference Symbol	Min	Nom	Max
D	4.65	4.85	5.05
E	4.2	4.4	4.6
A ₂	—	1.85	—
A ₁	0.00	0.1	0.20
A	—	—	2.03
b _p	0.34	0.4	0.46
b ₁	—	—	—
c	0.15	0.20	0.25
c ₁	—	—	—
θ	0°	—	8°
H _E	5.7	6.2	6.5
e	1.12	1.27	1.42
x	—	—	0.12
y	—	—	0.10
z	—	—	0.75
L	0.25	0.45	0.65
L ₁	—	0.90	—

JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
P-SOP8-4.4x5-1.27	PRSP0008DA-A	8P2S-A	0.07g



Detail F

NOTE)
1. DIMENSIONS **1 AND **2*
DO NOT INCLUDE MOLD FLASH.
2. DIMENSION **3 DOES NOT
INCLUDE TRIM OFFSET.

Reference Symbol	Min	Nom	Max
D	4.8	5.0	5.2
E	4.2	4.4	4.6
A ₂	—	1.5	—
A ₁	0.05	—	—
A	—	—	1.9
b _p	0.35	0.4	0.5
c	0.13	0.15	0.2
θ	0°	—	10°
H _E	5.9	6.2	6.5
e	1.12	1.27	1.42
y	—	—	0.1
L	0.2	0.4	0.6

Notes:

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