Low Dropout CMOS Voltage Regulators

PL5209M3

Features

- Maximum output current : 500mA
- Highly accurate : output voltage +/-2%
- Low power consumption : typ. 2 μ A
- Small input/output differential:
  0.4V at 160mA(Vout = 2.5V, 3.3V)
  0.12V at 100mA(Vout = 5V)

Applications

- Battery powered equipment
- Palmtops
- Portable cameras and video recorders
- Reference voltage sources

Product Description

The PL5209M3 series is a group of positive voltage output, three-pin regulators, that provide a high current even when the input/output voltage differential is small. Low power consumption and high accuracy is achieved through CMOS and programmable fuse technologies. Output voltage: 2V to 6V in 0.1V increments.

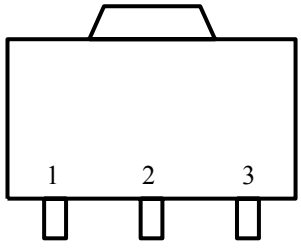
The PL5209M3 consists of a high-precision voltage reference, an error correction circuit, and a current limited output driver. Transient response to load variations is improved in comparison to the existing ones.

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Units
Input Voltage	Vin	12	V
Output Current	Iout	500	mA
Output Voltage	Vout	Vss-0.3～Vin+0.3	V
Continuous Total Power Dissipation	P_D	500	mW
Operating Ambient Temperature	Topr	-30～+80	℃
Storage Temperature	Tstg	-40～+125	℃

Pin Configuration

SOT-89



Vss Vin Vout

Ordering Information

Device	Output Voltage	Package
PL5209-2.5 M3	2.5V	SOT-89
PL5209-3.3 M3	3.3V	SOT-89
PL5209-5.0 M3	5.0V	SOT-89

Electrical Characteristics @V_{IN}=5V,Ta=25℃, unless otherwise noted

PL5209-2.5M3

Parameter	Conditions	Min	Typ	Max	Units
Output Voltage	Io=40mA,Vin=4V	2.450	2.50	2.550	V
Line Regulation △Vout/△VinVout	Io=40mA,4V<Vin<10V	-	0.2	0.3	%/V
Load Regulation	Vin=4V,1mA<Io<80mA	-	45	90	mV
Current Consumption	Vin=4V	-	2.0	4.5	μA
Dropout Voltage	Io=80mA		0.18	0.36	V
	Io=160mA	-	0.4	0.7	V

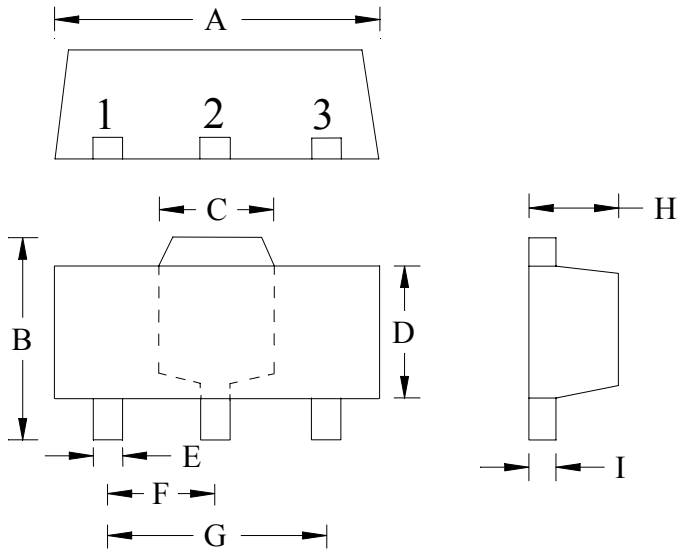
PL5209-3.3M3

Parameter	Conditions	Min	Typ	Max	Units
Output Voltage	Io=40mA,Vin=4.3V	3.234	3.30	3.366	V
Line Regulation △Vout/△VinVout	Io=40mA,4.3V<Vin<10V	-	0.2	0.3	%/V
Load Regulation	Vin=6V,1mA<Io<80mA	-	45	90	mV
Current Consumption	Vin=4.3V	-	1.0	2.9	μA
Dropout Voltage	Io=80mA		0.18	0.36	V
	Io=160mA	-	0.4	0.7	V

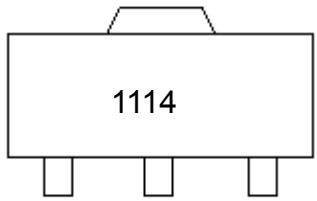
PL5209-5.0M3

Parameter	Conditions	Min	Typ	Max	Units
Output Voltage	Io=40mA,Vin=6.0V	4.900	5.000	5.100	V
Line Regulation △Vout/△VinVout	Io=40mA,6.0V<Vin<10V	-	0.2	0.3	%/V
Load Regulation	Vin=6V,1mA<Io<100mA	-	40	80	mV
Current Consumption	Vin=6.0V	-	2.0	4.5	μA
Dropout Voltage	Io=100mA	-	0.12	0.3	V
	IO=200mA		0.38	0.6	

SOT-89 Dimension



Marking:



Style: Pin 1. Vss 2. Vin 3. Vout

3-Lead SOT-89 Plastic
Surface Mounted Package
CYStek Package Code: M3

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1732	0.1811	4.40	4.60	F	0.0583	0.0598	1.48	1.527
B	0.1594	0.1673	4.05	4.25	G	0.1165	0.1197	2.96	3.04
C	0.0591	0.0663	1.50	1.70	H	0.0551	0.0630	1.40	1.60
D	0.0945	0.1024	2.40	2.60	I	0.0138	0.0161	0.35	0.41
E	0.01417	0.0201	0.36	0.51					

Notes: 1.Controlling dimension: millimeters.
2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:

- Lead: 42 Alloy ; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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