PJ2108

Dual Differential Input Operational Amplifiers And Voltage Reference

The PJ2108 is a monolithic IC that includes one independent op-amp and another op-amp for which the non inverting input is wired to a 2.5V fixed Voltage Reference. This device is offering space and cost saving in many applications like power supply management or data acquisition systems

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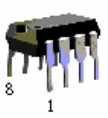

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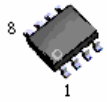


Pin : 1. Output A
2. Inverting Input A
3. Non-Inverting Input A
4. Vcc -
5. Non-Inverting Input B
6. Inverting Input B
7. Output B
8. V_{CC} +

FEATURES

OPERATIONA AMPLIFIER

- Low input offset voltage : 0.5mV typ. For PJ2108
- Low supply current : 350μA/op. (@ V_{CC}=5V)
- Medium bandwidth (unity gain) : 0.9MHz
- Large output voltage swing : 0V to (Vcc-1.5V)
- Input common mode voltage range includes ground
- Wide power supplu range : 3 to 32V , ±1.5 to ±16

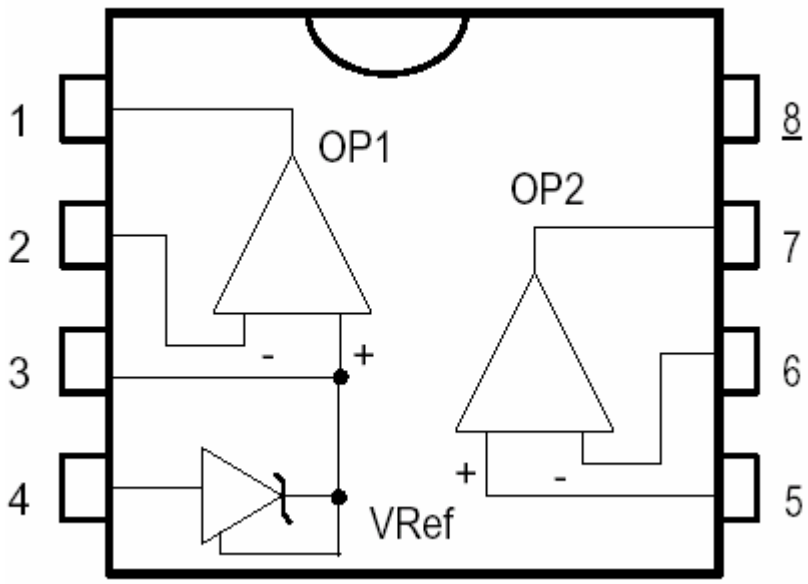
VOLTAGE REFERENCE

- Fixed output voltage reference 2.5V
- 0.4% and 1% voltage precision
- Sink current capability : 1 to 100mA
- Typical output impedance : 0.2Ω

ORDERING INFORMATION

Device	Operating Temperature (Ambient)	Package
PJ2108CD	-20℃ to +85℃	DIP-8
PJ2108CS		SOP-8

BLOCK DIAGRAM



Dual Differential Input Operational Amplifiers And Voltage Reference

ABSOLUTE MAXIMUM RATINGS

Rating	Symbol	PJ358	Unit
Power Supply Voltage Single Supply Split Supplies	V_{CC} V_{CC}, V_{EE}	32 ±16	Vdc
Input Differential Voltage Range (1)	V_{IDR}	±32	Vdc
Input Common Mode Voltage Range (2)	V_{ICR}	-0.3 to 32	Vdc
Input forward current (3) (VI --0.3V)	I_{IF}	50	mA
Output Short Circuit Duration	t_S	Continuous	
Junction Temperature Plastic Packages	T_J	150	℃
Storage Temperature Range Plastic Packages	T_{stg}	-55 to +125	℃

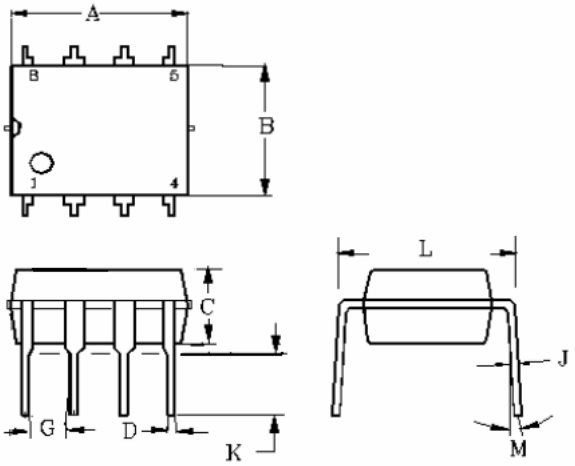
ELECTRICAL CHARACTERISTICS(T_A =25, ℃ Vcc = 5V unless otherwlse noted).

TOTAL SUPPLY VOLTAGE SECTION						
Characteristics	**Symbol**	**Conditions**	**Min**	**Typ**	**Max**	**Unit**
Total Supply Current		Vcc=0V, No Load				
Operational Amplifiers						
Input Offset Voltage	Vio		--	1	4.5	mA
Input Bias Current	Iib		--	50	150	nA
Input Common-Mode Voltage Range	Vicm	V_{CC} = 30 V V_{CC} = 30 V , (T_A =85℃ to -10℃)	0.4	--	Voc-1.2V	V
Slew Rate	SR	Vi=10V, Vcc=12V Rload=10K, Cload=100pF	--	0.75	--	V/μs
Large Signal Voltage Gain	Avd	R_L = 2.0K , V_{CC} =15V, For Large V_O Swing, T_A =85℃ to -20℃	60	100	--	dB
Common Mode Rejection Ratio	CMRR	Vcc=15V	70	90	--	dB
Power Supply Rejection Ratio	SVRR	Vcc=5V to 15V	65	100	--	dB
Output Source Current	Isource	Vo=2.5V, Vid=+1V	3	6	--	mA
Output Voltage -- High	Voh	Vcc=15V, Rload=10K	12	13	--	V
Output Voltage -- Low	Vol	Rload=10K	--	100	250	mV
Gain Bandwidth	GB	Rload=10K, Cload=100pF,f=100KHz	--	1.5	--	MHz
Phase Margin	PM	Rload=10K, Cload=100pF	--	55	55	Degree
Total Harmonic Distortion	THD		--	0.05	--	%
Output Sink Current	Isink	V0=2.5V, Vid=-1V	3	6	--	mA

ELECTRICAL CHARACTERISTICS(T_A =25, ℃ Vcc = 5V unless otherwlse noted).

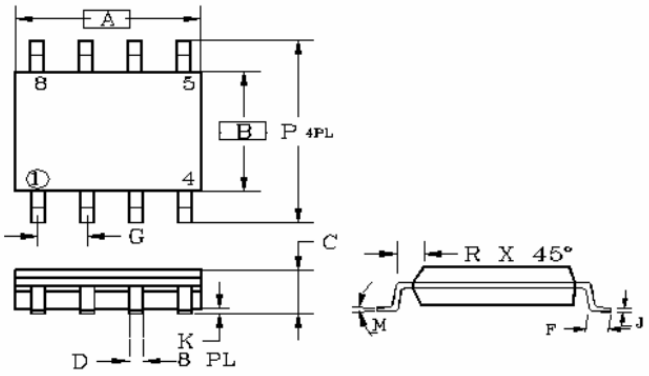
ADJUSTABLE SHUNT REGULATOR						
Characteristics	**Symbol**	**Conditions**	**Min**	**Typ**	**Max**	**Unit**
Recommended Cathod Current	Ik		0.5	--	100	mA
Reference Input Voltage	Vref	PJ2108	2.475	2.5	2.525	V
Reference Input Voltage Deviation	dVref	Vka=Vref, Ik=10mA -40℃< Ta < 105℃	--	7	30	mV
Load Regulation	Rload	Ik=1mA – 10mA	--	3	10	mV
MinimumCathod Current for Regulation	Imin		--	0.2	0.5	mA

DIP-8



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.07	9.32	0.357	0.367
B	6.22	6.48	0.245	0.255
C	3.18	4.43	0.125	0.135
D	0.35	0.55	0.019	0.020
G	2.54BSC		0.10BSC	
J	0.29	0.31	0.011	0.012
K	3.25	3.35	0.128	0.132
L	7.75	8.00	0.305	0.315
M	-	10°	-	10°

SOP-8



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.80	5.00	0.189	0.196
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27BSC		0.05BSC	
K	0.10	0.25	0.004	0.009
M	0°	7°	0°	7°
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019