

The PJ5800/A series are highly precise, low ground current and fixed output voltage regulators manufactured using CMOS process. The series provides large currents with a significantly small dropout voltage. The PJ5800/A consists of a current limiting circuit; a thermal limiting, a precision reference voltage and an error amplifier provide maximal protection against any fault conditions. Output voltage ranges are adjustable, 1.5V, 1.8V, 2.5V, 3.3V; TO-252 (1W), SOT-89 (500mW) and SOT-223 (800mW) packages are available.

FEATURES

- Maximum Output Current: 500mA
- Dropout Voltage: 300mV
- Maximum Operating Voltage: 12V
- Output Voltage Range:
Adjustable, 1.5V, 1.8V, 2.5V, 3.3V
- Highly Accurate: $\pm 2\%$
- Low Ground Current: TYP 100 μ A
- Fast Transient Response
- Current Limited and Thermal Limited

Applications

- Voltage Regulator for LAN Card, CD-ROM and DVD
- Cordless phones
- Camera, video recorders
- Portable games
- Portable AV equipment
- Reference voltage
- Battery powered equipment

TO-252

PJ5800	PJ5800A
Pin 1. In	Pin 1. Gnd
2. Out	2. In
3. Gnd	3. Out

SOT-89

PJ5800	PJ5800A
Pin 1. Out	Pin 1. Gnd
2. Gnd	2. In
3. Int	3. Out

(Heatsink surface connected to Pin 2)

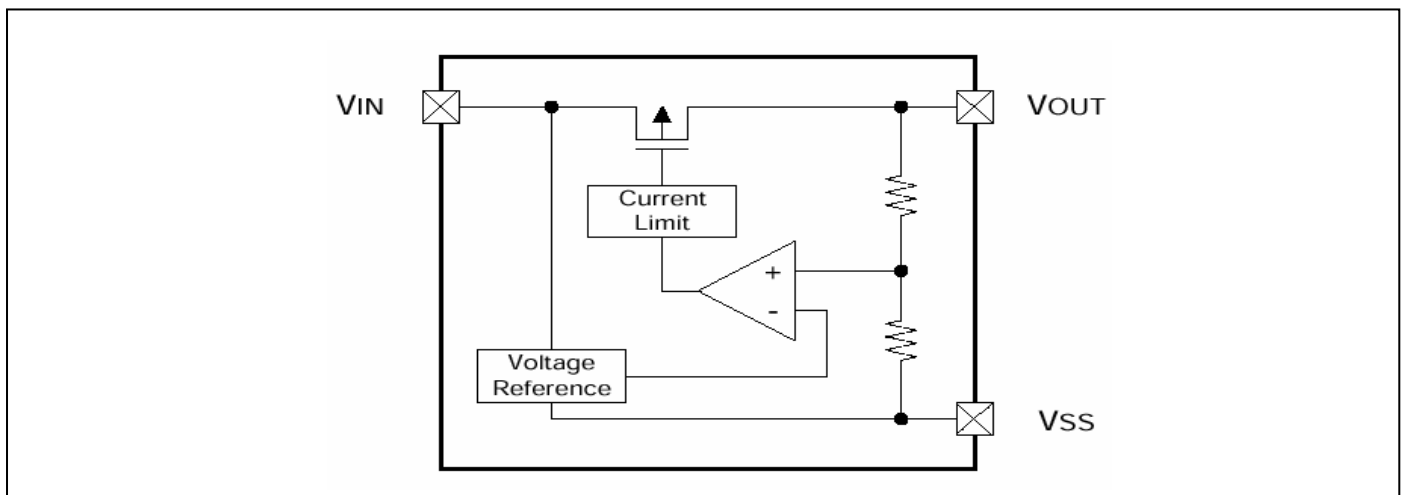
SOT-223

PJ5800	PJ5800A
Pin 1. In	Pin 1. Gnd
2. Out	2. Out
3. Gnd	3. In

ORDER INFORMATION

Device	Operation Temperature (Ambient)	Package
PJ58xxCP	-20°C ~ +85°C	SOT-252
PJ58xxCY		SOT-89
PJ58xxCW		SOT-223
PJ58xxACP		TO-252
PJ58xxACY		SOT-89
PJ58xxACW		SOT-223

BLOCK DIAGRAM



500mA CMOS Low Dropout Voltage Regulators

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Input Voltage	V_{IN}	12	V
Output Current	I_{OUT}	500	mA
Output Voltage	V_{OUT}	$V_{SS}-0.3 \sim V_{IN} +0.3$	V
Power Dissipation $P_D@T_A=25^\circ C$	TO-252 SOT-89 SOT-223	1000 500 800	mW
Operating Temp. (Ambient)	T_{opr}	-20 ~ +85	$^\circ C$
Storage Temp.	T_{stg}	-40 ~ +125	$^\circ C$

ORDERING INFORMATION

Part Number	Output Voltage	Package
PJ5800CP/CY/CW	Adjustable	SOT-252 / SOT-89 / SOT-223
PJ5815CP/CY/CW	1.5V	SOT-252 / SOT-89 / SOT-223
PJ5818CP/CY/CW	1.8V	SOT-252 / SOT-89 / SOT-223
PJ5825CP/CY/CW	2.5V	SOT-252 / SOT-89 / SOT-223
PJ5833CP/CY/CW	3.3V	SOT-252 / SOT-89 / SOT-223

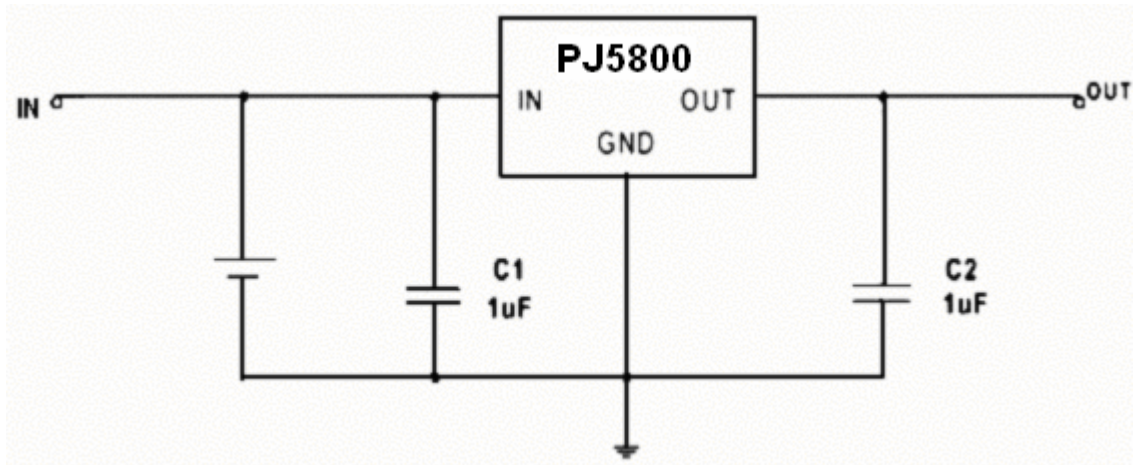
ELECTRICAL CHARACTERISTICS ($T_a = +25^\circ C, V_{in}=5V$ unless otherwise noted)

PJ58xx $V_{out} = x.x V$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit	Circuit
Output Voltage	V_{OUT}	$I_{OUT}=1mA, V_{IN}=5V$	-2	V_o	+2	%	2
Load Regulation	ΔV_{OUT}	$V_{IN}=5V$ $1mA \leq I_{OUT} \leq 500mA$	--	20	50	mV	2
Dropout Voltage(Note 1)	V_{dif1}	$I_{OUT}=300mA$	--	450	--	mV	2
	V_{dif2}	$I_{OUT}=500mA$	--	750	--	mV	
Standby Current	I_{BIAS}	$I_{OUT}=0mA$ $V_{in}=12V$	--	100	110	μA	1
Current Limit	I_{LIMIT}	$V_{IN}=5V, V_{OUT}=0V$	--	550	700	mA	2
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	$I_{OUT} = 1mA$ $4.3V \leq V_{IN} \leq 10V$	--	0.2	0.3	%/V	2
Output Voltage Temperature Coefficient		(Note 2)	--	100	--	ppm/ $^\circ C$	2

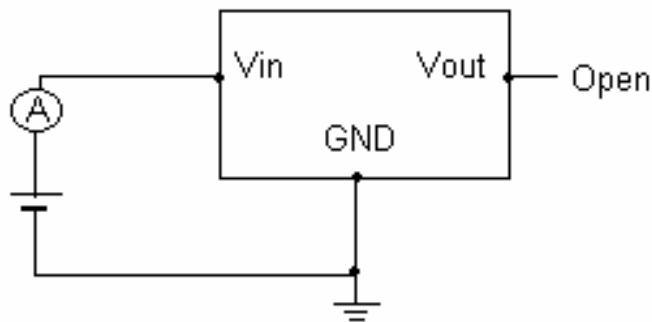
Note: 1. $V_{dif}=V_{IN} - V_{OUT}$
2. Design Characteristics

TYPICAL APPLICATIONS

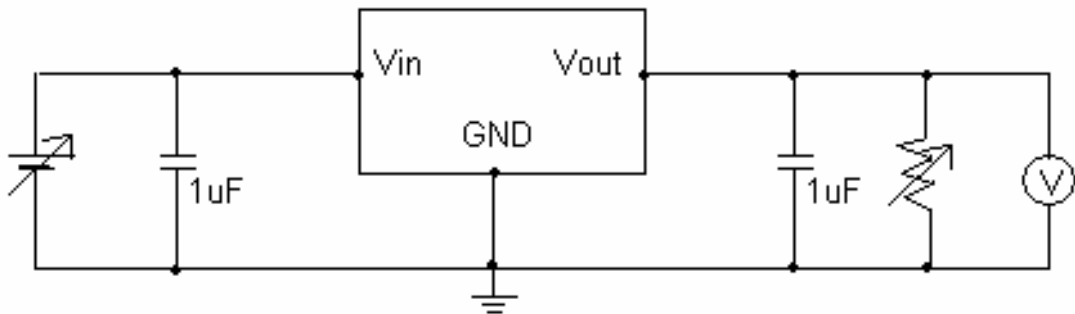


MEASURING CIRCUITS

Measuring Circuit 1: Standby Current

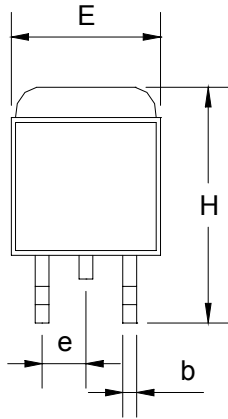


Measuring Circuit 2: Output Voltage, Oscillation Check, Line Regulation, Dropout Voltage, Load Regulation

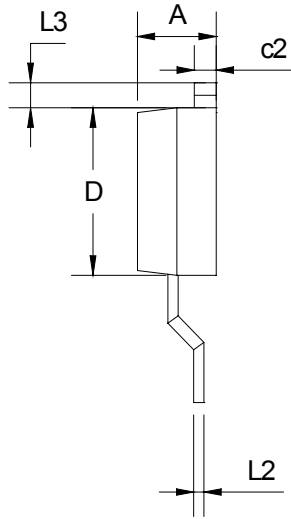


TO-252 Mechanical drawing

1.Top View



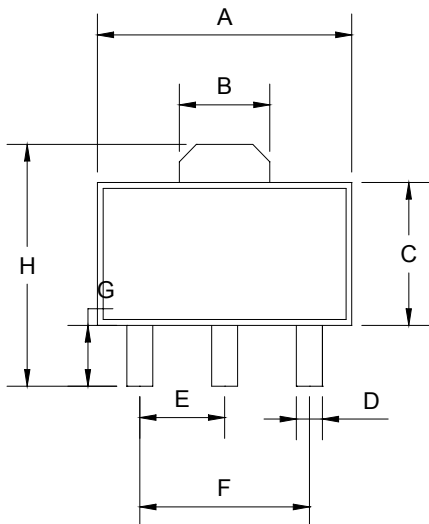
2.Side View



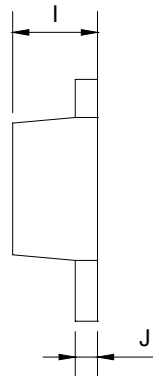
TO-252 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.184	2.388	0.086	0.094
b	0.635	0.889	0.025	0.035
c2	0.457	0.889	0.018	0.035
D	5.334	5.588	0.210	0.220
E	6.35	6.731	0.250	0.265
e	2.286BSC		0.090BSC	
H	9.398	10.414	0.370	0.410
L2	0.508BSC		0.020BSC	
L3	1.524	2.032	0.060	0.080

SOT-89 Mechanical drawing

1.Top View

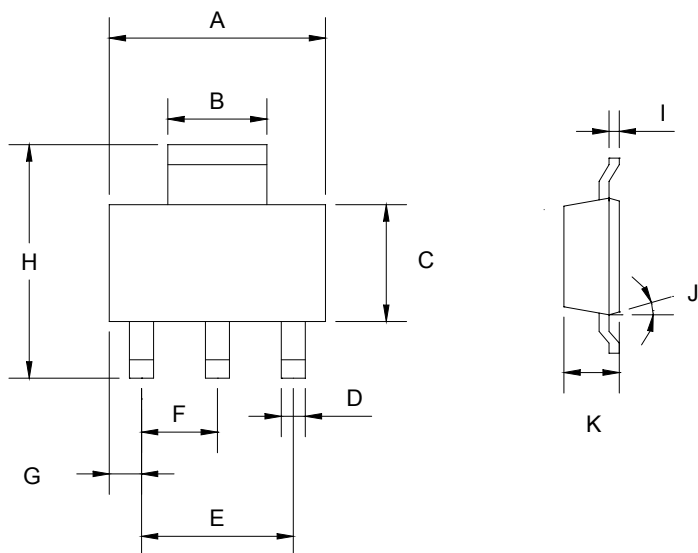


2.Side View



SOT-89 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.4	4.6	0.173	0.181
B	1.5	1.7	0.059	0.070
C	2.30	2.60	0.090	0.102
D	0.40	0.52	0.016	0.020
E	1.50	1.50	0.059	0.059
F	3.00	3.00	0.118	0.118
G	0.89	1.20	0.035	0.047
H	4.05	4.25	0.159	0.167
I	1.4	1.6	0.055	0.063
J	0.35	0.44	0.014	0.017

SOT-223 Mechanical drawing



SOT-223 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	6.30	6.80	0.248	0.268
B	2.90	3.10	0.114	0.122
C	3.30	3.70	0.129	0.146
D	0.63	0.83	0.024	0.033
E	4.55	4.65	0.179	0.183
F	2.25	2.35	0.088	0.093
G	0.835	1.035	0.032	0.041
H	6.70	7.30	0.263	0.287
I	0.255	0.355	0.010	0.014
J	10°	16°	10°	16°
K	1.55	1.80	0.061	0.071