EZ1117/EZ1117A
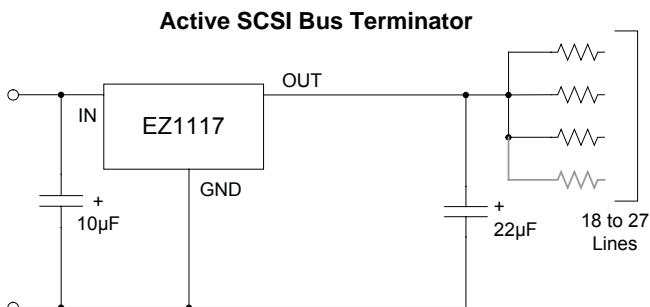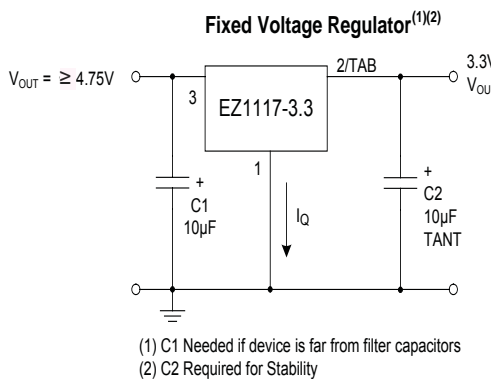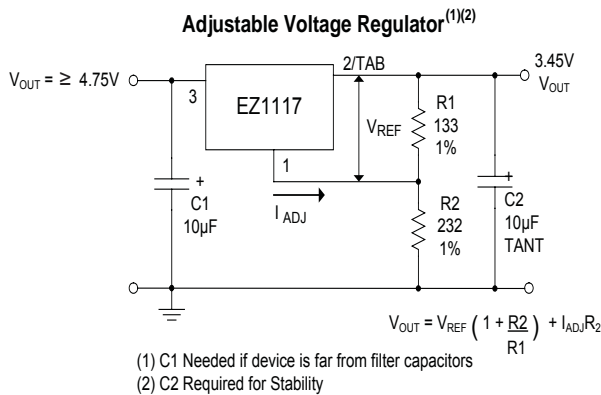## 0.8 & 1.0 AMP Positive Voltage Regulators

Description

The EZ1117 series of high performance positive voltage regulators are designed for use in applications requiring low dropout performance at full rated current.

Additionally, the EZ1117 series provides excellent regulation over variations in line, load and temperature. Outstanding features include low dropout performance at rated current, fast transient response, internal current limiting and thermal shutdown protection of the output device. The EZ1117 series of three terminal regulators offer fixed and adjustable voltage options available in the space saving SOT-223 and TO-263 packages.

Features

◆ Low dropout performance,
   1.2V max. for EZ1117
   1.3V max. for EZ1117A
◆ Full current rating over line and temperature
◆ Fast transient Response
◆ ±2% total output regulation over line, load and temperature
◆ Adjust pin current max 90µA over temperature
◆ Fixed/adjustable output voltage
◆ Line regulation 0.2% max.
◆ Load regulation 0.4% max.
◆ SOT-223 and TO-263 packages

Typical Application Circuits

Adjustable Voltage Regulator[1][2]

$$V_{OUT} = V_{REF} \left(1 + \frac{R2}{R1} \right) + I_{ADJ}R_2$$

(1) C1 Needed if device is far from filter capacitors
(2) C2 Required for Stability

Fixed Voltage Regulator[1][2]

(1) C1 Needed if device is far from filter capacitors
(2) C2 Required for Stability

Active SCSI Bus Terminator

Applications

◆ Active SCSI termination
◆ Low voltage microcontrollers
◆ Switching power supply post-regulator

Ordering Information

Device[1,2]	Package	V_{OUT} Volts
EZ1117CST-X.X EZ1117ACST-X.X	SOT-223	See Note (1)
EZ1117CM-X.X EZ1117ACM-X.X	TO-263	See Note (1)

Notes:
(1) Where X.X denotes voltage options. Available voltages are: 2.5V, 2.85V and 3.3V. Leave blank for adjustable version (1.3 to 5.7V). Contact factory for additional voltage options.
(2) Add suffix 'TR' for tape and reel.

Absolute Maximum Ratings

Parameter	Symbol	Max	Units
Input Supply Voltage	V_{IN}	7	V
Power Dissipation	P_D	Internally Limited	W
Thermal Resistance Junction to Case SOT-223	θ_{JC}	15	°C/W
TO-263		3	
Thermal Resistance Junction to Ambient SOT-223	θ_{JA}	156	°C/W
TO-263		60	
Operating Junction Temperature Range	T_J	0 to 125	°C
Storage Temperature Range	T_{STG}	-65 to 150	°C
Lead Temperature (Soldering) 10 Sec	T_{LEAD}	260	°C

Electrical Characteristics[6]

Adj. Option: V_{IN} = 2.65V to 7.0V and Adj I_O = 10mA to I_{RATED}
Fixed Options: I_O = 0mA to I_{RATED}
Fixed 2.5V: V_{IN} = 3.9V to 7.0V
Fixed 2.85V: V_{IN} = 4.25V to 7.0V
Fixed 3.3V: V_{IN} = 4.75V to 7.0V

Parameter	Symbol	Test Conditions			Test Limits			Units
		V_{IN}	I_O	T_J[5]	Min	Typ	Max	
Output Voltage[1]	V_D	5V	0mA	25°C	$0.99\|V_O\|$	V_O	$1.01\|V_O\|$	V
(Fixed Voltage Versions)				O.T.	$0.98\|V_O\|$	V_O	$1.02\|V_O\|$	
Reference Voltage[1]	V_{REF}	5V	10mA	25°C	1.238	1.250	1.262	V
(Adj Voltage Version)				O.T.	1.225	1.250	1.270	
Line Regulation[1]	$REG_{(LINE)}$		10mA	O.T.		0.035	0.2	%
Load Regulation[1]	$REG_{(LOAD)}$	5V		O.T.		0.2	0.4	%
Dropout Voltage[2]	V_D		100mA	O.T.		1.00	1.10	V
			500mA			1.05	1.15	
			800mA			1.10	1.20	
EZ1117A			1,000mA			1.10	1.30	
Current Limit	I_{CL}			O.T.	0.8			A
EZ1117								
EZ1117A					1.0			

Electrical Characteristics (Cont.)

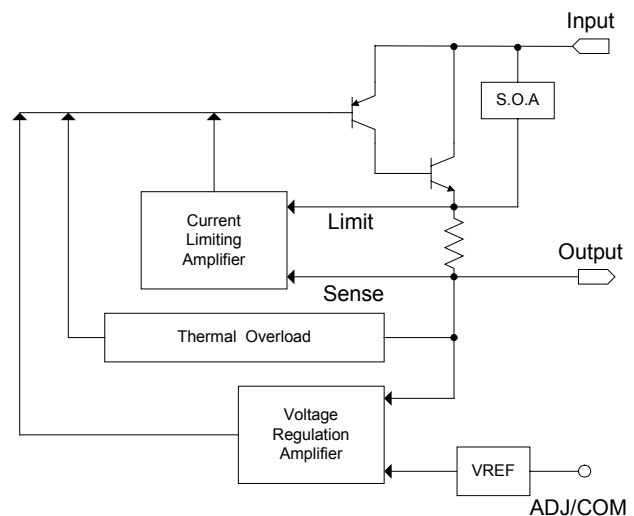| Parameter	Symbol	Test Conditions			Test Limits			Units
		V_{IN}	I_O	$T_J^{(5)}$	Min	Typ	Max	
Quiescent Current Fixed Voltage Version	I_Q	5V		O.T.		10	13	mA
Temperature Coefficient	T_C			O.T.		0.005		%/°C
Adjust Pin Current	I_{ADJ}			O.T.		55	90	μA
Adjust Pin Current Change	ΔI_{ADJ}			O.T.		0.2	5	μA
Temperature Stability	T_S			O.T.		0.5		%
Minimum Load Current Adj Voltage Version	I_O	5V		O.T.		5	10	mA
RMS Output Noise[3]	V_N			25°C		0.003		%V_O
Ripple Rejection Ratio[4]	R_A	5V		O.T.	60	72		dB

NOTES:

(1) Low duty cycle pulse testing with Kelvin connections required.
(2) ΔV_{OUT}, ΔV_{REF} = 1%.
(3) Bandwidth of 10Hz to 10kHz.
(4) 120Hz input ripple (CADJ for ADJ = 25μF).
(5) O.T. = over specified operating junction temperature range.
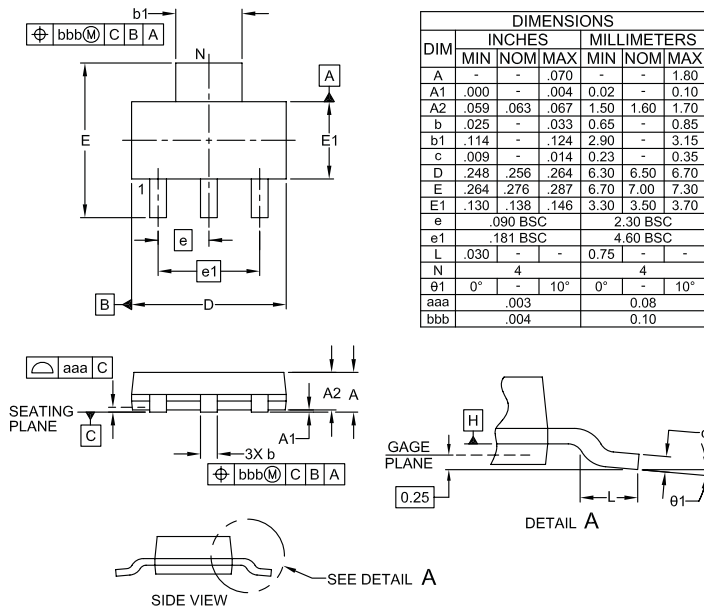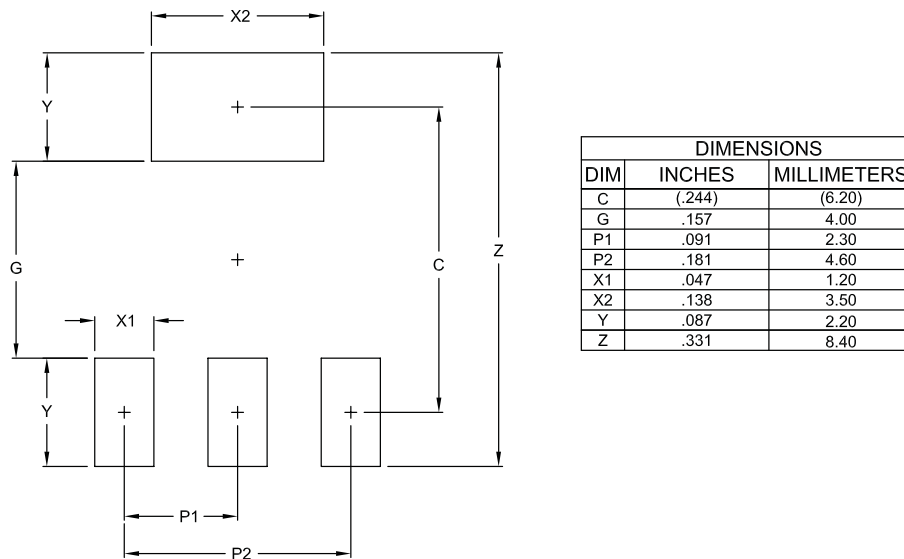(6) I_{RATED} = 1A for EZ1117A and 800mA for EZ1117.

Pin Configurations

EZ1117 EZ1117A	
PIN	FUNCTION
1	ADJ/GND
2	OUTPUT
3	INPUT
TAB IS OUTPUT	

SOT-223   TO-263
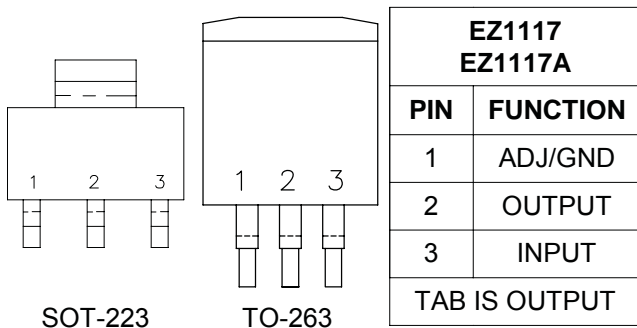
Block Diagram

Outline Drawing - SOT-223

| DIMENSIONS						
DIM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	-	-	.070	-	-	1.80
A1	.000	-	.004	0.02	-	0.10
A2	.059	.063	.067	1.50	1.60	1.70
b	.025	-	.033	0.65	-	0.85
b1	.114	-	.124	2.90	-	3.15
c	.009	-	.014	0.23	-	0.35
D	.248	.256	.264	6.30	6.50	6.70
E	.264	.276	.287	6.70	7.00	7.30
E1	.130	.138	.146	3.30	3.50	3.70
e	.090 BSC			2.30 BSC		
e1	.181 BSC			4.60 BSC		
L	.030	-	-	0.75	-	-
N	4			4		
θ1	0°	-	10°	0°	-	10°
aaa	.003			0.08		
bbb	.004			0.10		

NOTES:
1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. DATUMS -A- AND -B- TO BE DETERMINED AT DATUM PLANE -H-
3. DIMENSIONS "E1" AND "D" DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
4. REFERENCE JEDEC STD TO-261, VARIATION AA.

Land Pattern - SOT-223

DIMENSIONS		
DIM	INCHES	MILLIMETERS
C	(.244)	(6.20)
G	.157	4.00
P1	.091	2.30
P2	.181	4.60
X1	.047	1.20
X2	.138	3.50
Y	.087	2.20
Z	.331	8.40

NOTES:
1. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.
2. REFERENCE IPC-SM-782A.

Outline Drawing - TO-263
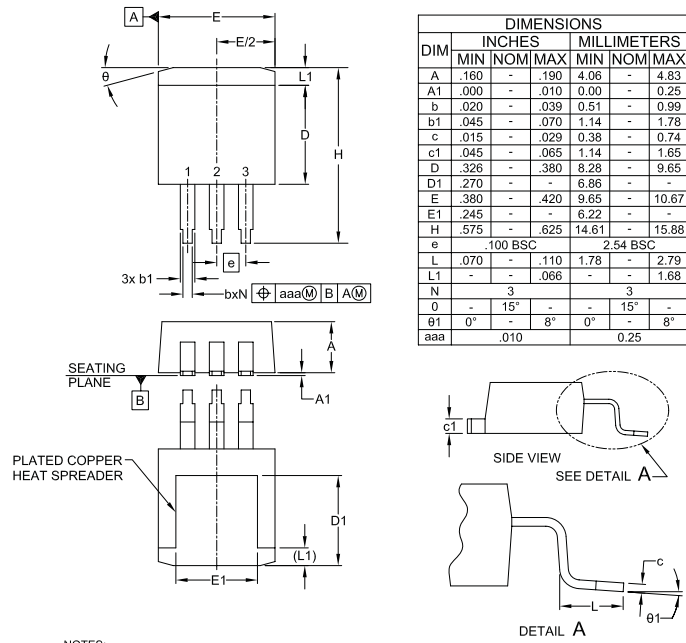
DIMENSIONS						
DIM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.160	-	.190	4.06	-	4.83
A1	.000	-	.010	0.00	-	0.25
b	.020	-	.039	0.51	-	0.99
b1	.045	-	.070	1.14	-	1.78
c	.015	-	.029	0.38	-	0.74
c1	.045	-	.065	1.14	-	1.65
D	.326	-	.380	8.28	-	9.65
D1	.270	-	-	6.86	-	-
E	.380	-	.420	9.65	-	10.67
E1	.245	-	-	6.22	-	-
H	.575	-	.625	14.61	-	15.88
e	.100 BSC			2.54 BSC		
L	.070	-	.110	1.78	-	2.79
L1	-	-	.066	-	-	1.68
N	3			3		
0	-	15°	-	-	15°	-
θ1	0°	-	8°	0°	-	8°
aaa	.010			0.25		

NOTES:
1. CONTROLLING DIMENSIONS ARE IN INCHES (ANGLES IN DEGREES).
2. DIMENSIONS "D" AND "E" DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

Land Pattern - TO-263
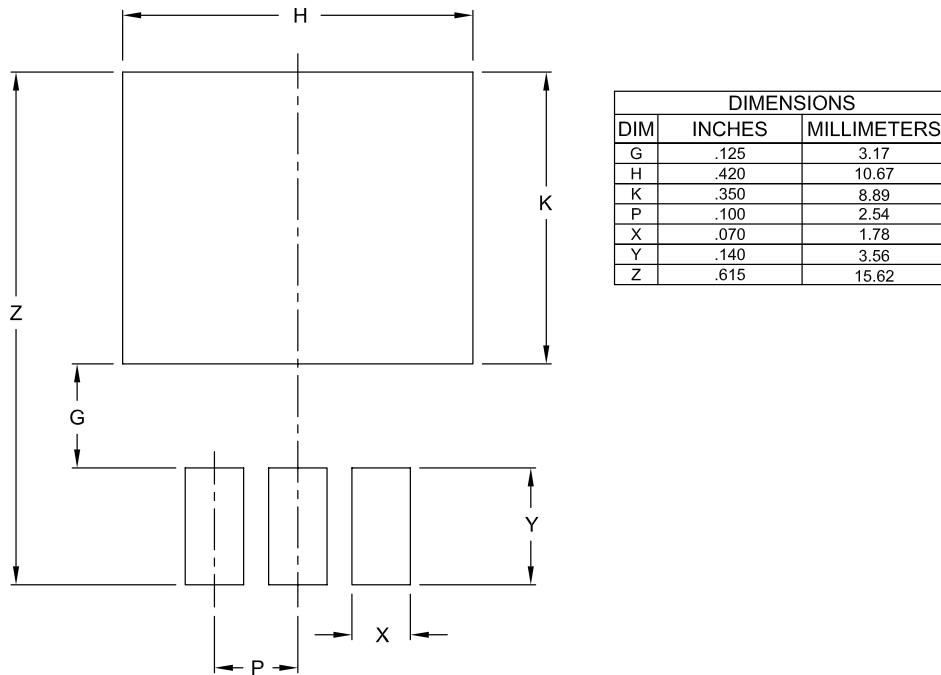
DIMENSIONS		
DIM	INCHES	MILLIMETERS
G	.125	3.17
H	.420	10.67
K	.350	8.89
P	.100	2.54
X	.070	1.78
Y	.140	3.56
Z	.615	15.62

NOTES:
1. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.

Contact Information

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