

Absolute Maximum Rating (Note 1)

Parameter	Symbol	Limit	Unit
Input Supply Voltage	V_{IN}	12	V
Operation Input Supply Voltage	V_{IN} (Opr. Typ.)	7	V
Power Dissipation (Note 2)	P_D	Internal limited	
Thermal Resistance Junction to Ambient	Θ_{JA}	TO-220	80
		TO-263	85
		TO-252	105
		SOT-223	130
Operating Junction Temperature Range	T_J	0 ~ +125	°C
Storage Temperature Range	T_{STG}	-65 ~ +150	°C
Lead Soldering Temperature (260°C)	TO-220 / TO-263	10	S
	TO-252 / SOT-223	5	

Electrical Specification ($T_a = 25^\circ\text{C}$, unless otherwise specified.)

Parameter	Conditions	Min	Typ	Max	Unit
Reference Voltage	$V_{IN} = 2.75$, $I_o = 1A$	1.225	1.25	1.275	V
Output Voltage	$V_{IN} = 3.3V \sim 7V$, $I_o = 1A$	1.470	1.5	1.530	V
	$V_{IN} = 4V \sim 7V$, $I_o = 1A$	1.764	1.8	1.836	V
	$V_{IN} = 4.8V \sim 7V$, $I_o = 1A$	2.450	2.5	2.550	V
	$V_{IN} = 6.5V \sim 7V$, $I_o = 1A$	3.235	3.3	3.366	V
	$V_o + 1.5V \leq V_{IN} \leq 7V$, $I_o = 10mA$	4.900	5.0	5.100	V
Line Regulation	$V_{IN} = V_{OUT} + 1.5V$ $I_o = 10mA \sim 1A$	--	0.015	0.2	%
Load Regulation (Note 1,2)	$I_o = 1A$, $\Delta V_{OUT} = 1\% V_{OUT}$	--	0.05	1.0	%
Dropout Voltage	$V_{IN} = 5V$	--	1.3	1.5	V
Quiescent Current		--	8	10	mA
Adjustable Pin Current	$V_{IN} - V_{OUT} = 3V$	--	90	--	uA
Output Current Limit	$I_o = 10mA$,	1.1	--	--	A
Temperature Stability	$F = 120Hz$, $I_o = 1A$, $C_{OUT} = 25\mu F$, $V_{IN} = V_{out} + 3V$	--	0.5	--	%
Ripple Rejection	$V_{IN} = 2.75$, $I_o = 1A$	--	60	70	dB

Note 1: See thermal regulation specification for changes in output voltage due to heating effects. Line and load regulation are measured at a constant junction temperature by low duty cycle pulse testing. Load regulation is measured at the output lead = 1/18" from the package.

Note 2: Line and load regulation are guaranteed up to the maximum power dissipation of 15W. Power dissipation is determined by the input / output voltage difference and the output current. Guaranteed maximum power dissipation will not be available over the full input / output voltage range.

Note 3: Quiescent current is defined as the minimum output current required to maintain the regulation.

Electrical Characteristics Curve

FIGURE 1 – Dropout Voltage vs. Output Current

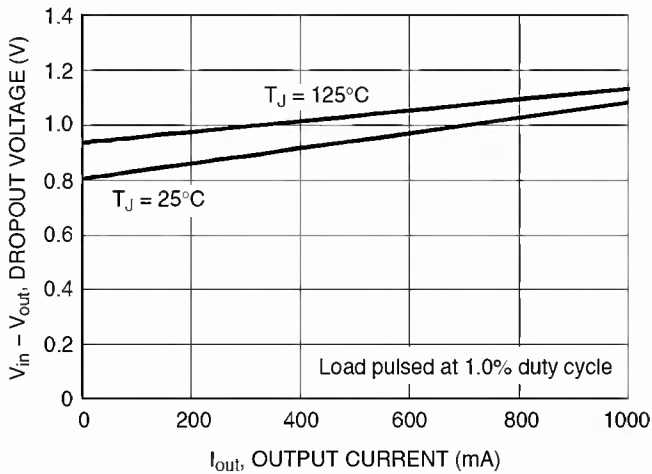


FIGURE 2 – Vout Change vs. Temperature

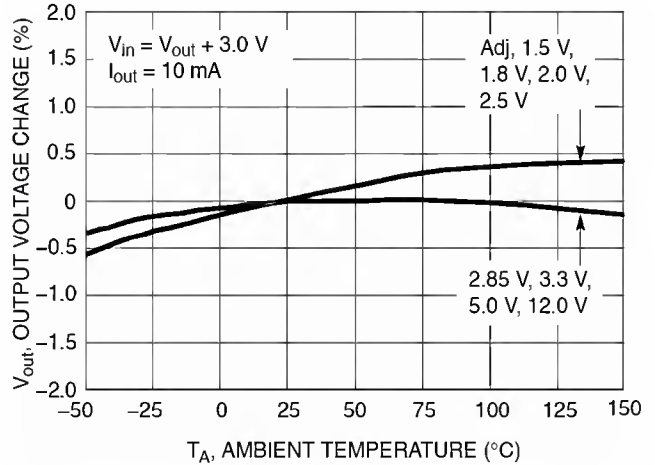


FIGURE 3 – Output Short Circuit Current vs. Differential Voltage

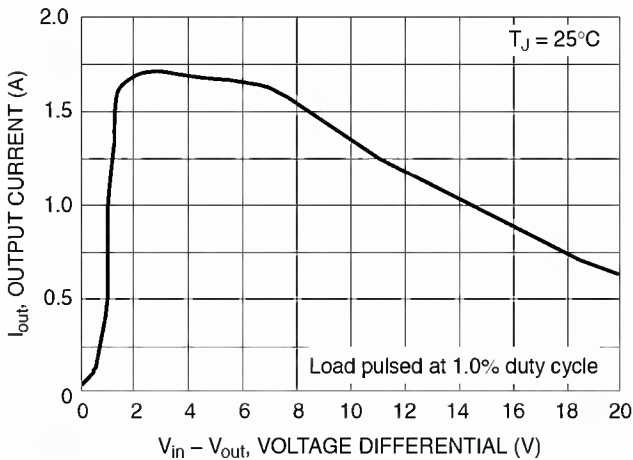


FIGURE 4 – Output Short Circuit Current vs. Temperature

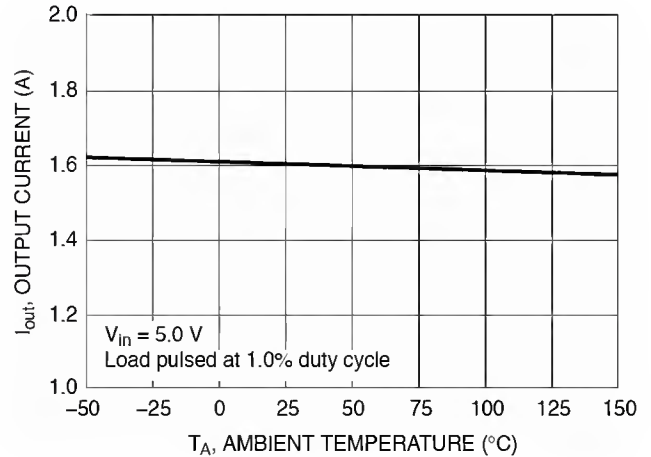


FIGURE 5 – Adjust Pin Current vs. Temperature

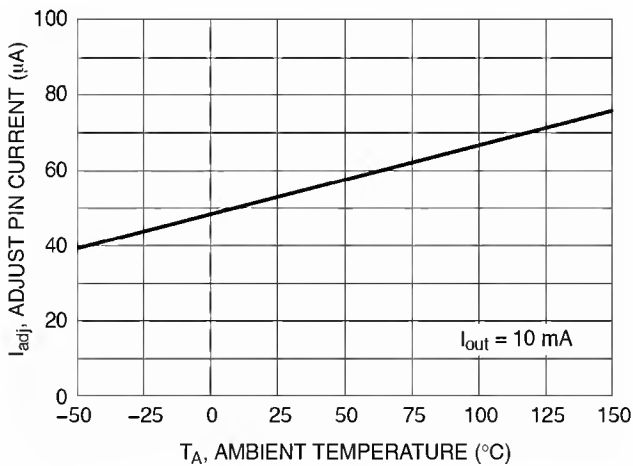
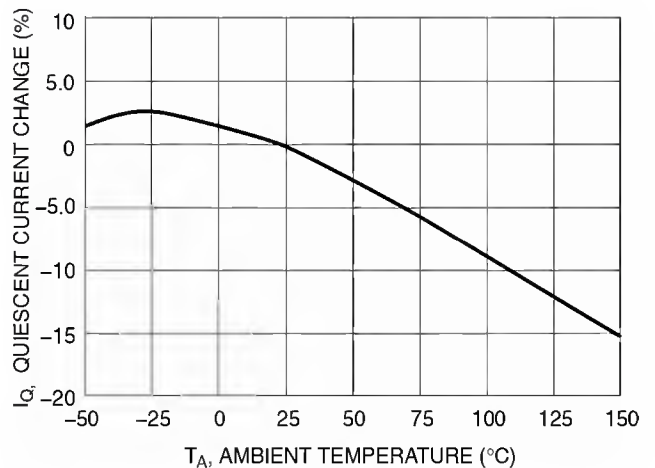


FIGURE 6 – Iq Change vs. Temperature



Application Information

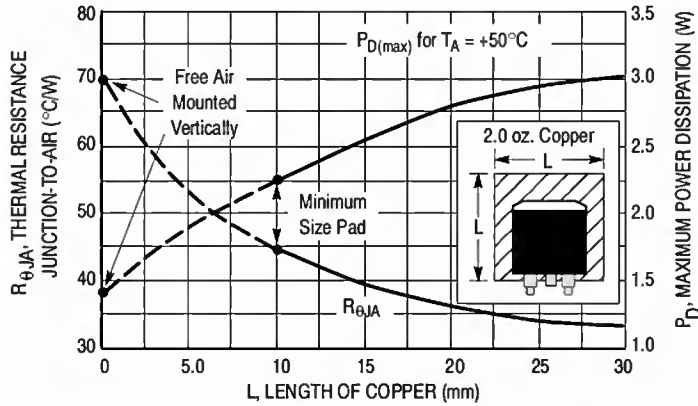


Figure 6 – D²PAK Thermal Resistance and Maximum Power Dissipation vs. P.C.B Copper Length

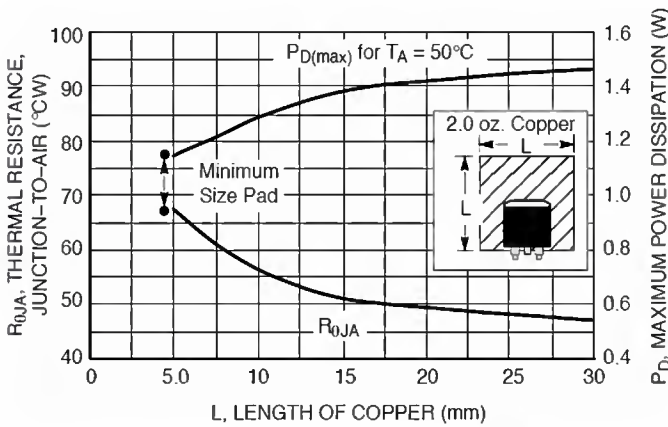


Figure 7 – DPAK Thermal Resistance and Maximum Power Dissipation vs. P.C.B Copper Length

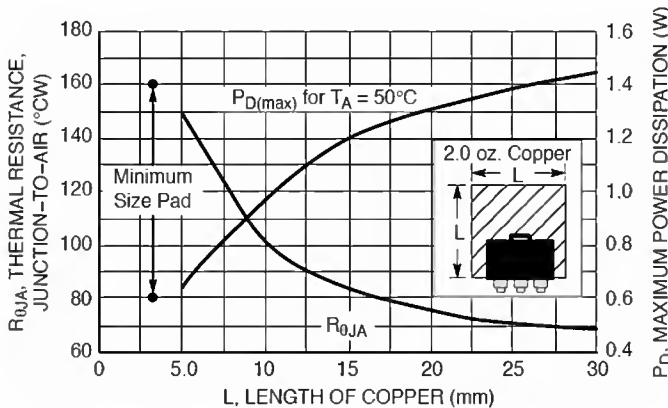
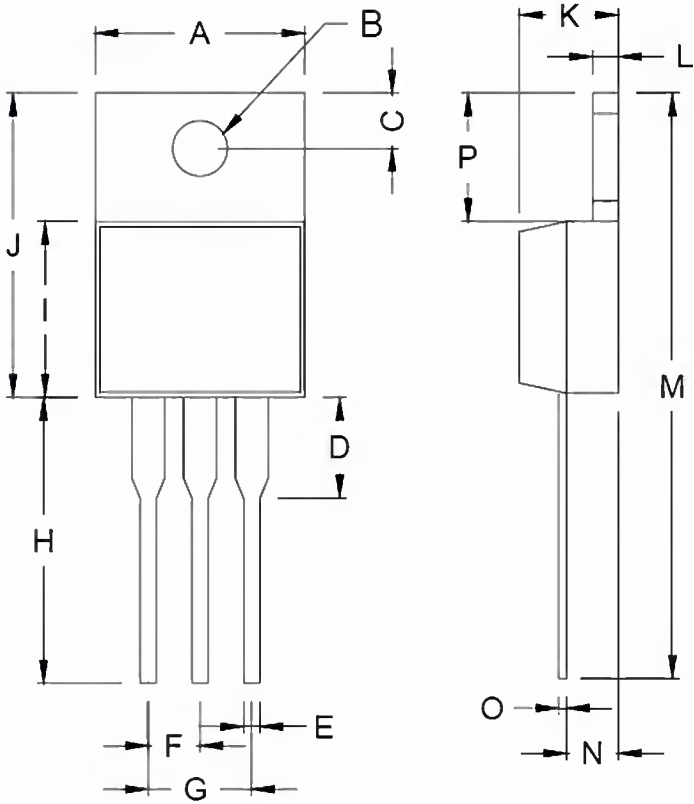


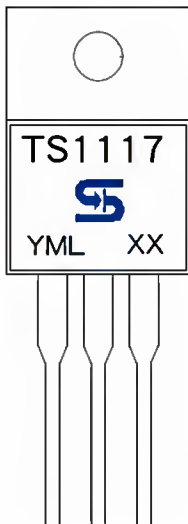
Figure 8 – SOT-223 Thermal Resistance and Maximum Power Dissipation vs. P.C.B Copper Length

TO-220 Mechanical Drawing



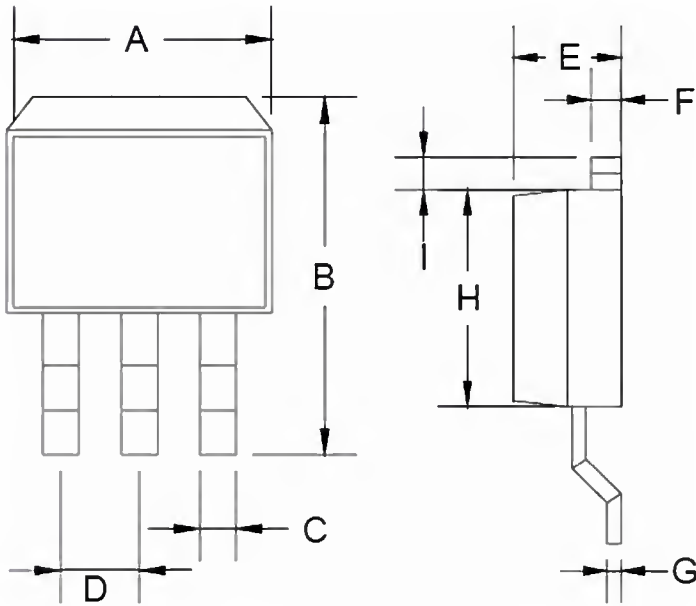
TO-220 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	10.000	10.500	0.394	0.413
B	3.740	3.910	0.147	0.154
C	2.440	2.940	0.096	0.116
D	-	6.350	-	0.250
E	0.381	1.106	0.015	0.040
F	2.345	2.715	0.092	0.058
G	4.690	5.430	0.092	0.107
H	12.700	14.732	0.500	0.581
I	8.382	9.017	0.330	0.355
J	14.224	16.510	0.560	0.650
K	3.556	4.826	0.140	0.190
L	0.508	1.397	0.020	0.055
M	27.700	29.620	1.060	1.230
N	2.032	2.921	0.080	0.115
O	0.255	0.610	0.010	0.024
P	5.842	6.858	0.230	0.270

Marking Diagram



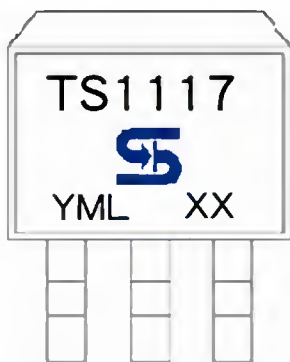
- Y** = Year Code
- M** = Month Code
(A=Jan, B=Feb, C=Mar, D=Apr, E=May, F=Jun, G=Jul, H=Aug, I=Sep, J=Oct, K=Nov, L=Dec)
- L** = Lot Code
- XX** = Voltage Code
(1.5=1.5V, 1.8=1.8V, 2.5=2.5V, 3.3=3.3V, 5.0=5V)
= Package Code for Adjustable type
(CZ = TO-220)

TO-263 Mechanical Drawing



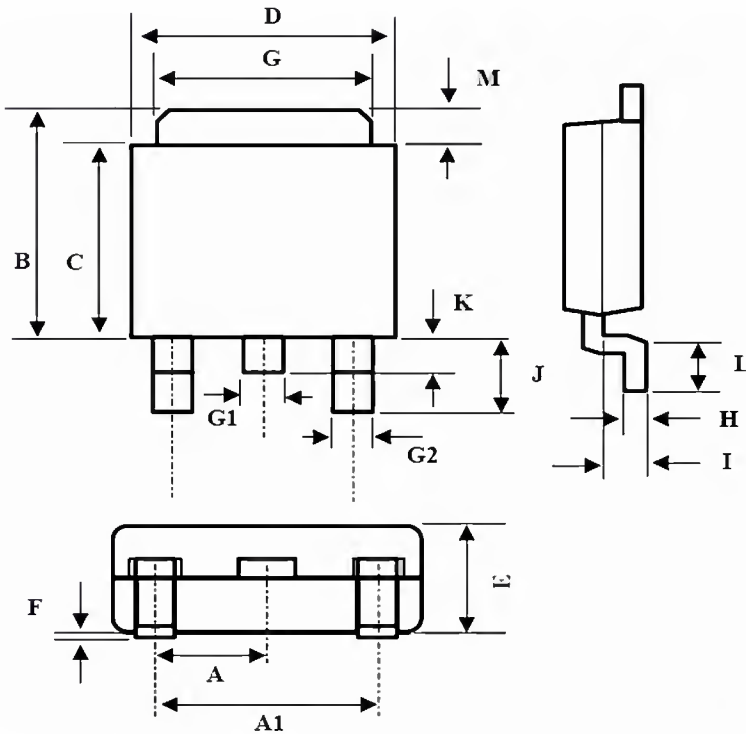
TO-263 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	10.000	10.500	0.394	0.413
B	14.605	15.875	0.575	0.625
C	0.508	0.991	0.020	0.039
D	2.420	2.660	0.095	0.105
E	4.064	4.830	0.160	0.190
F	1.118	1.400	0.045	0.055
G	0.450	0.730	0.018	0.029
H	8.280	8.800	0.325	0.346
I	1.140	1.400	0.044	0.055
J	1.480	1.520	0.058	0.060

Marking Diagram



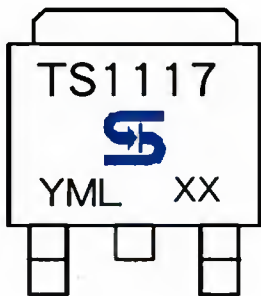
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- L** = Lot Code
- XX** = Voltage Code
(1.5=1.5V, 1.8=1.8V, 2.5=2.5V, 3.3=3.3V, 5.0=5V)
= Package Code for Adjustable type
(CM = TO-263)

TO-252 Mechanical Drawing



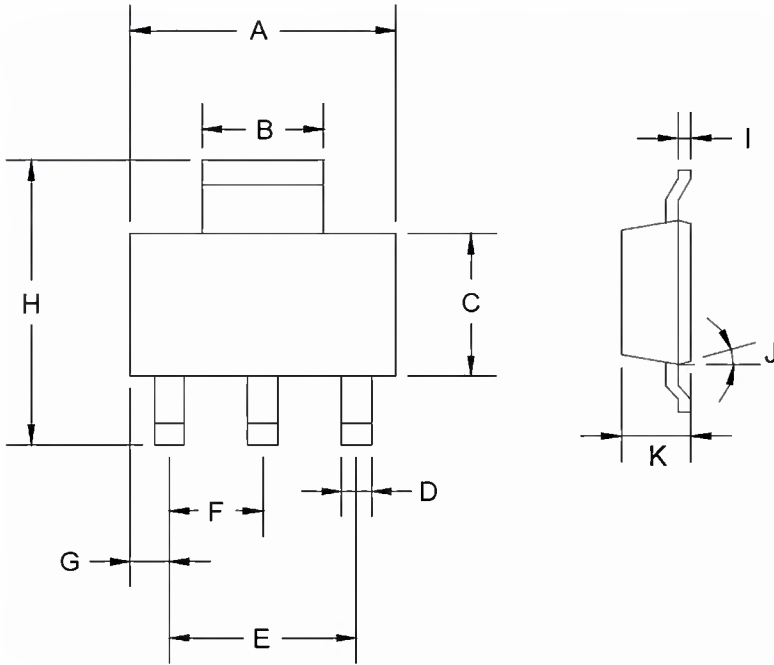
DIM	TO-252 DIMENSION			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.3BSC		0.09BSC	
A1	4.6BSC		0.18BSC	
B	6.80	7.20	0.268	0.283
C	5.40	5.60	0.213	0.220
D	6.40	6.65	0.252	0.262
E	2.20	2.40	0.087	0.094
F	0.00	0.20	0.000	0.008
G	5.20	5.40	0.205	0.213
G1	0.75	0.85	0.030	0.033
G2	0.55	0.65	0.022	0.026
H	0.35	0.65	0.014	0.026
I	0.90	1.50	0.035	0.059
J	2.20	2.80	0.087	0.110
K	0.50	1.10	0.020	0.043
L	0.90	1.50	0.035	0.059
M	1.30	1.70	0.051	0.67

Marking Diagram



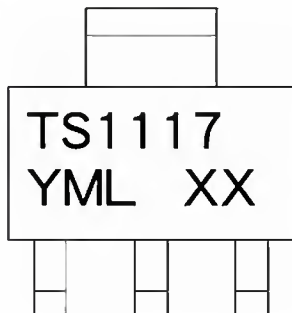
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- L** = Lot Code
- XX** = Voltage Code
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= Package Code for Adjustable type
(CP = TO-252)

SOT-223 Mechanical Drawing



SOT-223 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	6.350	6.850	0.250	0.270
B	2.900	3.100	0.114	0.122
C	3.450	3.750	0.136	0.148
D	0.595	0.635	0.023	0.025
E	4.550	4.650	0.179	0.183
F	2.250	2.350	0.088	0.093
G	0.835	1.035	0.032	0.041
H	6.700	7.300	0.263	0.287
I	0.250	0.355	0.010	0.014
J	10°	16°	10°	16°
K	1.550	1.800	0.061	0.071

Marking Diagram



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(A=Jan, B=Feb, C=Mar, D=Apr, E=May, F=Jun, G=Jul, H=Aug, I=Sep, J=Oct, K=Nov, L=Dec)
- L** = Lot Code
- XX** = Voltage Code
(1.5=1.5V, 1.8=1.8V, 2.5=2.5V, 3.3=3.3V, 5.0=5V)
- = Package Code for Adjustable type
(CW = SOT-223)

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