

Features

- Low Dropout Voltage: 1.15V(typ.) at 1000mA Output Current
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)

Maximum Ratings

- Thermal Resistance: 100°C/W Junction to Ambient
- Storage Temperature Range: -55°C to +150°C
- Operating Junction Temperature : 150°C

Parameter	Symbol	Value	Unit
Input Voltage	V_1	20	V
ESD Voltage (Machine Model)	V_{ESD}	400	V

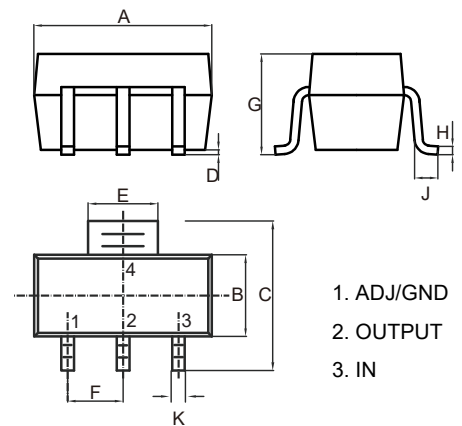
Recommended Operating Conditions

Parameter	Symbol	Value	Unit
Input Voltage	V_i	15	V
Operating Junction Temperature	T_j	-25 ~125	°C

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

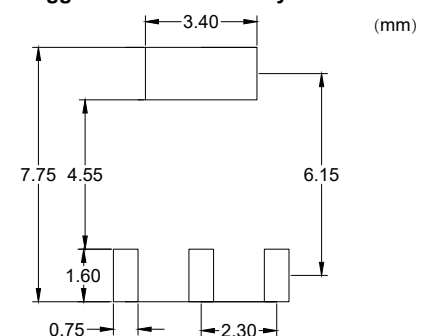
Low Dropout Linear Regulator

SOT-223



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.248	0.264	6.30	6.70	
B	0.130	0.146	3.30	3.70	
C	0.264	0.287	6.70	7.30	
D	0.001	0.004	0.02	0.10	
E	0.114	0.122	2.90	3.10	
F	0.091		2.30		TYP.
G	---	0.071	---	1.80	
H	0.009	0.014	0.23	0.35	
J	0.030	---	0.75	---	
K	0.026	0.033	0.66	0.84	

Suggested Solder Pad Layout



Electrical Characteristics ($V_{in} \leq 10, T_J = 25^\circ\text{C}$ Unless Otherwise Specified)

Parameter	Symbol	Part Number	Test Conditions	Min	Typ	Max	Unit
Reference Voltage	V_{IROC}	MCT1117B-ADJ	$I_{OUT} = 10\text{mA}, V_{IN} = 3.23\text{V}$	1.231	1.25	1.269	V
			$10\text{mA} \leq I_{OUT} \leq 1\text{A}, 2.75\text{V} \leq V_{IN} - V_{OUT} \leq 13.25\text{V}$	1.225	1.25	1.275	V
Output Voltage	V_O	MCT1117B-1.8	$I_{OUT} = 10\text{mA}, V_{IN} = 3.8\text{V}$	1.773	1.8	1.827	V
			$10\text{mA} \leq I_{OUT} \leq 1\text{A}, 3.3\text{V} \leq V_{IN} \leq 12\text{V}$	1.764	1.8	1.836	V
		MCT1117B-2.5	$I_{OUT} = 10\text{mA}, V_{IN} = 4.5\text{V}$	2.463	2.5	2.538	V
			$10\text{mA} \leq I_{OUT} \leq 1\text{A}, 4\text{V} \leq V_{IN} \leq 12\text{V}$	2.45	2.5	2.55	V
		MCT1117B-3.3	$I_{OUT} = 10\text{mA}, V_{IN} = 5.3\text{V}$	3.251	3.3	3.35	V
			$10\text{mA} \leq I_{OUT} \leq 1\text{A}, 4.8\text{V} \leq V_{IN} \leq 12\text{V}$	3.234	3.3	3.366	V
		MCT1117B-5.0	$I_{OUT} = 10\text{mA}, V_{IN} = 7.0\text{V}$	4.925	5	5.075	V
			$10\text{mA} \leq I_{OUT} \leq 1\text{A}, 6.5\text{V} \leq V_{IN} \leq 12\text{V}$	4.9	5	5.1	V
Line Regulation	LNR	MCT1117B-ADJ	$I_{OUT} = 10\text{mA}, 1.5\text{V} \leq V_{IN} - V_{OUT} \leq 12\text{V}$	-	-	0.2	%
		MCT1117B-1.8	$I_{OUT} = 10\text{mA}, 1.5\text{V} \leq V_{IN} - V_{OUT} \leq 10.2\text{V}$	-	-	7	mV
		MCT1117B-2.5	$I_{OUT} = 10\text{mA}, 1.5\text{V} \leq V_{IN} - V_{OUT} \leq 9.5\text{V}$	-	-	7	mV
		MCT1117B-3.3	$I_{OUT} = 10\text{mA}, 1.5\text{V} \leq V_{IN} - V_{OUT} \leq 8.7\text{V}$	-	-	7	mV
		MCT1117B-5.0	$I_{OUT} = 10\text{mA}, 1.5\text{V} \leq V_{IN} - V_{OUT} \leq 7\text{V}$	-	-	10	mV
Load Regulation	LDR	MCT1117B-ADJ	$V_{IN} - V_{OUT} = 1.5\text{V}, 10\text{mA} \leq I_{OUT} \leq 1\text{A}$	-	-	0.4	%
		MCT1117B-1.8		-	-	7.2	mV
		MCT1117B-2.5		-	-	10	mV
		MCT1117B-3.3		-	-	13.2	mV
		MCT1117B-5.0		-	-	20	mV
Dropout Voltage	V_D		$\Delta V_{REF} = 1\%, I_{OUT} = 1.0\text{A}$	-	-	1.3	V
Adjustment Pin Current	I_{adj}			-	60	120	μA
Minimum Load Current	I_L		$1.5\text{V} \leq V_{IN} - V_{OUT} \leq 12\text{V}$ (ADJ only)	-	1.7	5	μA
Quiescent Current	I_q		$V_{IN} = V_{OUT} + 1.25\text{V}$ (ADJ except)	-	-	10	mA
Ripple Rejection	RR		$f = 120\text{Hz}, C_{OUT} = 22\mu\text{F}$ Tantalum, $V_{IN} - V_{OUT} = 3\text{V}, I_{OUT} = 1\text{A}$	60	75	-	dB
Temperature Stability				-	0.5	-	%
Long-Term Stability			$T_A = 125^\circ\text{C}, 1000\text{hrs}$	-	0.3	-	%
RMS Output Noise (% of V_{OUT})			$T_A = 25^\circ\text{C}, 10\text{Hz} \leq f \leq 10\text{kHz}$	-	0.003	-	%
Thermal Shutdown Hysteresis				-	25	-	$^\circ\text{C}$

Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:2.5Kpcs/Reel

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