IL1084T2 | CHIP LOW DROPOUT POSITIVE REGULATOR 5A

Features

- Output Current - 5A
- Maximum Input Voltage – 12V
- Adjustable Output Voltage or Fixed
  1.5V, 1.8V, 2.5V, 2.85V, 3.3V, 3.6V, 5V
- Current Limiting and Thermal Protection
- Standard 3-Pin Power Packages

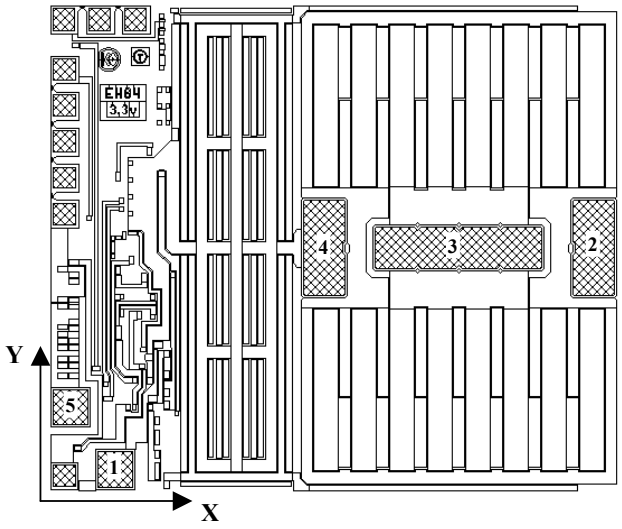
Applications

- Post Regulator for Switching DC/DC Converter
- High Efficiency Liner Regulators
- Battery Charger

Physical Characteristics:

- Chip size…….1.9 x 2.2 mm
- Wafer Diameter ……100 ± 0.5 mm
- Wafer thickness ….. 280 ± 20 μm
- Scribe width ……...100 μm
- Metallization bottom... Ti-Ni-Ag
  Ti-Ni – 0.5-0.7μm
  Ag – 0.6-0.1μm

- Passivation ……. PSG



Pad Location Coordinates

N	Pad names	Pad size	X(μm)	Y (μm)
1	NC	130x130	251	88
2	INPUT	150x340	1961	780
3	OUTPUT	600x150	1251	875
4	INPUT	150x340	991	780
5	GND	130x130	88	311

Absolute Maximum Ratings (Note 1)

Power Dissipation (Note 2) Internally Limited
Junction Temperature (Note 3) 150°C
Storage Temperature Range -65°C to 150°C
Storage Temperature Range -65°C to 150°C

Operating Ratings

Junction Temperature Range (Note 3) -10°C to 125°C

ELECTRICAL CHARACTERISTICS

Typicals and limits appearing in normal type apply for Tj= +25°C.
Limits appearing in **Boldface** type apply over the entire junction temperature range for operation.

Symbol	Parameter	Conditions	Min (Note 5)	Typ (Note 4)	Max (Note 5)	Units
V_{OUT}	Output Voltage (Note 6) IL1084-Adj BT2	I_{OUT}=10mA,V_{IN}=4.25V 0≤ I_{OUT}≤$I_{FULL\ LOAD}$,2.75V≤V_{IN}≤10V	1.237 1.232 **1.225**	1.250 1.250 **1.250**	1.263 1.268 **1.275**	V
	IL1084-1.5 BT2	I_{OUT}=10mA,V_{IN}=4.5V 0≤ I_{OUT}≤$I_{FULL\ LOAD}$,3.0V≤V_{IN}≤10V	1.485 1.478 **1.470**	1.500 1.500 **1.500**	1.515 1.522 **1.530**	
	IL1084-1.8 BT2	I_{OUT}=10mA,V_{IN}=4.8V 0≤ I_{OUT}≤$I_{FULL\ LOAD}$,3.3V≤V_{IN}≤10V	1.782 1.773 **1.764**	1.800 1.800 **1.800**	1.818 1.827 **1.836**	
	IL1084-2.5 BT2	I_{OUT}=10mA,V_{IN}=5.5V 0≤ I_{OUT}≤$I_{FULL\ LOAD}$,4.0V≤V_{IN}≤10V	2.475 2.463 **2.450**	2.500 2.500 **2.500**	2.525 2.537 **2.550**	
	IL1084-2.85 BT2	I_{OUT}=10mA,V_{IN}=5.85V 0≤ I_{OUT}≤$I_{FULL\ LOAD}$,4.35V≤V_{IN}≤10V	2.820 2.805 **2.790**	2.850 2.850 **2.850**	2.880 2.895 **2.910**	
	IL1084-3.3 BT2	I_{OUT}=10mA,V_{IN}=6.3V 0≤ I_{OUT}≤$I_{FULL\ LOAD}$,4.8V≤V_{IN}≤10V	3.270 3.250 **3.235**	3.300 3.300 **3.300**	3.330 3.350 **3.365**	
	IL1084-3.6 BT2	I_{OUT}=10mA,V_{IN}=6.6V 0≤ I_{OUT}≤$I_{FULL\ LOAD}$,5.1V≤V_{IN}≤10V	3.564 3.546 **3.528**	3.600 3.600 **3.600**	3.636 3.654 **3.672**	
	IL1084-5.0 BT2	I_{OUT}=10mA,V_{IN}=8.0V 0≤ I_{OUT}≤$I_{FULL\ LOAD}$,6.5V≤V_{IN}≤10V	4.950 4.925 **4.900**	5.000 5.000 **5.000**	5.050 5.075 **5.100**	

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ELECTRICAL CHARACTERISTICS

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Limits appearing in **Boldface** type apply over the entire junction temperature range for operation.

ΔV_{OUT}	Line Regulation (Note 7) IL1084-Adj BT2	I_{OUT}=10mA, 2.75V≤V_{IN}≤10V	- -	- -	0.3 **0.4**	%
	IL1084-1.5 BT2	I_{OUT}=10mA, 3.0V≤V_{IN}≤10V	- -	- -	6 **10**	mV
	IL1084-1.8 BT2	I_{OUT}=10mA, 3.3V≤V_{IN}≤10V	- -	- -	6 **10**	
	IL1084-2.5 BT2	I_{OUT}=10mA, 4.0V≤V_{IN}≤10V	- -	- -	6 **10**	
	IL1084-2.85 BT2	I_{OUT}=10mA, 4.35V≤V_{IN}≤10V	- -	- -	6 **10**	
	IL1084-3.3 BT2	I_{OUT}=10mA, 4.8V≤V_{IN}≤10V	- -	- -	6 **10**	
	IL1084-3.6 BT2	I_{OUT}=10mA, 5.1V≤V_{IN}≤10V	- -	- -	6 **10**	
	IL1084-5.0 BT2	I_{OUT}=10mA, 6.5V≤V_{IN}≤10V	- -	- -	6 **10**	
ΔV_{OUT}	Load Regulation (Note 7) IL1084-Adj BT2	V_{IN}=4.25V, 0≤ I_{OUT}≤$I_{FULL\ LOAD}$	- -	- -	0.3 **0.4**	%
	IL1084-1.5 BT2 IL1084-1.8 BT2 IL1084-2.5 BT2 IL1084-2.85 BT2	V_{IN}=5.0V, 0≤ I_{OUT}≤$I_{FULL\ LOAD}$	- -	- -	12 **20**	mV
	IL1084-3.3 BT2	V_{IN}=5.0V, 0≤ I_{OUT}≤$I_{FULL\ LOAD}$	- -	- -	15 **20**	
	IL1084-3.6 BT2	V_{IN}=5.3V, 0≤ I_{OUT}≤$I_{FULL\ LOAD}$	- -	- -	15 **25**	
	IL1084-5.0 BT2	V_{IN}=8.0V, 0≤ I_{OUT}≤$I_{FULL\ LOAD}$	- -	- -	20 **35**	
ΔV	Dropout Voltage (Note 8)	ΔV_{REF}=1%, I_{OUT}=5A	-	-	1.5	V
$I_{O(MIN)}$	Minimum Load Current	V_{IN}=10V	-	-	10	mA
I_{LIMIT}	Current Limit	V_{IN}=6.25V	5.5	-	-	A
I_{ADJ}	Adjust Pin Current	V_{IN}=2.75÷10V,I_{OUT}=10mA	-	-	120	µA
ΔI_{ADJ}	Adjust Pin Current Change	I_{OUT}=10mA÷5A, V_{IN}=2.75÷10V	-	-	5	µA
RR	Ripple Rejection	f_{RIPPLE} = 120Hz, C_{OUT}=25µF Tantalum, Iout=5A;V_{IN}=4.25V	60	-	-	dB
S	Temperature Stability		-	**0.5**	-	%

NOTES 1: Absolute Maximum Ratings indicate limits beyond which damage to the device may occur. Operating Rating indicate conditions for which the device is intended to be functional, but specific performance is not guaranteed. For guaranteed specifications and the test conditions, see the Electrical Characteristics.

NOTES 2: Power Dissipation is kept in a safe range by current limiting circuitry. Refer to Overload Recovery in Application Notes.

NOTES 3: The maximum power dissipation is a function of $Tj_{(MAX)}$, Θ_{jA} and T_A . The maximum allowable power dissipation at any ambient temperature is $P_D=(Tj_{(MAX)} - T_A)\Theta_{jA}$.

NOTES 4: Typical Values represent the most likely parametric norm

NOTES 5: All limits are guaranteed by testing or statistical analysis

NOTES 6: $I_{FULL\ LOAD}$ is defind in the current limit curves . The $I_{FULL\ LOAD}$ curve defines the current limit as a function of input-to-output voltage .

NOTES 7: Load and Line regulation are measured at constant junction temperature , and are guaranteed up to the maximum power dissipation of 30W.Power dissipation is determined by the input/output differential and the output current. Guaranteed maximum power dissipation will not be available over the full input/output range.

NOTES 8: Dropout voltage is specified over the full output current range of the device.