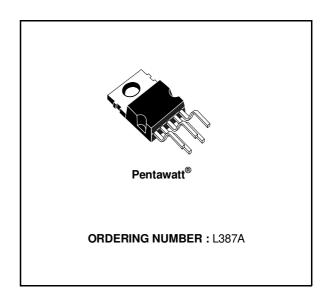


VERY LOW DROP 5V REGULATOR WITH RESET

- PRECISE OUTPUT VOLTAGE (5 V ± 4 %)
- VERY LOW DROPOUT VOLTAGE
- OUTPUT CURRENT IN EXCESS OF 500mA
- POWER-ON, POWER-OFF INFORMATION (RESET FUNCTION)
- HIGH NOISE IMMUNITY ON RESET DELAY CAPACITOR



The L387A is a very low drop voltage regulator in a Pentawatt[®] package specially designed to provide stabilized 5V supplies in consumer and industrial applications. Thanks to its very low input/output voltage drop this device is very useful in battery powered equipment, reducing consumption and prolonging battery life. A reset output makes the L387A particularly suitable for microprocessor systems. This output provides a reset signal when power is applied (after an external programmable delay) and goes low when

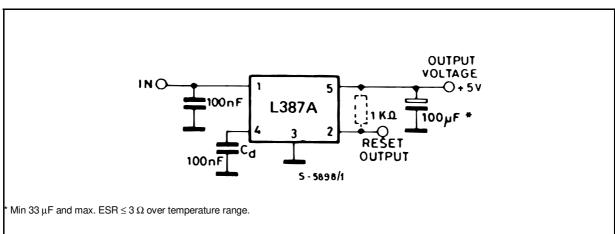


power is removed, inhibiting the microprocessor. An hysteresis on reset delay capacitor raises the immunity to the ground noise.

ABSOLUTE MAXIMUM RATINGS

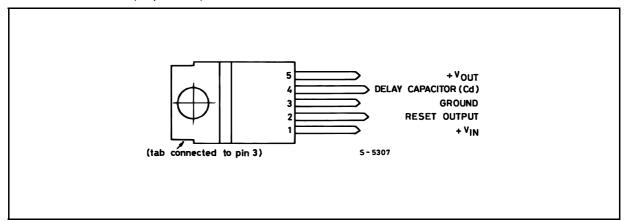
Symbol	Parameter	Value	Unit
Vi	D.C. Input Voltage	35	V
T _j , T _{stg}	Junction and Storage Temperature Range	-55 to 150	°C

APPLICATION CIRCUIT

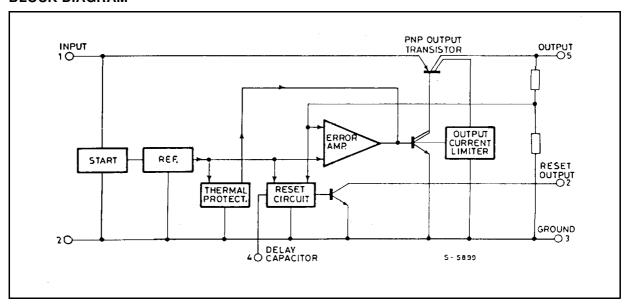


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PIN CONNECTION (Top views)



BLOCK DIAGRAM



THERMAL DATA

R _{th j-case} Thermal Resistance Junction-case	Max	4	°C/W
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ELECTRICAL CHARACTERISTICS (refer to the test circuit, V_i = 14.4 V, T_j = 25 °C, C_o = 100 μF ; unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit	
Vo			4.80	5.00	5.20	V	
		– 40 ≤ T _j ≤ 125 °C	4.75	5.00	5.25	V	
VI	Operating Input Voltage	(*), Over Full T Range (- 40 to 125 °C) (see note **)			26	V	
ΔV_{o}	Line Regulation	$V_i = 6 \text{ V to } 26 \text{ V}$ $I_o = 5 \text{ mA}$		5	50	mV	
ΔV_{o}	Load Regulation	$I_0 = 5$ mA to 500 mA		15	60	mV	
$V_{I} - V_{o}$	Dropout Voltage	$V_{O} = V_{O NOM} - 100 \text{ mV}$ $I_{o} = 350 \text{ mA}$ $I_{o} = 500 \text{ mA}$		0.40 0.60	0.65 0.8	V V	
Iq	Quiescent Current	$\begin{array}{c} I_{o} = 0 \text{ mA} \\ I_{o} = 150 \text{ mA} \\ I_{o} = 350 \text{ mA} \\ I_{o} = 500 \text{ mA} \\ \end{array}$ $V_{i} = 6.2 \text{ V} \hspace{1cm} I_{o} = 500 \text{ mA} \\ \end{array}$		5 20 60 100	15 35 100 160	mA mA mA mA	
$\frac{\Delta V_o}{\Delta T}$	Temperature Output Voltage Drift			- 0.5		mV/°C	
SVR	Supply Voltage Rejection	$\begin{array}{ll} I_{o} = 350 \text{ mA} & f = 120 \text{ Hz} \\ C_{o} = 100 \mu\text{F} & V_{i} = 12 \text{ V} \pm 5 \text{ V}_{pp} \end{array}$			60		
I _{SC}	Output Short Circuit Current			1.2	1.6	Α	
V _R	Reset Output Voltage	$\begin{array}{lll} I_R = 3 \text{ mA} & 1 < V_0 < 4.70 \text{ V} \\ I_R = 16 \text{ mA} & 1.5 < V_0 < 4.75 \text{ V} \\ \text{Over Full T} \left(-40 \ ^{\circ}\text{C} \le T_j \le 125 \ ^{\circ}\text{C}\right) \end{array}$			0.5 0.8	>>	
I _R	Reset Output Leakage Current	V_o in Regulation $V_R = 5V$ Over Full T Range			50	μΑ	
t _d	Delay Time for Reset Output	Cd = 100 nF Over Full T Range		25		ms	
V _{RT (off)}		V₀ @ Reset out H to L Transition, Over Full T Range	4.75	V _o - 0.15		V	
I _{C4}	Charging Current (current generator)	V ₄ = 3 V	10	20	30	μΑ	
V _{RT (on)}	Power on VoThreshold	V_0 @ Reset out L to H Transition , Over Full T Range		V _{RT (off)} + 0.05 V	V _o - 0.04 V	V	
V_4	Comparator Threshold	V ₄ @ Reset out H to L Transition	3.2		3.9	V	
	(pin 4)	V ₄ @ Reset out L to H Transition			4.3	V	
V _H	Hysteresis Voltage	Over Full T Range		450		mV	

 ^(*) For a DC voltage 26 < Vi < 37 V the device is not operating.
 (**) Design limits are guaranteed (but not 100 % production tested) over the indicated temperature and supply voltage ranges. These limits are not used to calculate outgoing quality levels.

Figure 1 : Dropout Voltage vs. Output Current.

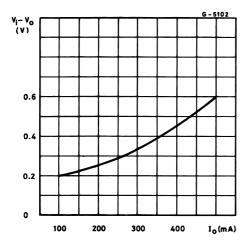


Figure 2 : Quiescent Current vs. Output Current.

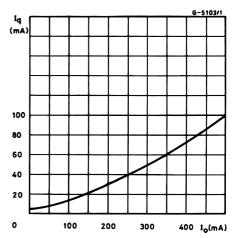
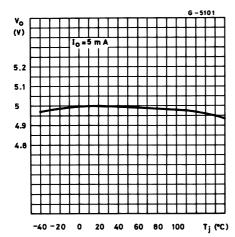


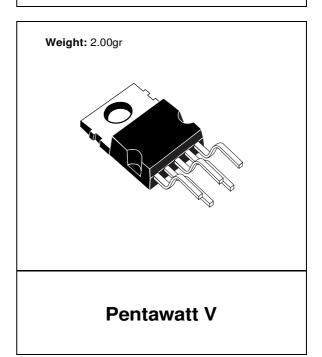
Figure 3 : Output Voltage vs. Temperature.

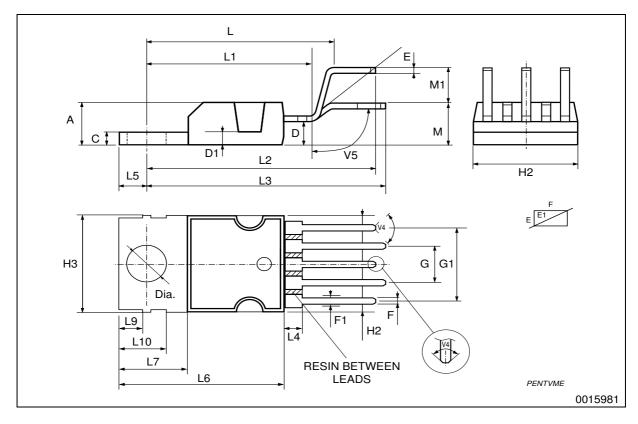


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DIM.	mm			inch			
DIM.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
Α			4.8			0.189	
С			1.37			0.054	
D	2.4		2.8	0.094		0.110	
D1	1.2		1.35	0.047		0.053	
Е	0.35		0.55	0.014		0.022	
E1	0.76		1.19	0.030		0.047	
F	8.0		1.05	0.031		0.041	
F1	1.0		1.4	0.039		0.055	
G	3.2	3.4	3.6	0.126	0.134	0.142	
G1	6.6	6.8	7.0	0.260	0.268	0.276	
H2			10.4			0.409	
H3	10.05		10.4	0.396		0.409	
L	17.55	17.85	18.15	0.691	0.703	0.715	
L1	15.55	15.75	15.95	0.612	0.620	0.628	
L2	21.2	21.4	21.6	0.831	0.843	0.850	
L3	22.3	22.5	22.7	0.878	0.886	0.894	
L4			1.29			0.051	
L5	2.6		3.0	0.102		0.118	
L6	15.1		15.8	0.594		0.622	
L7	6.0		6.6	0.236		0.260	
L9	2.1		2.7	0.008		0.106	
L10	4.3		4.8	0.17		0.189	
M	4.23	4.5	4.75	0.167	0.178	0.187	
M1	3.75	4.0	4.25	0.148	0.157	0.167	
V4	40° (typ.)						
V5	90° (typ.)						
Dia	3.65		3.85	0.144		0.152	

OUTLINE AND MECHANICAL DATA





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