

uV24-12-164

24 VDC Input / 300 Watts / 3/4 Brick



ABSOLUTE MAXIMUM RATINGS Exceeding absolute maximum ratings may cause permanent damage or reduce reliability

Parameter	Option	Minimum	Maximum	Units	Conditions
Input Voltage (+In to -In)		-0.3	36	Vdc	Continuous
Transient Input Voltage (+In to -In)		-0.3	50	Vdc	100ms max.
Parallel Pin Voltage (Parallel-On/Off to -In)		-0.3	6.0	Vdc	
Input-to-Output Voltage			1500	Vdc	
Input-to-Case Voltage			1500	Vdc	
Output-to-Case Voltage			500	Vdc	
Storage Temperature	Standard	-40	110	°C	
	T	-55	110	°C	
	E	-55	125	°C	
Operating Temperature	Standard	-40	100	°C	Baseplate
	T	-55	100	°C	Baseplate
	E	-55	125	°C	Baseplate
Soldering Temperature			260	°C	< 5 sec

ELECTRICAL SPECIFICATIONS Electrical specifications apply for Vin=28VDC, Vout=12VDC, Full Load, Tc=25 °C unless specified otherwise

Input	Minimum	Typical	Maximum	Units	Conditions
Input Voltage Range	18	24 / 28	36	Vdc	
Maximum Input Current		19.4		A	Vin = 18V, Tc = 25°C
			19.8	A	Vin = 18V, Tc = 100°C
Input Ripple Rejection		60		dB	f = 120Hz
Output	Minimum	Typical	Maximum	Units	Conditions
Voltage Set Point	11.88	12.01	12.12	Vdc	
Load Regulation		0.05	0.2	%	0 to Full Load
Line Regulation		0.05	0.2	%	Vin min to Vin max
Voltage Drift with Temperature			0.02	%/°C	Tc min to Tc max
Ripple (PARD)		120	240	mV p-p	Vin = 28V, Tc = 25°C
			360	mV p-p	18V ≤ Vin ≤ 36V, -40°C ≤ Tc ≤ +100°C
Rated Current	0		25	A	
Overcurrent Inception Point	105	115	130	% Rated	Vout = 95% Vout nominal
Short Circuit Current			170	% Rated	18V ≤ Vin ≤ 36V, Rshort = 15 mOhm
Transient Response Deviation		480		mV	20-80% Rated Current, 0.5A/μs
Transient Response Settling Time		200		μs	20-80% Rated Current, 0.5A/μs
Efficiency		88.0		%	Vin = 28V, Iout = 75% Rated
Isolation	Minimum	Typical	Maximum	Units	Conditions
Input-to-Output Isolation	1500			Vdc	Consult factory for procedure
Input-to-Case Isolation	1500			Vdc	
Output-to-Case Isolation	500			Vdc	
Input-to-Output Capacitance		2500		pF	
Input-to-Output Resistance	10			M Ohm	500V

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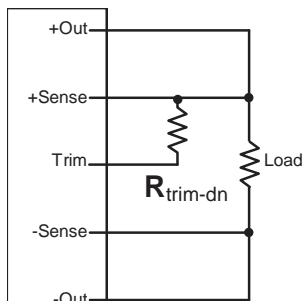
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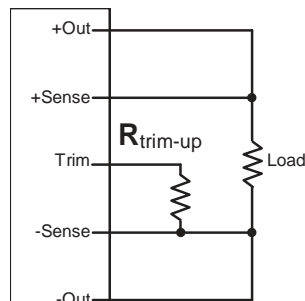
ELECTRICAL SPECIFICATIONS Continued

Control	Option	Minimum	Typical	Maximum	Units	Conditions
Over Temperature Shutdown Temp.	Standard and T		105		°C	
	E		130			
Over Temperature Restart Temp.	Standard and T		85		°C	
	E		105			
Start-up Voltage		16.5	17.0	17.5	V	
Input Under Voltage Lock Out		15.0	15.5	16.0	V	
Turn-on Time			5	10	ms	18V ≤ Vin ≤ 36V, Tc = 25°C
				12	ms	18V ≤ Vin ≤ 36V, -40°C < Tc < +100°C
Logic On/Off Enable Signal			Open		V	Positive Logic, open collector enables. Do not pull up.
Logic On/Off Disable Signal				0.6	V	I On/Off = 1mA.
Logic On/Off Turn-on Time			5	10	ms	
Trim Range		9.6		13.2	V	See Trim Formula and Diagrams
OVP Trip Point		14.7	14.9	15.8	V	Non-shutdown, Auto Recovery, Iout = 50% Rated
Remote Sense Compensation				0.5	V	
Current Sharing (Parallel Operation)			5		%	Using Parallel Pin Connection or PDM
Switching Frequency			370		kHz	Standard Model
			300		kHz	-S Sync Option Model
Synchronization Frequency Range		330		440	kHz	Using Optional Sync Pin and External Sync Signal
Thermal / Mechanical Parameters		Minimum	Typical	Maximum	Units	Conditions
Thermal Resistance, Case to Ambient			4.2		°C/W	Free Air, No Heatsink, Tc = 100°C
Size, HxWxL			0.5 x 2.4 x 3.6 (12.7 x 61.0 x 91.4)		in (mm)	3/4 Brick, See Outline Drawing
Weight			5.7 (161)		oz. (gm)	

TRIM



Trim Down



Trim Up

$$R_{\text{trim-up}} = \frac{29.01\text{K}\Omega}{\Delta V}$$

$$R_{\text{trim-down}} = \frac{203.0-19.34\Delta V}{\Delta V} \text{ K}\Omega$$

$\Delta V = | \text{Desired Output Voltage Change (Volts)} |$

$R_{\text{trim-up}} = \text{External Resistor Value to Increase } V_{\text{out}}$

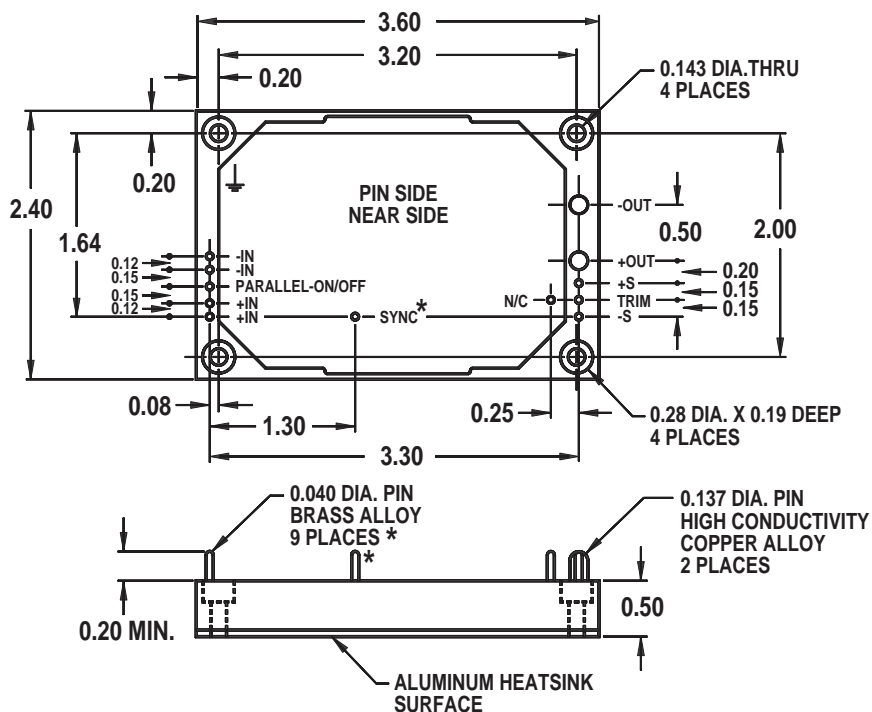
$R_{\text{trim-down}} = \text{External Resistor Value to Decrease } V_{\text{out}}$



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OUTLINE DRAWING Dimensions in Inches



NOTE:
Pin finish is gold over nickel, JESD97
2nd level interconnect category e4.
* 10 places when ordering sync option.
Location of optional sync pin shown.

NOTES