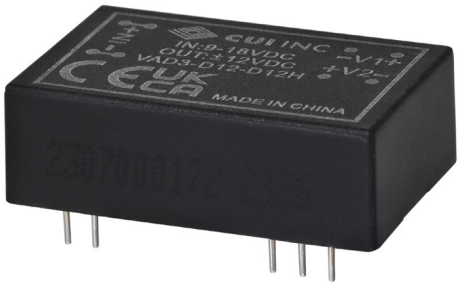
CUI INC
a bel group

SERIES: VAD3 | DESCRIPTION: DC-DC CONVERTER

FEATURES

- 3W isolated output
- efficiency to 80%
- regulated outputs
- Pi input filter
- low ripple and noise
- 24-pin DIP package
- continuous short circuit protection



RoHS CE UK CA

MODEL

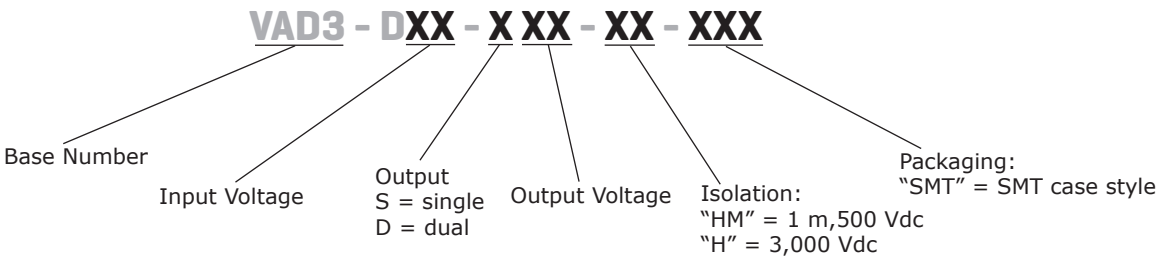
MODEL	input voltage		output voltage	output current	output power	ripple & noise[1]	efficiency
	typ (Vdc)	range (Vdc)	(Vdc)	max (mA)	max (W)	max (mVp-p)	typ (%)
VAD3-D5-S3R3	4.5~6	5	3.3	600	3	100	64
VAD3-D5-S5	4.5~6	5	5	600	3	100	70
VAD3-D5-S12	4.5~6	5	12	250	3	100	75
VAD3-D5-S15	4.5~6	5	15	200	3	100	75
VAD3-D5-D5	4.5~6	5	±5	±300	3	100	70
VAD3-D5-D12	4.5~6	5	±12	±125	3	100	75
VAD3-D5-D15	4.5~6	5	±15	±100	3	100	75
VAD3-D12-S3R3	9~18	12	3.3	600	3	100	70
VAD3-D12-S5	9~18	12	5	600	3	100	73
VAD3-D12-S12	9~18	12	12	250	3	100	78
VAD3-D12-S15	9~18	12	15	200	3	100	78
VAD3-D12-D5	9~18	12	±5	±300	3	100	73
VAD3-D12-D12	9~18	12	±12	±125	3	100	78
VAD3-D12-D15	9~18	12	±15	±100	3	100	78
VAD3-D24-S3R3	18~36	24	3.3	600	3	100	73
VAD3-D24-S5	18~36	24	5	600	3	100	74
VAD3-D24-S12	18~36	24	12	250	3	100	80
VAD3-D24-S15	18~36	24	15	200	3	100	80
VAD3-D24-D5	18~36	24	±5	±300	3	100	74
VAD3-D24-D12	18~36	24	±12	±125	3	100	80
VAD3-D24-D15	18~36	24	±15	±100	3	100	80
VAD3-D48-S3R3	36~72	48	3.3	600	3	100	71
VAD3-D48-S5	36~72	48	5	600	3	100	76
VAD3-D48-S12	36~72	48	12	250	3	100	80
VAD3-D48-S15	36~72	48	15	200	3	100	80

MODEL

	input voltage		output voltage	output current	output power	ripple & noise[1]	efficiency
	typ (Vdc)	range (Vdc)	(Vdc)	max (mA)	max (W)	max (mVp-p)	typ (%)
VAD3-D48-D5	36~72	48	±5	±300	3	100	76
VAD3-D48-D12	36~72	48	±12	±125	3	100	78
VAD3-D48-D15	36~72	48	±15	±100	3	100	78

Notes: 1. With 20MHz bandwidth.

PART NUMBER KEY



INPUT

parameter	conditions/description		min	typ	max	units
operating input voltage	5 Vdc input		4.5	5	6	Vdc
	12 Vdc input		9	12	18	Vdc
	24 Vdc input		18	24	36	Vdc
	48 Vdc input		36	48	75	Vdc
input current (no load/full load)	5 Vdc input	3.3 Vdc output			15/619	mA
		5 Vdc output			15/850	mA
		12, 15 Vdc output			15/800	mA
		±5 Vdc output			25/850	mA
		±12, ±15 Vdc output			25/800	mA
	12 Vdc input	3.3 Vdc output			7.5/236	mA
		5 Vdc output			7.5/340	mA
		12, 15 Vdc output			7.5/320	mA
		±5 Vdc output			12/340	mA
		±12, ±15 Vdc output			12/320	mA
	24 Vdc input	3.3 Vdc output			5/113	mA
		5 Vdc output			5/168	mA
		12, 15 Vdc output			5/156	mA
		±5 Vdc output			7.5/168	mA
		±12, ±15 Vdc output			7.5/156	mA
	48 Vdc input	5 Vdc output			2/82	mA
		12, 15 Vdc output			2/78	mA
		3.3 Vdc output			3/58	mA
		±5 Vdc output			3/82	mA
		±12, ±15 Vdc output			3/80	mA
input filter	Pi filter					

OUTPUT

parameter	conditions/description	min	typ	max	units
voltage accuracy				±2	%
voltage balance (dual)				±1	%
temperature coefficient				±0.05	%/°C
line regulation	low line to high line at full load single output dual output		 ±0.5 ±0.5		 % %
load regulation	single output (0% ~ 100% load) dual output (1/4 ~ 100% load)		±0.5 ±1		% %
switching frequency	at full load, nominal input	100			kHz

PROTECTIONS

parameter	conditions/description	min	typ	max	units
short circuit protection	continuous				

SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	standard models suffix "HM" models suffix "H" models (non-conductive black plastic only)	500 1,500 3,000			Vdc Vdc Vdc
isolation resistance		10^9			Ω

ENVIRONMENTAL

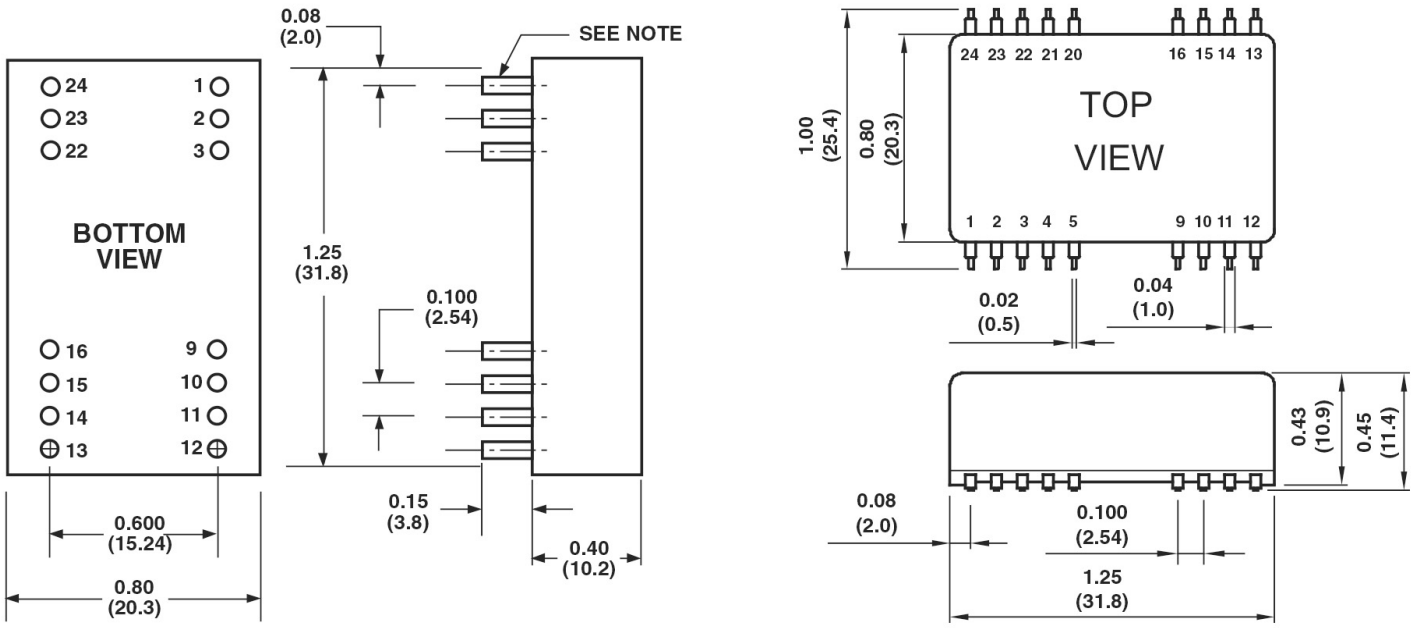
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curve	-25		71	°C
storage temperature		-40		125	°C
max. case temperature	plastic case copper case			95 100	°C °C
cooling	natural convection				

MECHANICAL

parameter	conditions/description		min	typ	max	units
dimensions	31.8 x 20.3 x 10.2 [1.25 x 0.8 x 0.4 inches]					mm
case material	standard models	non-conductive back plastic				
	suffix "M" models	black coated copper with non-conductive base				

MECHANICAL DRAWING

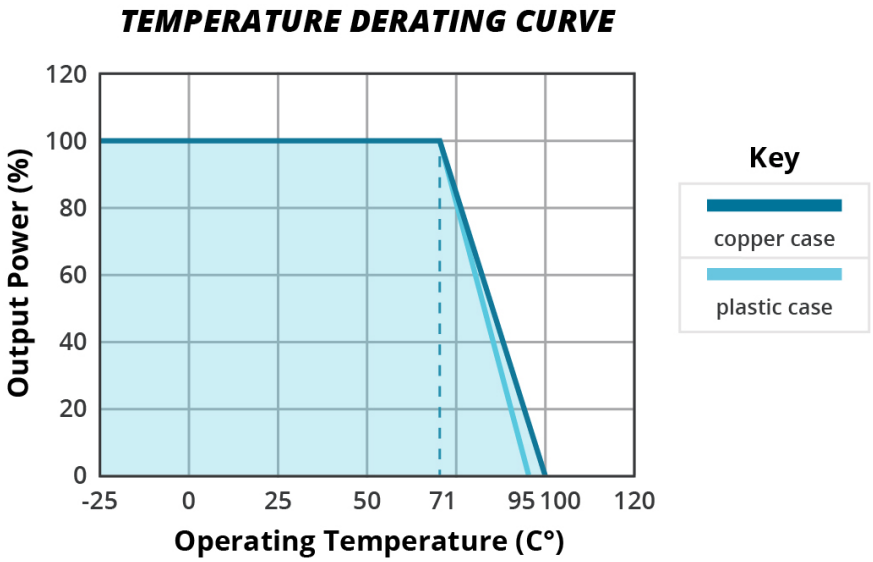
units: inch [mm]
pin size: 0.02 inch (0.5mm) DIA
tolerance: inches: x.xx = ±0.02, x.xxx = ±0.010
milimeters: x.x = ±0.5, x.xx = ±0.25



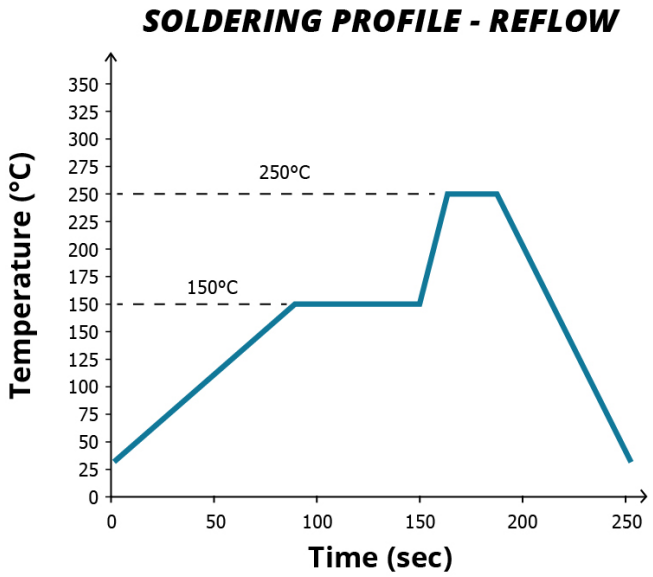
Pin Out									
PIN	500 Vdc				PIN	1,500 & 3,000 Vdc			
	Single outputs		Dual outputs			Single outputs		Dual outputs	
	DIP	SMD	DIP	SMD		DIP	SMD	DIP	SMD
1, 24	+Vin	+Vin	+Vin	+Vin	1, 24	NP	NC	NP	NC
2, 23	NC	NC	-Vout	-Vout	2, 3	-Vin	-Vin	-Vin	-Vin
3, 22	NC	NC	Common	Common	4,5	NP	NC	NP	NC
4	NP	NC	NP	NC	9	NC	NC	Common	Common
5	NP	NC	NP	NC	10,15	NC	NC	NC	NC
9	NP	NC	NP	NC	11	NC	NC	-Vout	-Vout
10, 15	-Vout	-Vout	Common	Common	12, 13	NP	NC	NP	NC
11, 14	+Vout	+Vout	+Vout	+Vout	14	+Vout	+Vout	+Vout	+Vout
12, 13	-Vin	-Vin	-Vin	-Vin	16	-Vout	-Vout	Common	Common
16	NP	NC	NP	NC	20, 21	NP	NC	NP	NC
20, 21	NP	NC	NP	NC	22, 23	+Vin	+Vin	+Vin	+Vin

Notes: 1. NP = no pin
2. NC = no connection with pin

DERATING CURVES



SOLDERABILITY



REVISION HISTORY

rev.	description	date
1.0	initial release	04/01/2009
1.01	new template applied, product image updated	08/22/2023

The revision history provided is for informational purposes only and is believed to be accurate.

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CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

CUI reserves the right to make changes to the product at any time without notice. Information provided by CUI is believed to be accurate and reliable. However, no responsibility is assumed by CUI for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

CUI products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.