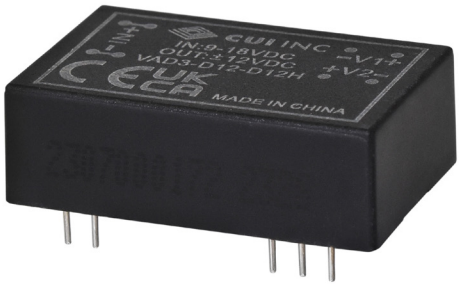
CUI INC
a bel group

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



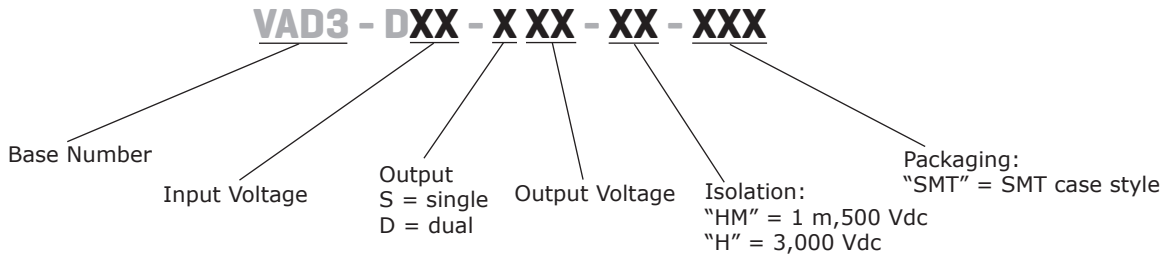
MODEL	input voltage		output voltage	output current	output power	ripple & noise[1]	efficiency
	typ (Vdc)	range (Vdc)	(Vdc)	max (mA)	max (W)	max (mVp-p)	typ (%)
VAD3-D5-S3R3	4.5~6	5	3.3	600	3	100	64
VAD3-D5-S5	4.5~6	5	5	600	3	100	70
VAD3-D5-S12	4.5~6	5	12	250	3	100	75
VAD3-D5-S15	4.5~6	5	15	200	3	100	75
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

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

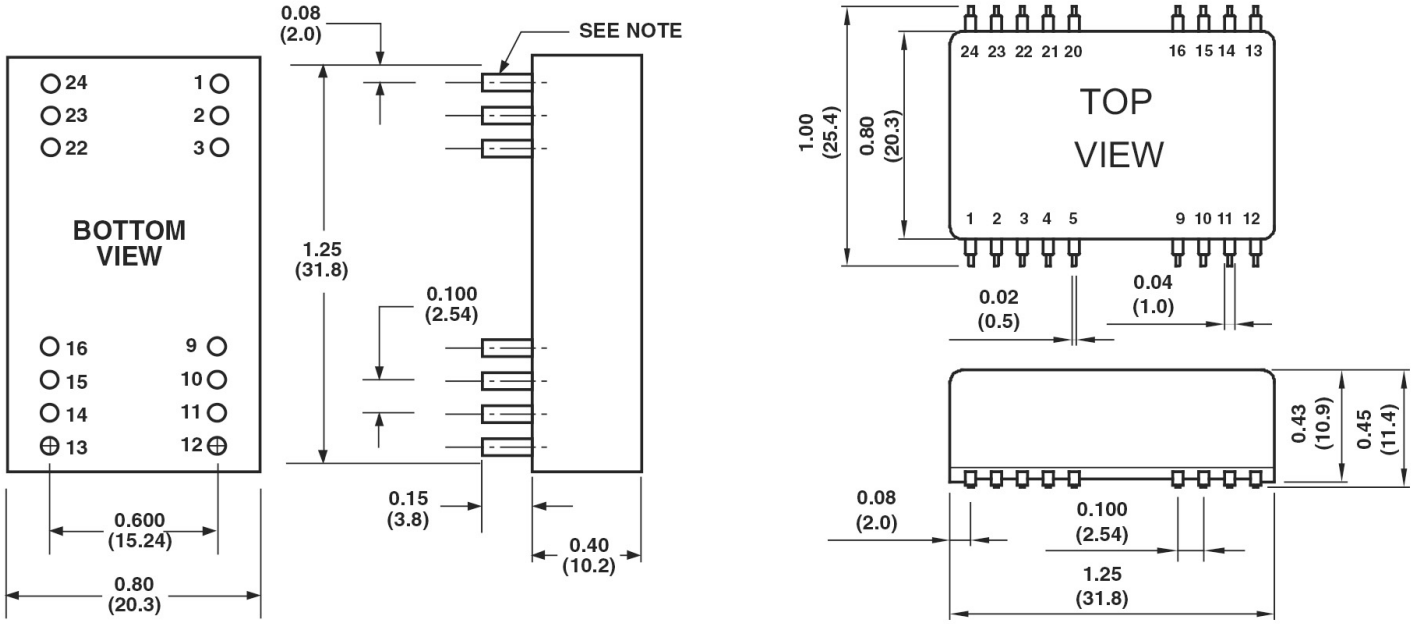
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curve	-25		71	°C
storage temperature		-40		125	°C
max. case temperature	plastic case copper case			95 100	°C °C
cooling	natural convection				

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

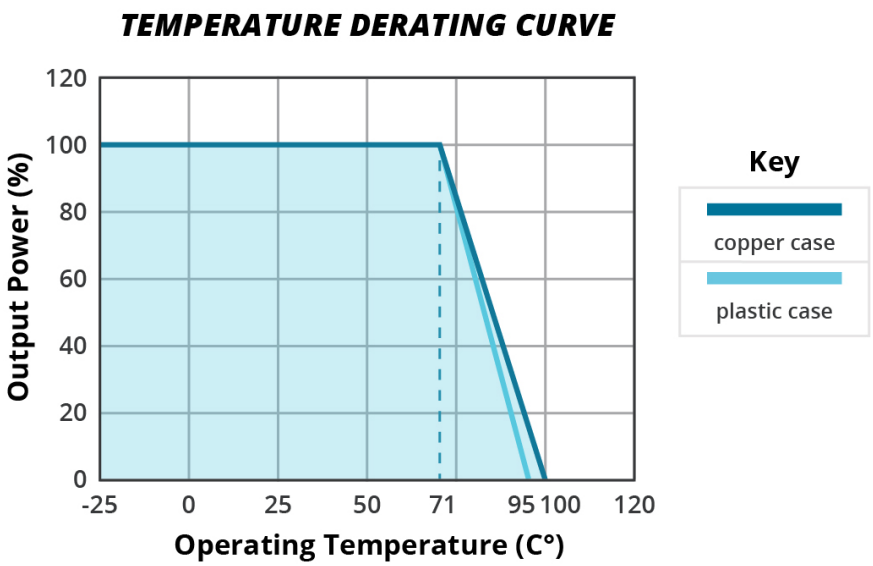
units: inch [mm]
pin size: 0.02 inch (0.5mm) DIA
tolerance: inches: x.xx = ±0.02, x.xxx = ±0.010
milimeters: x.x = ±0.5, x.xx = ±0.25



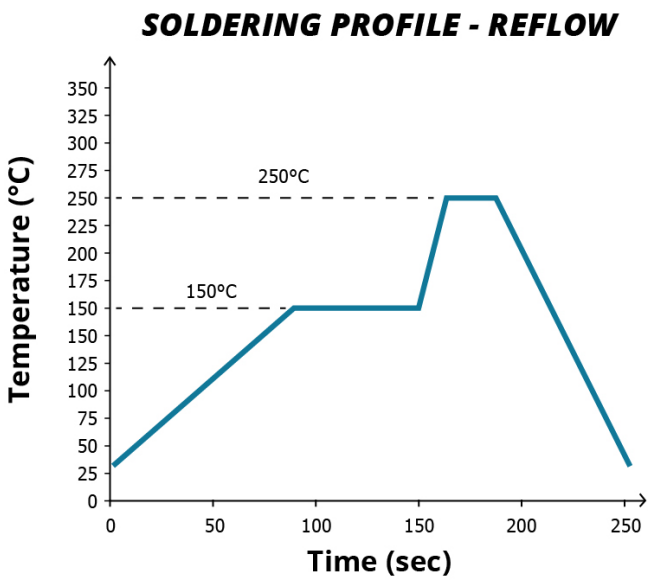
Pin Out									
PIN	500 Vdc				PIN	1,500 & 3,000 Vdc			
	Single outputs		Dual outputs			Single outputs		Dual outputs	
	DIP	SMD	DIP	SMD		DIP	SMD	DIP	SMD
1, 24	+Vin	+Vin	+Vin	+Vin	1, 24	NP	NC	NP	NC
2, 23	NC	NC	-Vout	-Vout	2, 3	-Vin	-Vin	-Vin	-Vin
3, 22	NC	NC	Common	Common	4,5	NP	NC	NP	NC
4	NP	NC	NP	NC	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.

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