CUI INC®

SERIES: VBED15 | **DESCRIPTION:** DC-DC CONVERTER

FEATURES

- up to 15 W isolated output
- 2:1 input range
- single and dual regulated outputs
- 500 V isolation
- short circuit protection
- remote on/off
- efficiency up to 83%

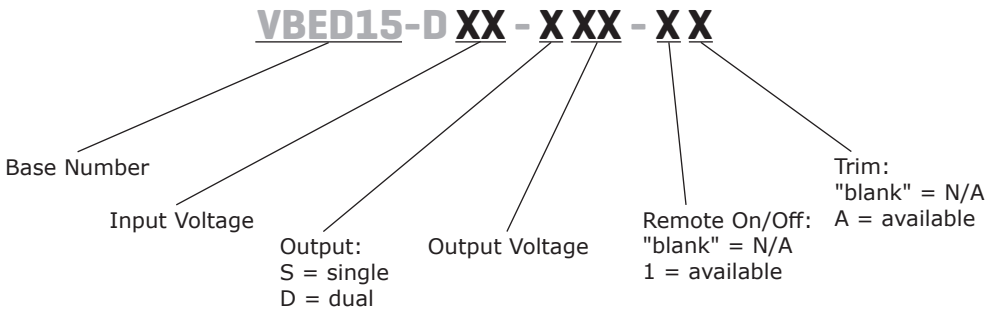


RoHS c UL us

MODEL	input voltage range (Vdc)	output voltage (Vdc)	output current max (mA)	output power max (W)	ripple and noise[1] max (mVp-p)	efficiency typ (%)
VBED15-D12-S3R3	9~18	3.3	3,000	10	75	78
VBED15-D12-S5	9~18	5	3,000	15	75	82
VBED15-D12-S12	9~18	12	1,250	15	75	82
VBED15-D12-S15	9~18	15	1,000	15	75	83
VBED15-D12-D5	9~18	±5	±1,500	15	75	83
VBED15-D12-D12	9~18	±12	±625	15	75	80
VBED15-D12-D15	9~18	±15	±500	15	75	76
VBED15-D24-S3R3*	18~36	3.3	3,000	10	75	80
VBED15-D24-S5*	18~36	5	3,000	15	75	82
VBED15-D24-S12*	18~36	12	1,250	15	75	82
VBED15-D24-S15*	18~36	15	1,000	15	75	83
VBED15-D24-D5	18~36	±5	±1,500	15	75	83
VBED15-D24-D12	18~36	±12	±625	15	75	81
VBED15-D24-D15	18~36	±15	±500	15	75	76
VBED15-D48-S3R3	36~72	3.3	3,000	10	75	80
VBED15-D48-S5	36~72	5	3,000	15	75	83
VBED15-D48-S12	36~72	12	1,250	15	75	83
VBED15-D48-S15	36~72	15	1,000	15	75	83
VBED15-D48-D5	36~72	±5	±1,500	15	75	83
VBED15-D48-D12	36~72	±12	±625	15	75	82
VBED15-D48-D15	36~72	±15	±500	15	75	76

Notes: 1. ripple & noise are measured at 20 MHz BW with 0.1 µF capacitor on the output
2. * Discontinued model.

PART NUMBER KEY



INPUT

parameter	conditions/description	min	typ	max	units
operating input voltage		9 18 36	12 24 48	18 36 72	Vdc Vdc Vdc
remote on/off[1]					
filter	PI type				

Notes: 1. logic compatibility, COMS or Open Collector TTL
Module ON, >5.5 Vdc or open circuit
Module OFF, <1.8 Vdc

OUTPUT

parameter	conditions/description	min	typ	max	units
line regulation	measured from high line to low line			±0.2	%
load regulation	measured from 100% load to 25% load			±0.1	%
voltage accuracy				±1.0	%
voltage balance	dual output models			±1.0	%
transient response	single output models 25% step load change dual output models full load to ½ load, ±1% error band			500 500	µs µs
adjustability			±10		%
switching frequency			300		kHz
temperature coefficient				±0.02	%/°C

PROTECTIONS

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

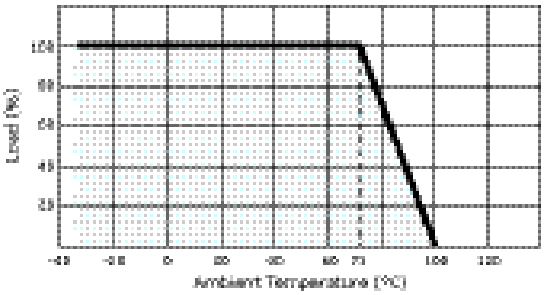
SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage		500			Vdc
insulation resistance		1,000			MΩ
safety approvals	UL 60950-1				
EMI/EMC	EN 55022 class B				
RoHS compliant	yes				

ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature		-25		71	°C
case temperature				100	°C
storage temperature		-40		100	°C

DERATING CURVES

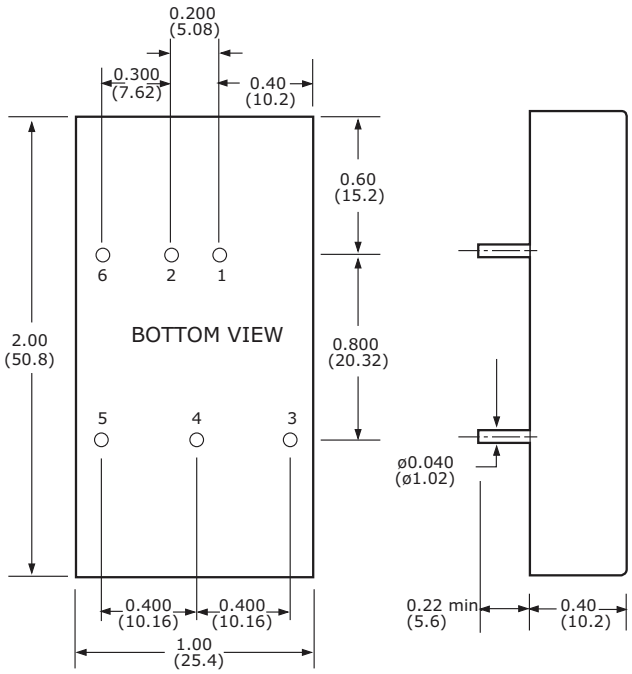


MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	2 x 1 x 0.4 (50.8 x 25.4 x 10.2 mm)				inch
case material	black coated copper with non-conductive base				
weight				32	g

MECHANICAL DRAWING

units: inches (mm)
tolerance: x.xx = ±0.04, x.xxx = ±0.010

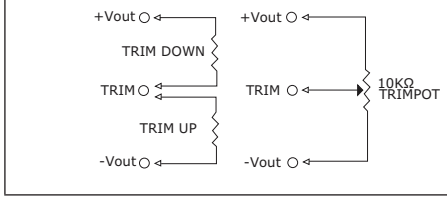


PIN CONNECTIONS	
PIN	FUNCTION
1	+Vin
2	-Vin
3	+Vo
4	common/NP/Trim (optional)
5	-Vo
6	NP/remote (optional)

NP = No Pin on single output

EXTERNAL OUTPUT TRIMMING

Output may optionally be externally trimmed (±10%) with a fixed resistor or an external trimpot as shown.



REVISION HISTORY

rev.	description	date
1.0	initial release	10/10/2008
1.01	layout update	05/29/2009
1.02	layout update, added part number key, updated load regulation	09/28/2009
1.03	new template applied	07/25/2012
1.04	discontinued models VBED15-D24-S3, VBED15-D24-S5, VBED15-D24-S12 & VBED15-D24-S15	04/05/2024

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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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.