V-INFINITY
a division of CUI INC

date 05/2009

PART NUMBER: VBD20

DESCRIPTION: dc-dc converter

features
- **20W isolated output**
- **efficiency to 88%**
- **2:1 input range**
- **regulated outputs**
- **continuous short circuit protection**
- **Pi input filter**

RoHS

MODEL

MODEL	input voltage (V dc)	output voltage (V dc)	output current min. (mA)	output current max. (mA)	input current no load (mA)	input current full load (mA)	efficiency (%)
VBD20-D24-S1R8	18 ~ 36	1.8	0	6000	30	523	86
VBD20-D24-S2R5	18 ~ 36	2.5	0	6000	30	718	87
VBD20-D24-S3R3	18 ~ 36	3.3	0	5000	40	722	89
VBD20-D24-S5	18 ~ 36	5	0	4000	60	926	90
VBD20-D24-S12	18 ~ 36	12	0	1670	20	938	89
VBD20-D24-S15	18 ~ 36	15	0	1330	20	934	87
VBD20-D24-D12	18 ~ 36	±12	42	835	20	938	89
VBD20-D24-D15	18 ~ 36	±15	33	670	20	941	89
VBD20-D48-S1R8	36 ~ 75	1.8	0	6000	30	262	86
VBD20-D48-S2R5	36 ~ 75	2.5	0	6000	30	359	87
VBD20-D48-S3R3	36 ~ 75	3.3	0	5000	30	386	89
VBD20-D48-S5	36 ~ 75	5	0	4000	40	463	90
VBD20-D48-S12	36 ~ 75	12	0	1670	15	469	89
VBD20-D48-S15	36 ~ 75	15	0	1330	15	467	89
VBD20-D48-D12	36 ~ 75	±12	42	835	10	469	89
VBD20-D48-D15	36 ~ 75	±15	33	670	10	471	89

NOTE:
add suffix "-1" to the model number for remote on/off option

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INPUT

parameter	conditions/description	min	nom	max	units
input voltage range	24 V	18		36	V
	48 V	36		72	V
under voltage lockout	24 V power up		17		V
	24 V power down		16		V
	48 V power up		34		V
	48 V power down		33		V
input filter	pi type				
positive logic remote on/off control:					
logic compatibility	CMOS or open TTL				
module ON	> 5.5 V dc or open circuit				
module OFF	< 1.2 V dc				

OUTPUT

parameter	conditions/description	min	nom	max	units
voltage accuracy			±1.5		%
transient response	single 25% step load change	500			µ sec.
temperature coefficient				±0.03	%/°C
ripple & noise	20 MHz BW			75	mVp-p
short circuit protection	continuous				
over voltage protection	zener or tvs clamp				
external trim adj. range			±10		%
line regulation	measured from high line to low line				
	single output		±0.2		%
	dual output		±0.5		%
load regulation	single: measured from full load to 10%		±1		%
	dual: measured from full load to 1/4 load		±1		%

GENERAL SPECIFICATIONS

parameter	conditions/description	min	nom	max	units
efficiency	see table				
isolation voltage		1500			V dc
isolation resistance			10^7		Ω
switching frequency			350		kHz
operating temperature range		-40		+85	°C
derating (above 71°C)	linearly to zero power at +100°C				
case temperature				100	°C
cooling	free-air convection				
storage temperature range		-55		105	°C
EMI/RFI	conductive EMI meet EN55022 class B				
dimensions	2 x 1 x 0.4 inches (50.8 x 25.4 x 10.2 mm)				
case material	black coated copper with non-conductive base				

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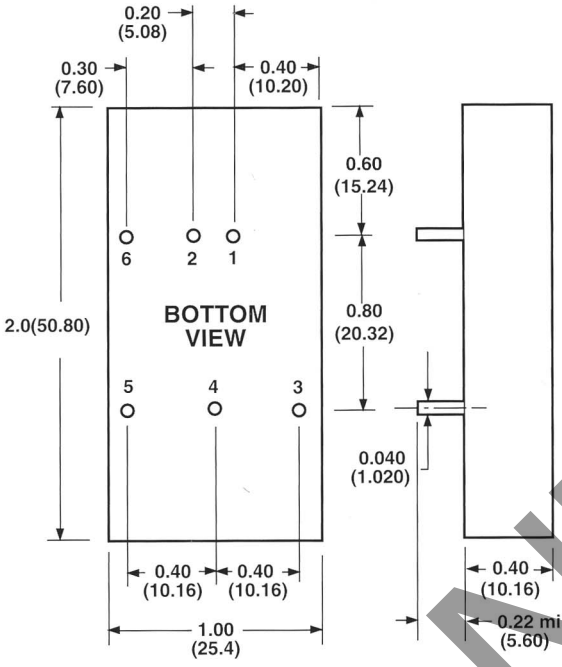
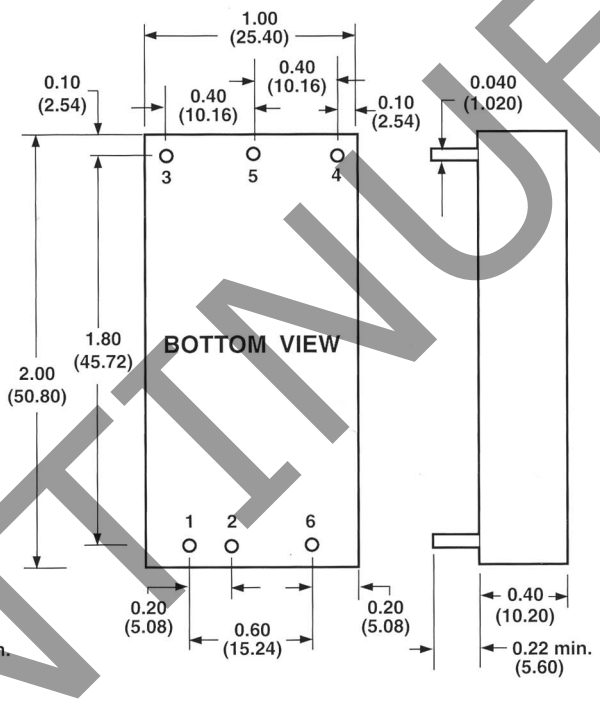
PART NUMBER: VBD20 **DESCRIPTION:** dc-dc converter

DIMENSIONS (mm)

STANDARD PIN CONFIGURATION



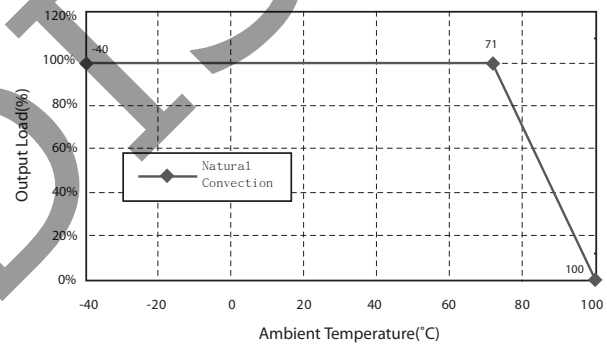
ALTERNATE PIN CONFIGURATION (suffix "-S")



tolerance: **inches** .xx = ±0.04, .xxx = ±0.010
mm .xx = ±1.0, .xxx = ±0.25

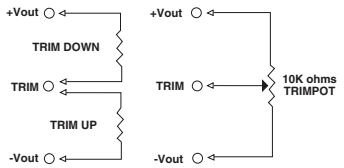
Pin #	Single Output	Dual Output
	Function	Function
1	+V Input	+V Input
2	-V Input	-V Input
3	+V Output	+V Output
4	Trim	Common
5	-V Output	-V Output
6	Remote ON / OFF	

DERATING CURVE



EXTERNAL OUTPUT TRIMMING

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



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