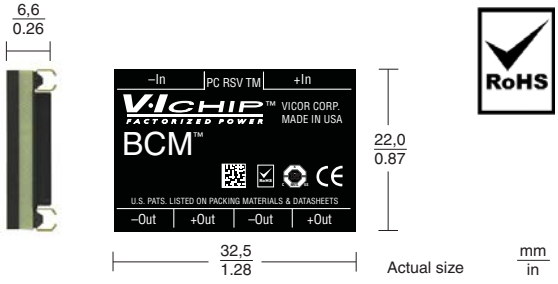
V·I Chip™ BCM™ Bus Converter

- Efficiency: up to 96%
- Input: 48 V and HV 350 / 380 V
- Power Density: >1000 W/in^3
- Current sharing: 5%
- Isolation: 2,250 Vdc
- Footprint: 1.1 in^2



RoHS

Product Description

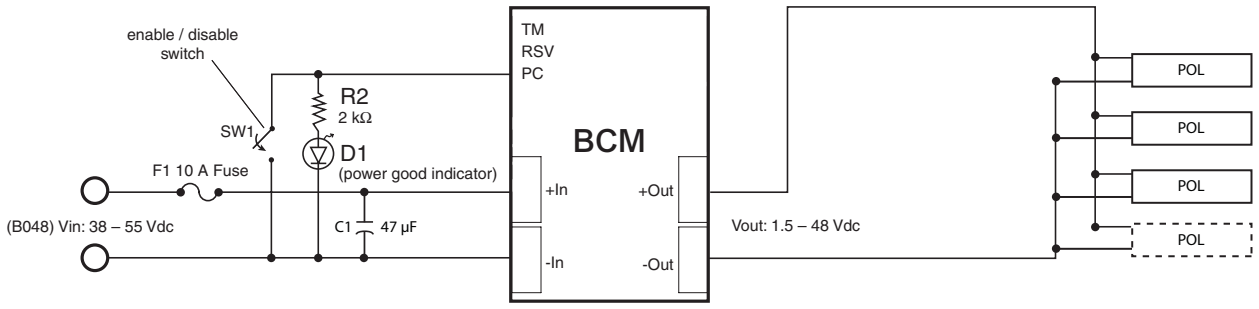
The Bus Converter family consists of 14 models that provide an isolated intermediate bus voltage to power non-isolated POL converters. The 48 V BCMs operate from a narrow-input-range DC source and depending on the model selected, deliver a single output with ratings of 1.5 Vdc to 48 Vdc at up to 300 W. The 48 Vdc BCM family offers superior performance, the highest efficiency and power density in the smallest package available. The HV BCMs offer direct conversion from PFC bus voltage to 12 V POL and isolation to 4,242 Vdc.

Model Number	Input Voltage (V)	Output Voltage (V)	Output Power (W)	Output Current (A)	Efficiency (%)		Output Ripple (mV)	
					50% Load	100% Load	50% Load	100% Load
B048F015T14	38 – 55	1.19 – 1.71	135	90	91.5	91.1	70	110
B048F030T21	38 – 55	2.38 – 3.43	210	70	95.0	94.2	50	65
B048F040T20	38 – 55	3.17 – 4.58	200	50	94.8	94.4	170	220
B048F060T24	38 – 55	4.75 – 6.87	240	40	95.6	94.6	98	170
B048F080T24	38 – 55	6.33 – 9.16	240	30	96.0	95.8	70	140
B048F096T24	38 – 55	7.60 – 11.0	240	25	96.2	96.2	110	180
B048F120T30	38 – 55	9.50 – 13.8	300	25	95.1	95.6	100	150
B048F160T24	38 – 55	12.7 – 18.3	240	15	96.0	95.7	107	150
B048F240T30	38 – 53	19.0 – 26.5	300	12	95.7	95.9	85	150
B048F320T30	38 – 55	25.3 – 36.7	300	9	96.5	96.2	115	180
B048F480T30	38 – 55	38.0 – 55.0	300	6	96.7	96.4	95	190
B352F110T24	330 – 365	10.3 – 11.4	240	21.8	95.6	95.8	140	240
B352F110T30	330 – 365	10.3 – 11.4	300	27.2	95.8	95.2	110	200
B384F120T30	360 – 400	11.25 – 12.5	300	25	95.2	95.3	100	195

Part Numbering

B	048	F	480	T	30
VIC Family B = BCM	Nominal Input Voltage 048 = 48 Vdc 352 = 352 Vdc	Package F = Full VIC, J lead	Output Voltage Designator (=VOUT x10) 480 = 48 Vdc	Product Grade Temperatures (°C) Grade Storage Operating (TJ) T -40 to125 -40 to125	Output Power Designator (=POUT/10)

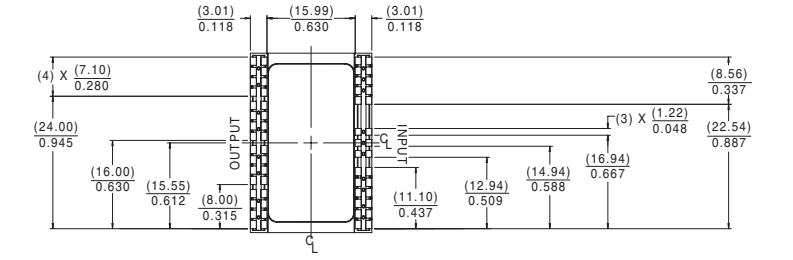
Typical Application



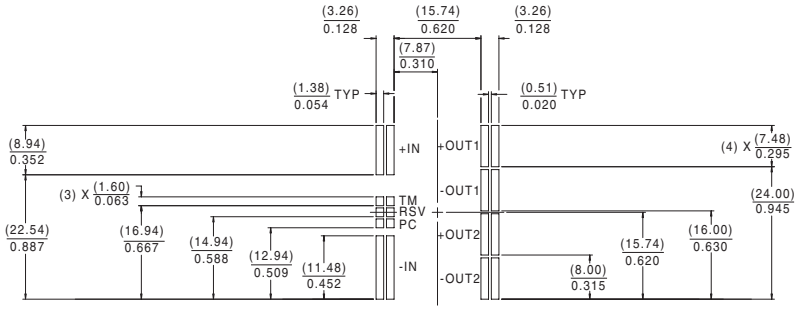
General Specifications

Parameter	Typ	Unit	Note
MTBF			
MIL-HDBK-217F	3.5	Mhrs	25°C, GB
Isolation			
Voltage	2,250	Vdc	Min.
Capacitance	3,000	pF	
Resistance	10	MΩ	Min.
Regulatory compliance	cTÜVus		UL/CSA 60950, EN60950
	CE Mark		Low voltage directive
	RoHS		
Thermal			
Over temperature shutdown	125	°C	mimimum, junction temperature
Junction-to-case thermal impedance	1.1	°C/W	
Junction-to-board thermal impedance	2.1	°C/W	
Case-to-ambient thermal impedance	3.7	°C/W	with 0.25" heat sink @ 300 LFM
Operating junction temperature	-40 to 125	°C	
Storage temperature	-40 to 125	°C	

BCM Mechanical Outline Drawing



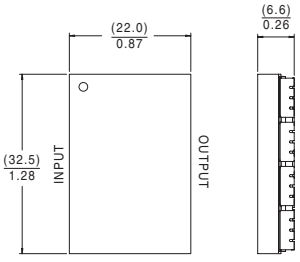
BOTTOM VIEW



RECOMMENDED LAND PATTERN
(COMPONENT SIDE SHOWN)

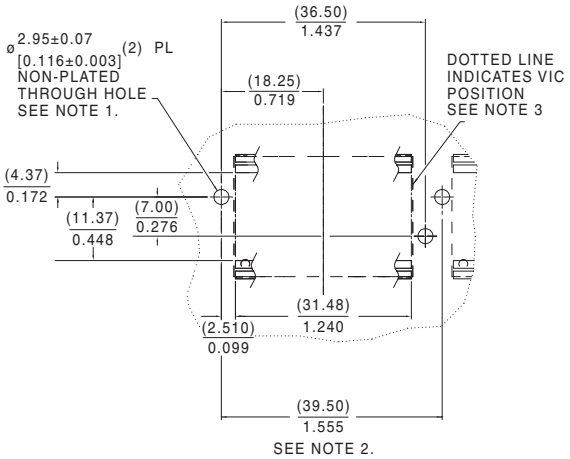
NOTES:
1. DIMENSIONS ARE mm / inch.
2. UNLESS OTHERWISE SPECIFIED, TOLERANCES ARE:
   .X / [.XX] = +/-0.25 / [.01]; .XX / [.XXX] = +/-0.13 / [.005]
3. PRODUCT MARKING ON TOP SURFACE

DXF and PDF files are available on vicorpower.com



TOP VIEW (COMPONENT SIDE)

Heat Sink Push-Pin Hole Pattern



HEAT SINK PUSH-PIN HOLE PATTERN
(TOP SIDE SHOWN)
SEE NOTE 3

NOTES:

1. MAINTAIN 3.5/[0.138] DIA. KEEP OUT ZONE FREE OF COPPER. ALL PCB LAYERS.
2. MINIMUM RECOMMENDED PITCH IS 39.50/[1.555]. THIS PROVIDES 7.00/[0.276] COMPONENT EDGE-TO-EDGE SPACING. AND 0.50/[0.020] CLEARANCE BETWEEN VICOR HEAT SINKS.
3. V•I CHIP LAND PATTERN SHOWN FOR REFERENCE ONLY; ACTUAL LAND PATTERN MAY DIFFER. DIMENSIONS FROM EDGES OF LAND PATTERN TO PUSH-PIN HOLES WILL BE THE SAME FOR ALL FULL SIZE V•I CHIPS.
4. DIMENSION ARE (mm) / inch.