

VI Chip® PRM® Regulator and VTM® Current Multiplier

VICOR



Description

The PRM regulator is a very efficient non-isolated regulator capable of both boosting and bucking a wide range input voltage and providing a regulated, adjustable output voltage or "Factorized Bus". PRM regulators can be used stand-alone as non-isolated voltage regulators or combined with VTM current multipliers for a complete isolated, DC-DC solution with high efficiency and power density. The VTM module provides point-of-load, fixed ratio voltage transformation with extremely fast transient response and isolation to 2,250 Vdc.

Features

Simple to Use

- Sine Amplitude Converter (VTM)
- ZVS buck-boost regulator (PRM)
- Regulation 0.2% (Remote Sense)
- Small footprint: 1.1 in² or 0.56 in²
- High efficiency up to 97%
- Low profile 0.265"
- Power Density up to 2,040 W/in³

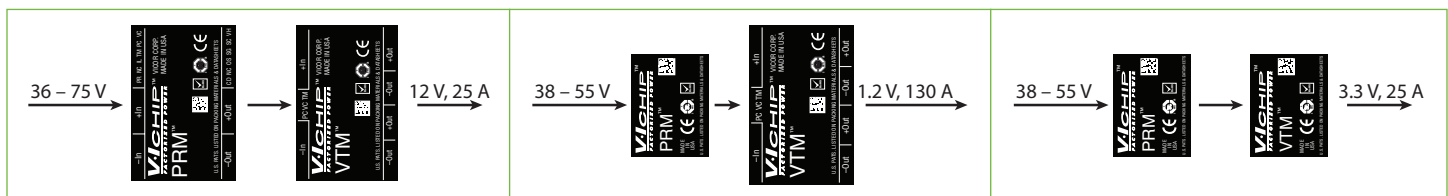
PRM Model Number*	Input Voltage Nom. (V)	Range (V)	Output Voltage Range (V)	Output Power Max. (W)	Output Current Max. (A)	Package
P024F048T12AL	24	18 – 36	26 – 55	120	2.5	Full
P036F048T12AL	36	18 – 60	26 – 55	120	2.5	Full
✕ PRM48AH480T200A00	48	36 – 75	20 – 55	200	6.3	Half
✕ PRM48AF480T400A00	48	36 – 75	20 – 55	400	12.5	Full
PRM48BH480T200B00	48	38 – 55	5 – 55	200	5.5	Half
PRM48DH480T250B03	48	38 – 60	5 – 55	200	5.5	Half
✕ PRM48BH480T250A00	48	38 – 55	20 – 55	250	7.3	Half
PRM48JH480T250A00	48	45 – 55	20 – 55	250	7.3	Half
PRM48JH480T250A02	48	45 – 55	20 – 55	250	7.3	Half
PRM48BF480T400B00	48	38 – 55	5 – 55	400	11.0	Full
✕ PRM48BF480T500A00	48	38 – 55	20 – 55	500	14.5	Full
PRM48JF480T500A00	48	45 – 55	20 – 55	500	14.5	Full
PRM48BF480T600A00	48	39 – 55	5 – 55	600	16.5	Full

VTM Model Number*	Input Voltage Range (V)	Output Voltage Range (V)	Output Current Max. (A)	Package
VTM48EF012T130A00	26 – 55	0.65 – 1.37	130	Full
VTM48EF015T115A00	26 – 55	0.81 – 1.71	115	Full
VTM48EH015T050A00	26 – 55	0.81 – 1.72	50	Half
VTM48EF020T080A00	26 – 55	1.08 – 2.29	80	Full
VTM48EH020T040A00	26 – 55	1.08 – 2.29	40	Half
VTM48EF030T070A00	26 – 55	1.63 – 3.44	70	Full
VTM48EF040T050B00	26 – 55	2.17 – 4.58	50	Full
VTM48EF040T050B0R New!	26 – 55	2.17 – 4.58	50	Full
VTM48EH040T025B00	26 – 55	2.17 – 4.58	25	Half
VTM48EF060T040A00	26 – 55	3.25 – 6.88	40	Full
VTM48FH060T020A00	26 – 48	3.25 – 6.00	20	Half
VTM48EF080T030A00	26 – 55	4.33 – 9.17	30	Full
VTM48EF096T025A00	32 – 55	6.40 – 11.00	25	Full
VTM48EF120T025A00	26 – 55	6.50 – 13.75	25	Full
VTM48EF120T025A0R New!	26 – 55	6.50 – 13.75	25	Full
VTM48EH120T010B00	26 – 55	6.50 – 13.75	10	Half
VTM48EF160T015A00	26 – 55	8.67 – 18.33	15	Full
VTM48EF240T012A00	26 – 53	14.00 – 26.50	12	Full
VTM48EF320T009A00	26 – 55	17.33 – 36.67	9	Full
VTM48EF480T006A00	26 – 55	26.00 – 55.00	6	Full

*Full-chip models also available in through hole. All models available in M grade.

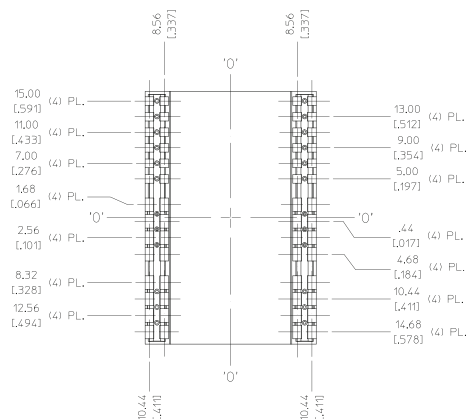
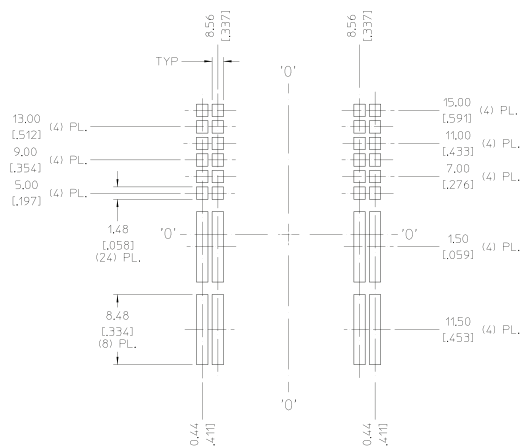
✕ Configurable at vicorpower.com

Typical Application



Mechanical Outline Drawings

Full-Chip PRM® Module

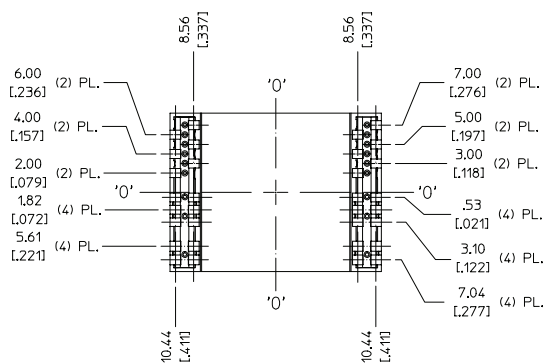
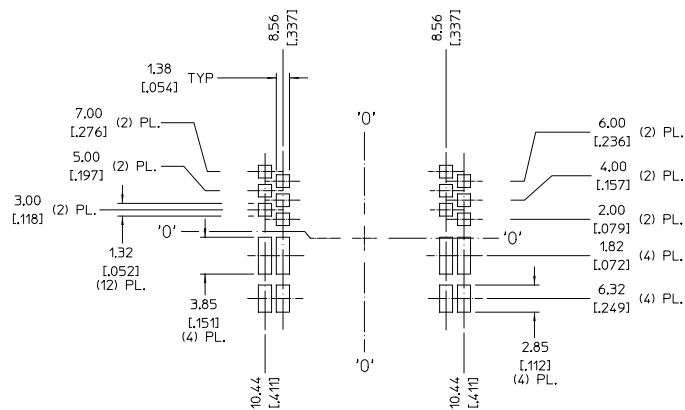


BOTTOM VIEW

- NOTES:
1. DIMENSIONS ARE $\frac{\text{mm}}{\text{inch}}$.
 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

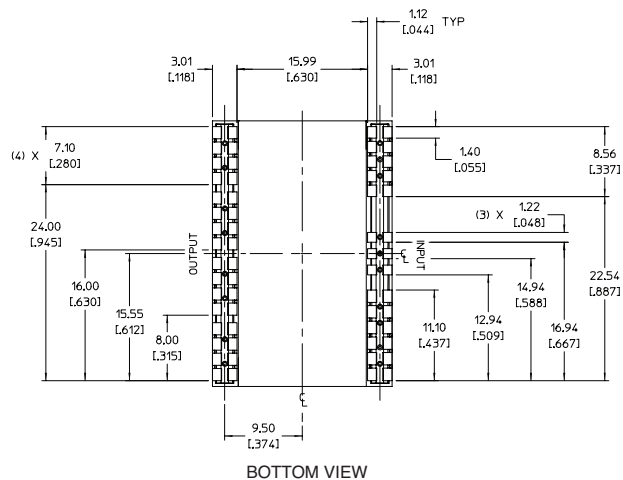
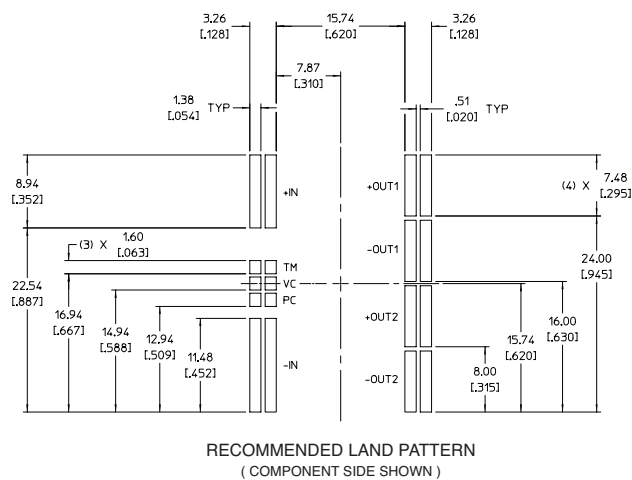
Half-Chip PRM® Module



BOTTOM VIEW

Mechanical Outline Drawings (Continued)

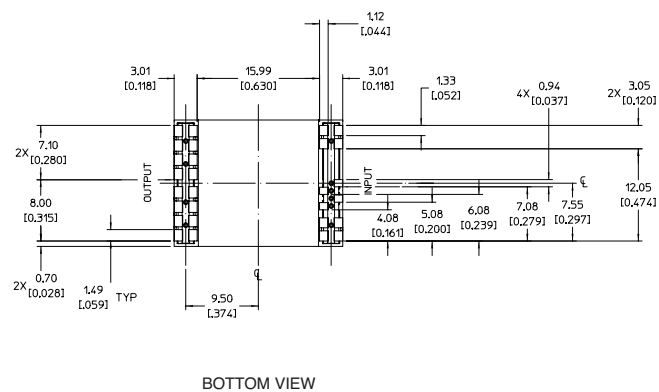
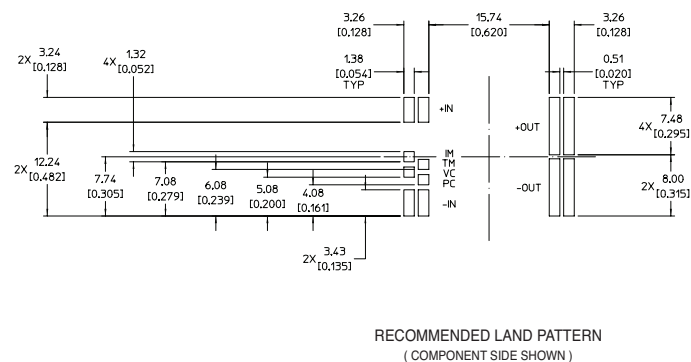
Full-Chip VTM[®] Module



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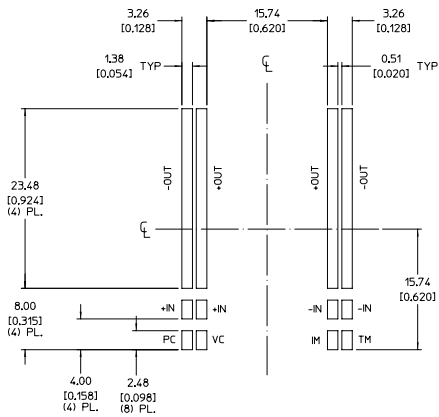
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Half-Chip VTM® Module

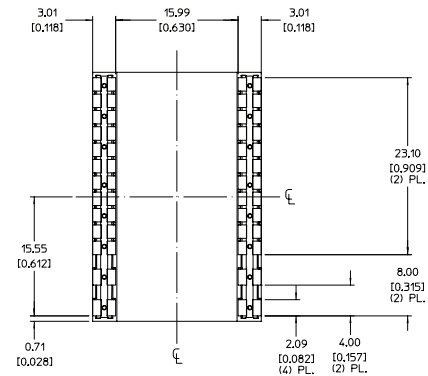


Mechanical Outline Drawings (Continued)

High-Current VTM® Module



RECOMMENDED LAND PATTERN
(COMPONENT SIDE SHOWN)



BOTTOM VIEW

NOTE:

1. RoHS COMPLIANT PER CST-0001 LATEST REVISION.

The products described on this document are protected by the following U.S. Patents Numbers: PRMs: 5,945,130; 6,403,009; 6,710,257; 6,788,033; 6,940,013; 6,969,909; 7,038,917; 7,154,250; 7,166,898; 7,187,263; 7,202,646; 7,361,844; 7,368,957; RE40,072; D496,906; D506,438; D509,472; and for use under 6,975,098 and 6,984,965 VTMs: 5,945,130; 6,403,009; 6,710,257; 6,911,848; 6,930,893; 6,934,166; 6,940,013; 6,969,909; 7,038,917; 7,145,186; 7,166,898; 7,187,263; 7,202,646; 7,361,844; D496,906; D505,114; D506,438; D509,472; and for use under 6,975,098 and 6,984,965