

V.I Chip™ DC-DC Modules

MILITARY

PRM™ REGULATOR AND BCM HIGH VOLTAGE BUS CONVERTER

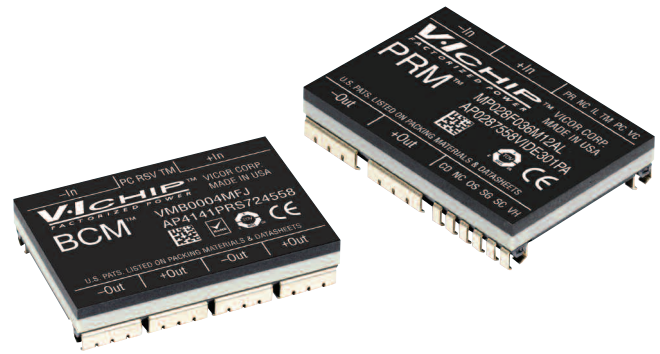
FEATURES

PRM

- Input: 16 – 50 Vdc^[a]
- Programmable output: 26 – 50 Vdc
- Power: Up to 120 W
- 1.3 MHz switching frequency
- Efficiency: 95%
- Size: 1.28" x 0.87" x 0.26" (32,5 x 22 x 6,6 mm)

BCM

- Input: 240 – 330 Vdc
- Output: 30.0 – 41.25 Vdc
- Power: Up to 235 W
- Low profile 0.37" flanged model
- Size: 1.28" x 0.87" x 0.26" (32,5 x 22 x 6,6 mm)



PRODUCT INFORMATION

The **PRM** is a high-efficiency non-isolated regulator capable of both boosting and bucking a wide-range input voltage. PRMs may be used independently, as stand-alone regulators, or together with downstream Voltage Transformation Modules — fast, efficient, isolated low-noise point-of-load (POL) converters. The MIL-COTS PRM operates from a wide input range of 16 – 50 Vdc, meeting many of the ground vehicle and airborne requirements of MIL-STD-1275 and MIL-STD-704. Rated for 120 W, the 28 V PRM produces a nominal Factorized Bus voltage of 36 Vdc, controllable over the range of 26 – 50 Vdc. The downstream isolated VTM™ (Current Multiplier) is available with twelve voltage division ratios to supply up to 100 A or 120 W from 1 – 50 Vdc.

The MIL-COTS Bus Converter Module (**BCM**) is a high efficiency converter operating from MIL-STD-704E/F 270 V and delivering an isolated 30.0 – 41.3 V. The BCM is suitable for use with the MIL-COTS PRM–Regulator and VTM–Current Multiplier, and is ideal for aircraft distributed power applications.

BCM PART NUMBERING

- VMB0004MFJ – MIL-COTS High Voltage BCM, J-Leads
- VMB0004MFT – MIL-COTS High Voltage BCM, Through Hole

BCM GENERAL SPECIFICATIONS

(Full load, 25°C ambient)

PARAMETER	MIN	TYP	MAX	UNIT	NOTE
BCM Input Characteristics					
Input voltage range	240	270	330	Vdc	
DC input current			0.95	A	Continuous
No load power dissipation			10	W	

PRM GENERAL SPECIFICATIONS

(Full load, 25°C ambient)

PARAMETER	MIN	TYP	MAX	UNIT	NOTE
PRM INPUT CHARACTERISTICS					
Input voltage range	16.1 ^[a]	28	50	Vdc	
Input undervoltage turn-on		15.9	16.1	Vdc	Increases linearly to 17 V at 100°C
Input undervoltage turn-off	12.2	13.5		Vdc	
Input overvoltage turn-on	50.5	52.5		Vdc	
Input overvoltage turn-off		53.5	55.0	Vdc	
Input current		4.5		Adc	
No load power dissipation		2.75	5.5	W	
Recommended external input capacitance		1,000		µF	Source impedance dependent

PARAMETER	MIN	TYP	MAX	UNIT	NOTE
PRM OUTPUT CHARACTERISTICS					
Output voltage range	26	36	50	Vdc	Factorized Bus voltage (Vf) set by Ros
Output power	0		120	W	
Output current	0		3.33	Adc	
DC current limit	3.5	3.9	4.4	Adc	IL pin floating
Set point accuracy		1.5		%	
Line regulation		0.1	0.2	%	Low line to high line
Load regulation		0.1	0.2	%	No CD resistor
Load regulation (at VTM output)		1.0	2.0	%	Adaptive Loop
Efficiency					
Full load	94	95.6		%	
Output overvoltage set point	56		59.4	Vdc	

^[a] Will operate down to 13.5 V after start up 16 V

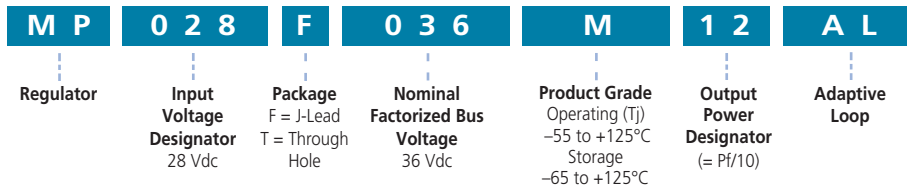
PARAMETER	MIN	TYP	MAX	UNIT	NOTE
BCM Output Characteristics					
Output voltage range	30.0		41.25	Vdc	
Output power			235	W	
Output current			7.3	A	
Efficiency		95.4		%	

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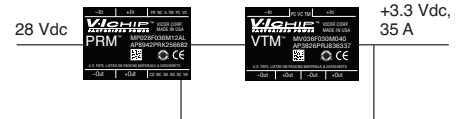
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PRM PART NUMBERING

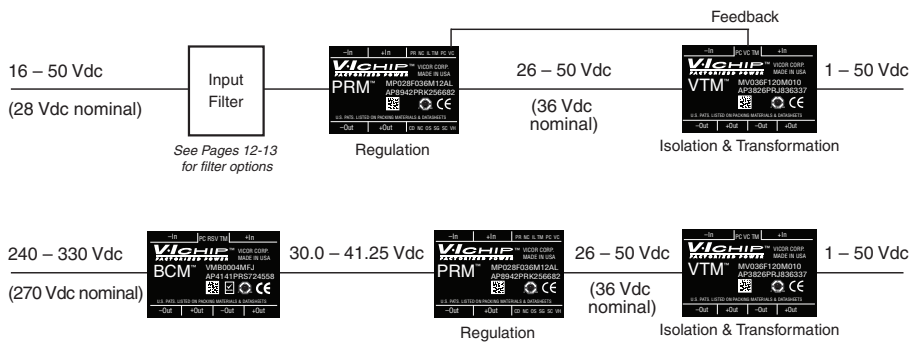


APPLICATION EXAMPLES

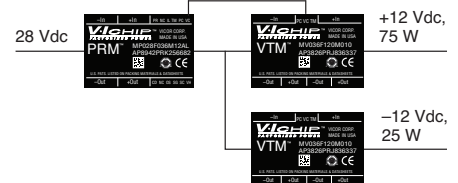
Tightly Regulated Single Output



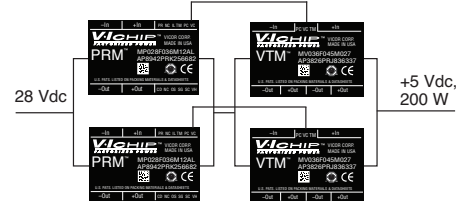
DC-DC CONVERSION USING V.I CHIP MODULES



Multiple Outputs with a Single PRM



Parallel for Higher Power



Together, the PRM and the VTM chip set provides the full functionality of a DC-DC converter, but with breakthrough performance and flexibility in a rugged, miniature package.

PRM MECHANICAL DRAWING ⁱⁿ/_(mm)

(see data sheet for BCM outline drawing)

