

MIL-COTS PRM™ Regulator and VTM™ Current Multiplier Modules

Features

- -55°C to 100°C baseplate
- Sine Amplitude Converter (VTM)
- ZVS buck-boost regulator (PRM)
- Regulation 1% (Adaptive Loop)



- Small footprint: 1.64 and 2.08 in²
- 16 – 50 Vin
- 1 – 50 Vout
- Up to 120 W of output
- High efficiency up to 96.5%
- Low profile 0.37" flanged model
- Power density: Up to 156 W/in³
- Flexible architecture
- Low noise
- Fast transient response

Product Description

MIL-COTS VI BRICK PRM and VTM modules provide the technical advantages of Factorized Power including high density and efficiency, low noise operation, architectural flexibility, extremely fast transient response, and elimination of bulk capacitance at the point-of-load (POL). Utilizing baseplate and integrated heat sink packaging, the platform also provides improved thermal management and through-hole mounting capability in a small, robust package.

PRM Model Number	Input Voltage (V)	Output Voltage (V)	Output Power (W)	Regulation (%)		Efficiency (%)	
				Line	Load	50% Load	100% Load
MR028A036M012FP	16 - 50 ^[a]	26 - 50	120	0.10	0.10	92.5	95.0

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

VTM Model Number	K-Factor	No Load Output Voltage (V)		Output Current (A)	Efficiency at nom Vout (%)	
		26 Vin	50 Vin		50% Load	100% Load
MT036A011M100FP	1/32	0.82	1.55	100	91.5	89.5
MT036A015M080FP	1/24	1.1	2.0	80	94.0	92.0
MT036A022M055FP	1/16	1.6	3.1	55	94.5	94.0
MT036A030M040FP	1/12	2.2	4.1	40	95.0	94.0
MT036A045M027FP	1/8	3.3	6.2	27	96.5	95.3
MT036A060M020FP	1/6	4.3	8.3	20	96.8	95.3
MT036A072M017FP ^[a]	1/5	6.4 ^[a]	10.0	16.6	96.5	96.5
MT036A090M013FP	1/4	6.5	12.5	13.3	95.5	96.3
MT036A120M010FP	1/3	8.7	16.6	10.0	95.5	95.5
MT036A180M007FP	1/2	13.0	25.0	6.7	95.2	96.0
MT036A240M005FP	2/3	17.4	33.0	5.0	95.4	95.6
MT036A360M003FP	1	26.0	50.0	3.3	96.0	96.0

^[a] Low line input voltage 32 V

Typical Application

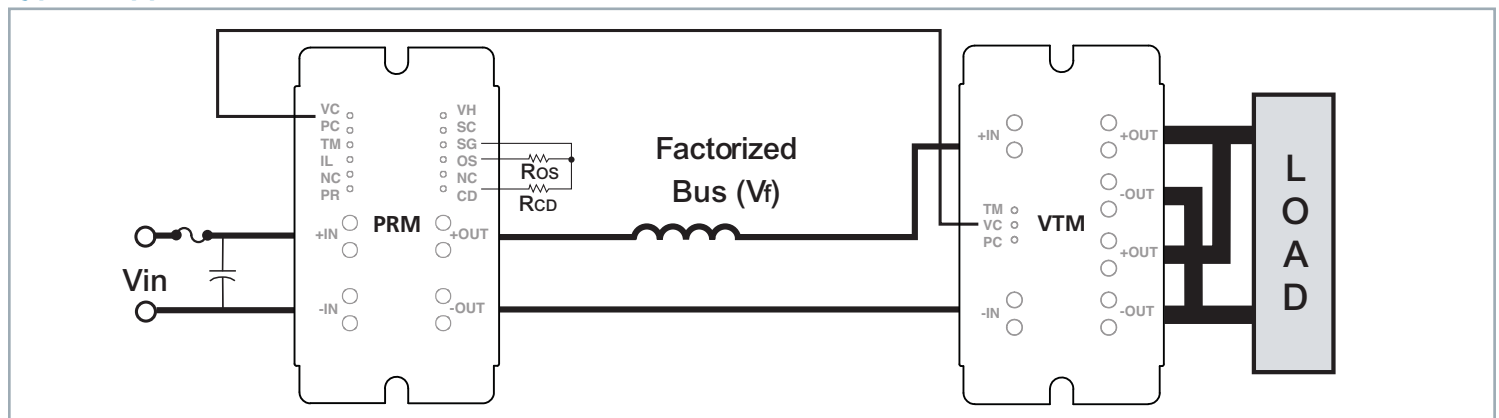


Figure 1 — Typical application with Adaptive Loop control, the output of the VTM is regulated over the load current range with only a single interconnect between the PRM and VTM and without the need for isolation in the feedback path.

The image contains three technical drawings for a component assembly:

- Baseplate - Slotted Flange:** This drawing shows a top view of a square baseplate with a central slot. It includes dimensions for the overall size (1.754 x 1.754 inches), slot width (0.502 inches), and various mounting hole positions. A side view shows the flange profile with a height of 0.191 inches and a base thickness of 0.020 inches.
- Heat Sink (Transverse):** This drawing shows a side view of a heat sink with a series of fins. It includes dimensions for the fin height (0.146 inches), fin spacing (0.079 inches), and overall width (0.191 inches).
- Recommended PCB Pattern (Component side shown):** This drawing shows the component side of the PCB pattern. It includes dimensions for the overall size (1.754 x 1.754 inches), mounting hole positions, and various component footprints. A side view shows the PCB thickness (0.020 inches) and the location of the component side.

[illegible]