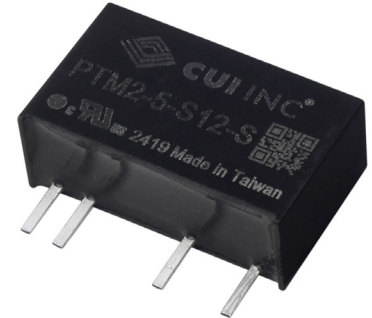


**SERIES:** PTM2-S | **DESCRIPTION:** DC-DC CONVERTER

**FEATURES**

- 2 W isolated output
- industry standard SIP package
- single/dual regulated outputs
- 6,000 Vdc isolation voltage
- reinforced insulation, 300 Vdc working voltage
- continuous short circuit protection
- -40~95 °C operating temperature with derating
- certified to UL/cUL 62368-1, EN 60601-1, 2xMOOP
- meets EN 55011 Class B

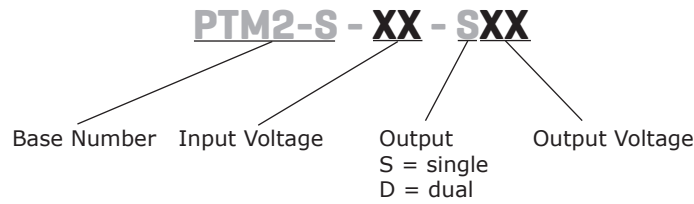


MODEL	input voltage <sup>1</sup>		output voltage (Vdc)	output current max (mA)	output power max (W)	ripple and noise <sup>2</sup> max (mVp-p)	efficiency <sup>3</sup> typ (%)
	typ (Vdc)	range (Vdc)					
PTM2-3-S3-S	3.3	2.97~3.63	3.3	606	2	100	77.0
PTM2-3-S5-S	3.3	2.97~3.63	5	400	2	100	78.5
PTM2-3-S12-S	3.3	2.97~3.63	12	167	2	100	82.0
PTM2-3-S15-S	3.3	2.97~3.63	15	134	2	100	83.0
PTM2-3-D5-S	3.3	2.97~3.63	±5	±200	2	100	81.0
PTM2-3-D12-S	3.3	2.97~3.63	±12	±84	2	100	85.0
PTM2-3-D15-S	3.3	2.97~3.63	±15	±67	2	100	84.0
PTM2-5-S3-S	5	4.5~5.5	3.3	606	2	100	77.0
PTM2-5-S5-S	5	4.5~5.5	5	400	2	100	79.0
PTM2-5-S12-S	5	4.5~5.5	12	167	2	100	83.0
PTM2-5-S15-S	5	4.5~5.5	15	134	2	100	84.0
PTM2-5-D5-S	5	4.5~5.5	±5	±200	2	100	81.0
PTM2-5-D12-S	5	4.5~5.5	±12	±84	2	100	82.0
PTM2-5-D15-S	5	4.5~5.5	±15	±67	2	100	85.5
PTM2-12-S3-S	12	10.8~13.2	3.3	606	2	100	77.0
PTM2-12-S5-S	12	10.8~13.2	5	400	2	100	80.0
PTM2-12-S12-S	12	10.8~13.2	12	167	2	100	84.0
PTM2-12-S15-S	12	10.8~13.2	15	134	2	100	83.0
PTM2-12-D5-S	12	10.8~13.2	±5	±200	2	100	82.0
PTM2-12-D12-S	12	10.8~13.2	±12	±84	2	100	83.0
PTM2-12-D15-S	12	10.8~13.2	±15	±64	2	100	84.0
PTM2-24-S3-S	24	21.6~26.4	3.3	606	2	100	79.0
PTM2-24-S5-S	24	21.6~26.4	5	400	2	100	81.0
PTM2-24-S9-S	24	21.6~26.4	9	222	2	100	84.0
PTM2-24-S12-S	24	21.6~26.4	12	167	2	100	85.0
PTM2-24-S15-S	24	21.6~26.4	15	134	2	100	85.0

MODEL	input voltage <sup>1</sup>		output voltage (Vdc)	output current max (mA)	output power max (W)	ripple and noise <sup>2</sup> max (mVp-p)	efficiency <sup>3</sup> typ (%)
	typ (Vdc)	range (Vdc)					
PTM2-24-D5-S	24	21.6~26.4	±5	±200	2	100	82.0
PTM2-24-D12-S	24	21.6~26.4	±12	±84	2	100	85.0
PTM2-24-D15-S	24	21.6~26.4	±15	±67	2	100	84.0

- Note:
- ±10%
  - Measured at 20 MHz bandwidth, nominal input voltage.
  - The efficiency is test by nominal input and max full load at 25°C.
  - All specifications are measured at Ta=25°C, nominal input voltage and full output load unless otherwise specified.

## PART NUMBER KEY



## INPUT

parameter	conditions/description	min	typ	max	units
operating input voltage			±10		%
filter	internal capacitors				

## OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	3.3 & 5 Vdc output models			1,000	µF
	9 Vdc output models			470	µF
	12 & 15 Vdc output models			330	µF
	±5 Vdc output models			680	µF
	±12 & ±15 Vdc output models			150	µF
line regulation	input voltage from low to high, full load		1.2		%
load regulation	0% to full load				
	3.3 & 5 Vdc output models			15	%
	all other output models			12	%
switching frequency	at full load, nominal input voltage	20			KHz
voltage accuracy			±5		%

## PROTECTIONS

parameter	conditions/description	min	typ	max	units
short circuit protection	continuous				

## SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output for 1 minute	6,000			Vdc
isolation capacitance			25		pF
safety approvals <sup>5</sup>	certified to 62368-1: UL				
	certified to 60601-1: EN				
EMI	EN 55011 Class B				
ESD	EN 61000-4-2, Air ±15 kV; Contact ±8 kV, perf. Criteria B				
EFT/burst	EN 61000-4-4, ± 2 kV, perf. Criteria A				

- Note: 5. 2xMOOP

## SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
surge	EN61000-4-5, ± 1 kV, perf. Criteria A				
vibration	MIL-STD-202G				
MTBF	as per MIL-HDBK-217F	12,900,000			hours
RoHS compliant	yes				

## ENVIRONMENTAL

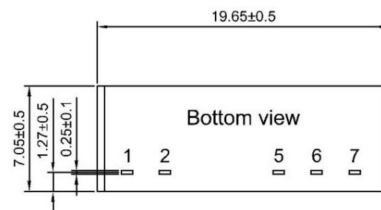
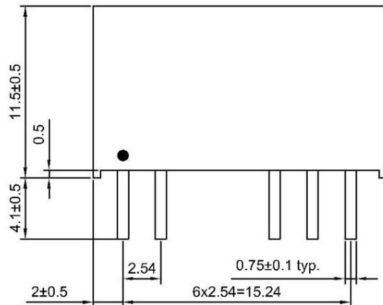
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curve PTM2-12-S12-S & PTM2-12-D12-S all other models	-40 -40		90 95	°C °C
storage temperature		-55		125	°C
maximum temperature case				105	°C
storage humidity	non-condensing	5		95	%

## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	19.65 x 7.05 x 11.5				mm
weight			2.8		g
case material	UL94V-0 black plastic				
potting material	silicone (UL94V-0)				

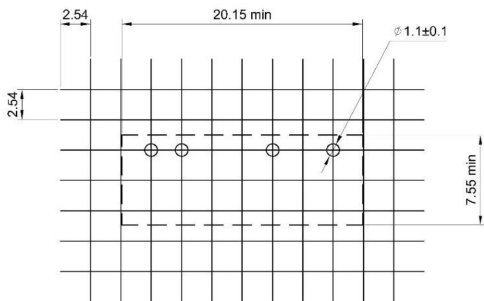
## MECHANICAL DRAWING

units: mm  
tolerance: ±0.25 mm



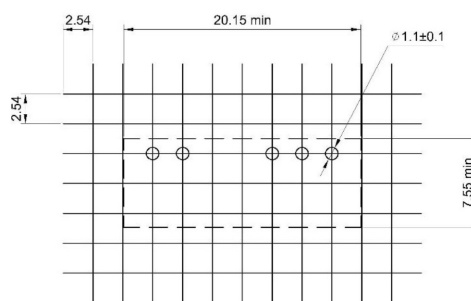
PIN CONNECTIONS		
PIN	Single output	Dual output
1	+Vin	+Vin
2	-Vin	-Vin
5	-Vout	-Vout
6	no pin	Com.
7	+Vout	+Vout

Single output



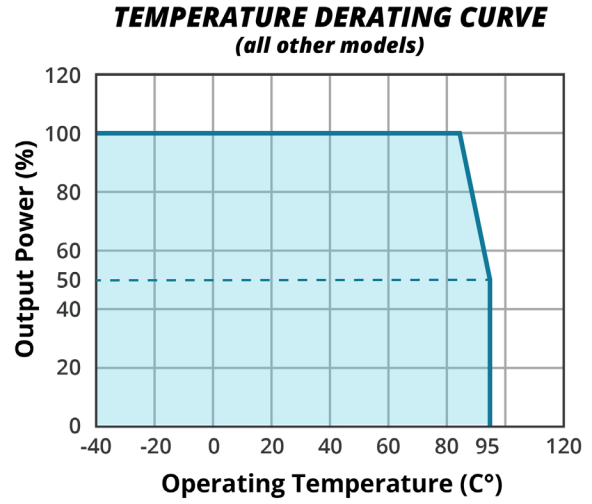
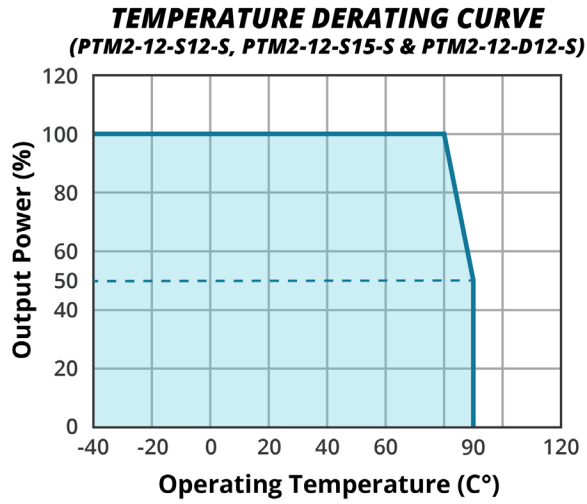
Footprint (Top view)

Dual output

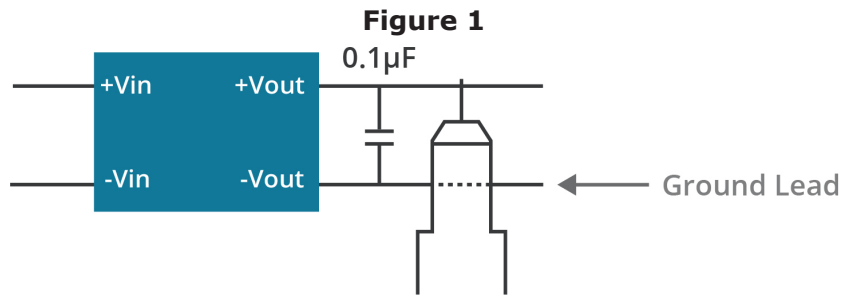


Footprint (Top view)

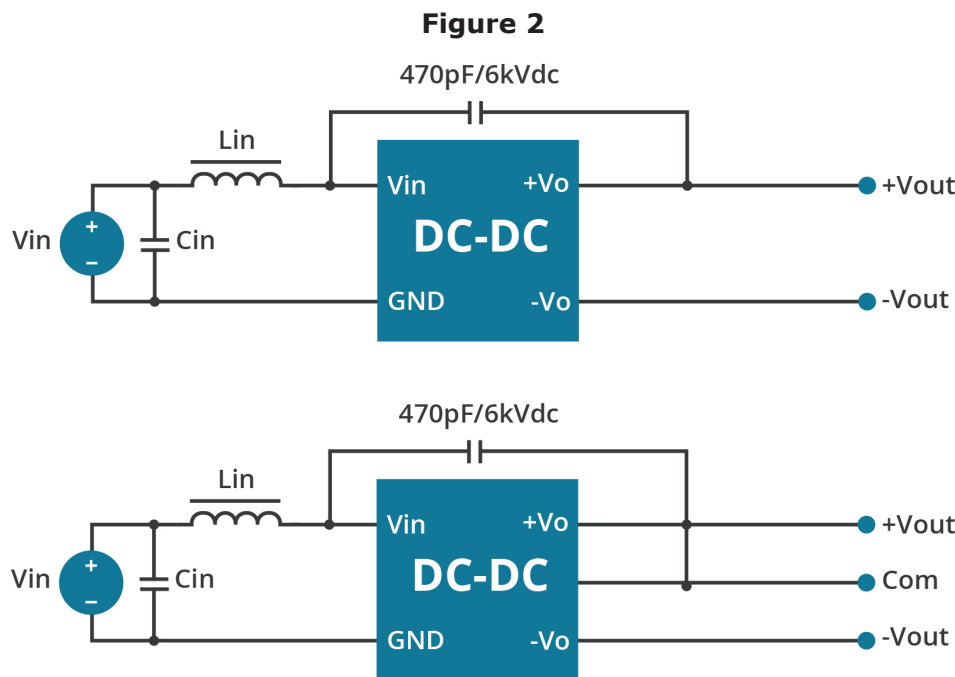
## DERATING CURVES



## RIPPLE AND NOISE MEASURE



## EMC RECOMMENDED CIRCUIT - CLASS B



**Table 1**

Input voltage (V)	Inductance / Capacitance (Lin/Cin)
3.3	47µH/22µF
5	47µH/22µF
12	47µH/10µF
24	100µH/22µF

Note: The External Filter for meet EN55032 Class B

## REVISION HISTORY

rev.	description	date
1.0	initial release	08/09/2024
1.01	CE certification updated	09/04/2024

The revision history provided is for informational purposes only and is believed to be accurate.



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CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

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