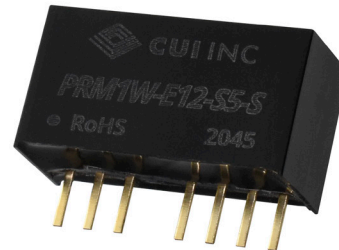


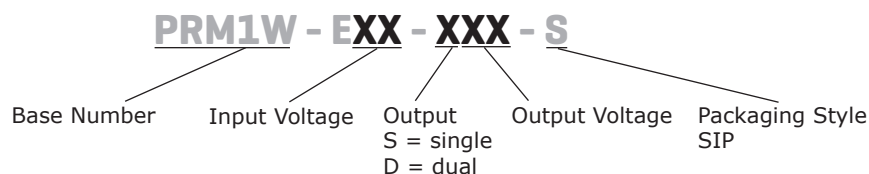
SERIES: PRM1W-S | DESCRIPTION: DC-DC CONVERTER
FEATURES

- 1 W isolated output
- 8:1 input range (4.5~36)
- single & dual regulated output
- 3k Vdc isolation
- short circuit, over current, input under voltage protection
- wide operating temperature range -40~105°C
- efficiency up to 74%
- EN62368 certified



MODEL	input voltage		output voltage (Vdc)	output current max (mA)	output power max (W)	ripple and noise ¹ max (mVp-p)	efficiency typ ² (%)
	typ (Vdc)	range (Vdc)					
PRM1W-E12-S5-S	12	4.5~36	5	200	1.0	100	71
PRM1W-E12-S9-S	12	4.5~36	9	111	1.0	100	72
PRM1W-E12-S12-S	12	4.5~36	12	83	1.0	100	74
PRM1W-E12-S15-S	12	4.5~36	15	67	1.0	100	74
PRM1W-E12-D5-S	12	4.5~36	±5	±100	1.0	100	71
PRM1W-E12-D12-S	12	4.5~36	±12	±42	1.0	100	74
PRM1W-E12-D15-S	12	4.5~36	±15	±33	1.0	100	74

Notes: 1. Ripple & noise testing condition at nominal input voltage and 5%-100% load, the "parallel cable" method is used for ripple and noise test, please refer to DC-DC Converter Application Notes for specific information.
 2. Measured at nominal input voltage and full load.

PART NUMBER KEY


INPUT

parameter	conditions/description	min	typ	max	units
input voltage		4.5	12	40	Vdc
start-up voltage				4.5	Vdc
surge voltage	1 second max	-0.7		50	Vdc
filter	capacitance filter				
current	full load/no load 5 Vdc/±5 Vdc output models other output models		117/10 114/10	123/15 120/15	mA mA

OUTPUT

parameter	conditions/description	min	typ	max	units
line regulation	min to max Vin, full load +Vo -Vo			±0.5 ±1	% %
load regulation	5% ~ 100% load +Vo -Vo			±1 ±1.5	% %
set-point accuracy	0% ~ 100% load		±1	±3	%
switching frequency	PWM mode		300		kHz
transient response	25% load step change 5 Vdc/±5 Vdc output models other output models		±5 ±3	±8 ±5	% %
temperature coefficient	full load			±0.03	%/°C

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over current protection		110		300	%
short circuit protection	continuous, self-recovery				

SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output 1mA max for 1 minute	3,000			Vdc
isolation resistance	input to output at 500 Vdc	1,000			MΩ
isolation capacitance	input to output capacitance at 100 KHz / 0.1 V		40		pF
safety approvals	certified to 62368:EN, IEC				
EMC/EMC	CISPR32/EN55032 CLASS B (see Fig.3-2 for recommended circuit)				
ESD	IEC/EN61000-4-2 Contact ±6KV perf. Criteria B				
radiated immunity	IEC/EN61000-4-3 10V/m perf. Criteria A				
EFT/burst	IEC/EN61000-4-4 ±2KV (see Fig.3-1 for recommended circuit) perf. Criteria B				
surge	IEC/EN61000-4-5 line to line ±2KV (see Fig.3-1 for recommended circuit) perf. Criteria B				
conducted immunity	IEC/EN61000-4-6 3 Vr.m.s perf. Criteria A				
RoHS	yes				
MTBF	as per MIL-HDBK-217F at 25°C	1,000			kHours

ENVIRONMENTAL

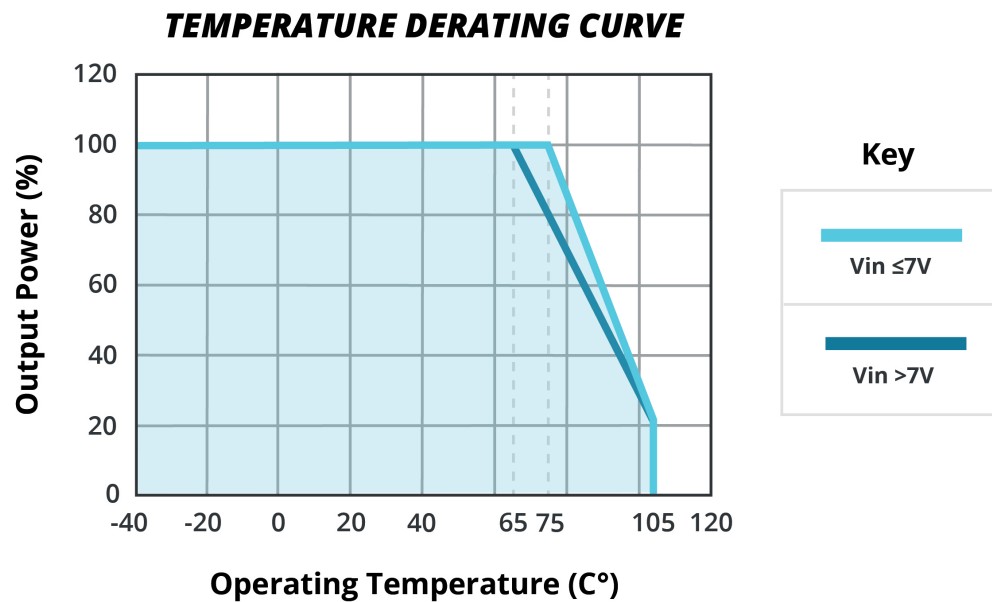
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curve	-40		105	°C
storage temperature		-55		125	°C
humidity	non-condensing	5		95	%

SOLDERABILITY

parameter	conditions/description	min	typ	max	units
hand soldering	1.5 mm from case for 10 seconds			300	°C

DERATING CURVE

Figure 1



MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	22.00 × 9.50 × 12.00				mm
case material	Black plastic; flame-retardant and heat-resistant (UL94-V0)				
weight			4.6		g

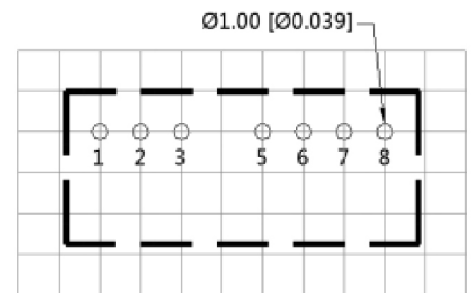
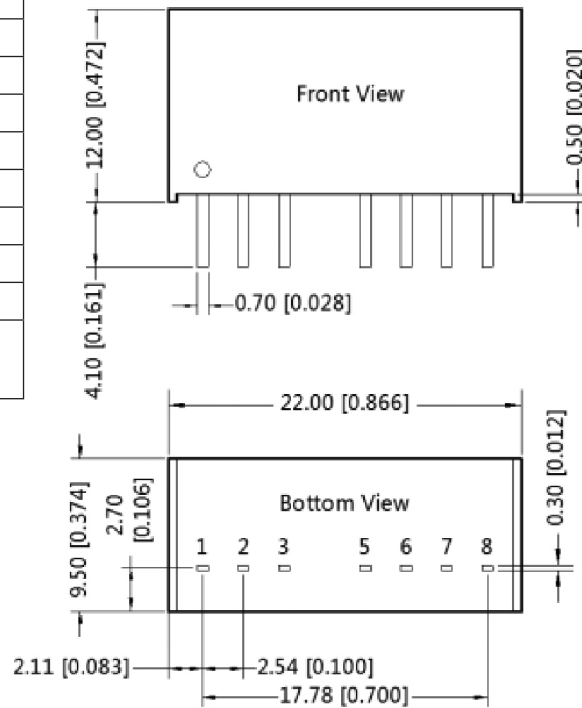
MECHANICAL DRAWING

units: mm [inches]

pin section tolerance: ± 0.10 [± 0.004]tolerance: ± 0.50 [± 0.020]

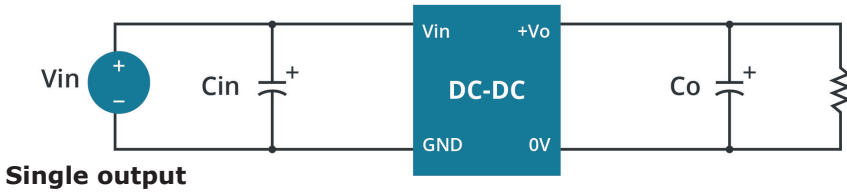
PIN CONNECTIONS		
PIN	Single	Dual
1	GND	GND
2	Vin	Vin
3	NC	NC
5	NC	NC
6	+Vo	+Vo
7	0V	0V
8	NC	-Vo

Note: NC not available for electrical connection.



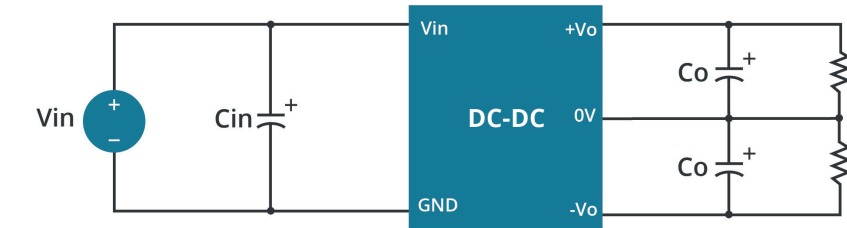
RECOMMENDED CIRCUITS

Figure 2



Single output

Parameter Description		
Single Vout (Vdc)	Cout (μF)	Cin (μF)
5/9/12/15	22 (25V)	100 (50V)

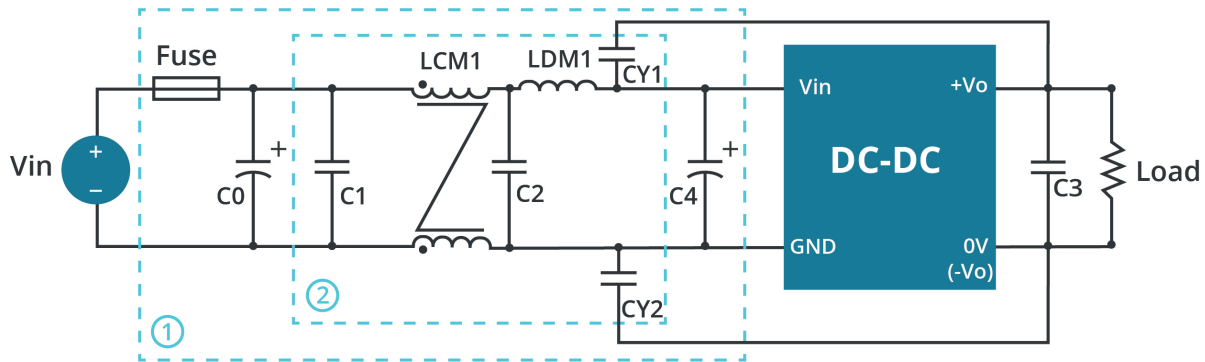


Dual output

Parameter Description		
Dual Vout (Vdc)	Cout (μF)	Cin (μF)
±5/±12/±15	22 (25V)	100 (50V)

EMC COMPLIANCE CIRCUITS

Figure 3



Note: For EMC tests was used Part①in Figure 3 for immunity and Part②for emissions test. Selecting based on needs.

Parameter Description	
FUSE	Select fuse value according to actual input current
C0	1000μF/50V
C4	100μF/50V
C1/C2	4.7μF/50V
C3	22μF/50V
LCM1	2.2mH
LDM1	4.7μH
CY1/CY2	1nF/KV

REVISION HISTORY

rev.	description	date
1.0	initial release	11/23/2020

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



Headquarters
20050 SW 112th Ave.
Tualatin, OR 97062
800.275.4899

Fax 503.612.2383
cui.com
techsupport@cui.com

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

CUI reserves the right to make changes to the product at any time without notice. Information provided by CUI is believed to be accurate and reliable. However, no responsibility is assumed by CUI for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

CUI products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.