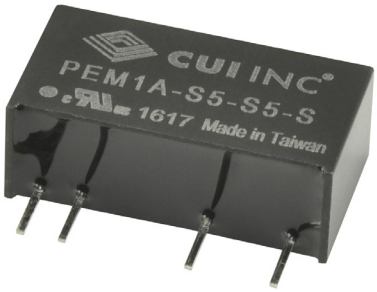
CUI INC
a bel group

SERIES: PEM1A-S | DESCRIPTION: DC-DC CONVERTER

FEATURES

- up to 1 W isolated output
- industry standard SIP 7 package
- 1:1 input range
- single unregulated output
- 4,000 Vdc isolation voltage
- -40 to 85°C temperature range
- efficiency up to 70%
- UL/cUL safety approval



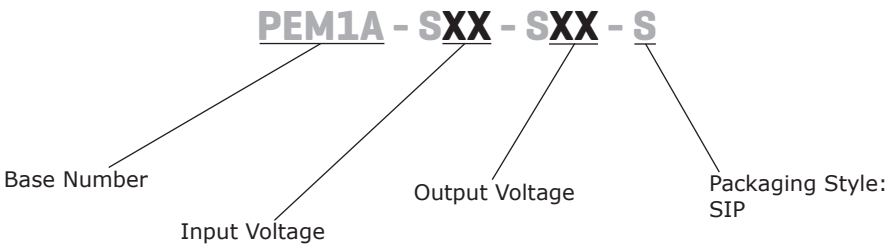
RoHS c UL us

MODEL

MODEL	input voltage typ (Vdc)	input voltage range (Vdc)	output voltage (Vdc)	output current max (mA)	output power max (W)	ripple & noise[1] max (mVp-p)	efficiency typ (%)
PEM1A-S5-S5-S	5	4.5~5.5	5	200	1	100	70

Notes: 1. At full load, nominal input, 20 MHz bandwidth oscilloscope, output terminated with a 0.1 µF multilayer low ESR ceramic capacitor.
2. All specifications measured at Ta=25°C, nominal input voltage, rated output load, and after warm up unless otherwise specified.

PART NUMBER KEY



INPUT

parameter	conditions/description	min	typ	max	units
operating input voltage		4.5	5	5.5	Vdc

OUTPUT

parameter	conditions/description	min	typ	max	units
maximum capacitive load[1]				1200	µF
voltage accuracy	at full load, Vin nominal, see tolerance envelope curves			±5	%
line regulation	for Vin change of 1% measured from low to high line, full load		±1.2		%
load regulation	measured from 10~100% load		±12	±15	%
switching frequency	at Vin nominal	50	65	105	kHz

Note: 1. Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage.

SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output for 1 second		4,000		Vdc
isolation resistance	at 500 Vdc	1,000			MΩ
isolation capacitance				75	pF
safety approvals	UL/cUL (60950-1, 2nd Edition)				
MTBF	as per MIL-HDBK-217F, full load, 25°C as per MIL-HDBK-217F, full load, 85°C	850,000 123,000			hours hours
RoHS	2011/65/EU				

ENVIRONMENTAL

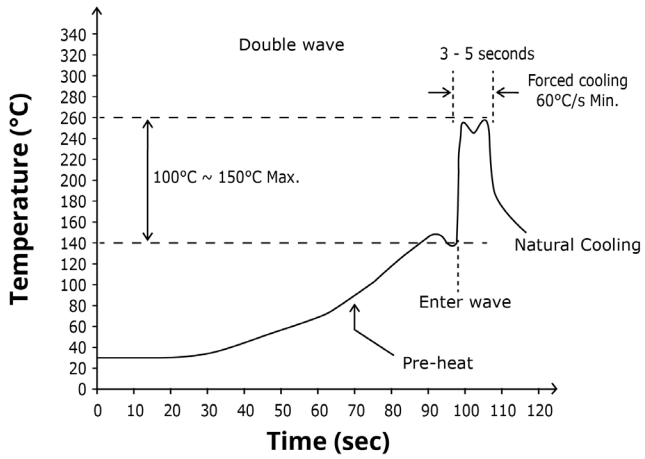
parameter	conditions/description	min	typ	max	units
operating temperature		-40		85	°C
storage temperature		-55		125	°C
operating humidity	non-condensing			95	%

SOLDERABILITY

parameter	conditions/description	min	typ	max	units
wave soldering	see wave solder profile			260	°C

Note: 2. The wave solder profile is measured on lead temperature.
3. Need to keep the solder parts internal temperature less than about 210°C.

WAVE SOLDERING PROFILE
(Lead-free)



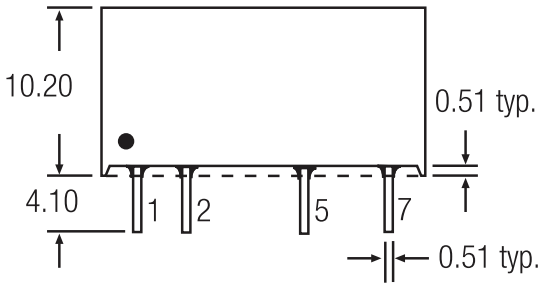
MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	19.60 x 7.05 x 10.20				mm
case material	non-conductive black plastic (UL94V-0)				
weight			2.7		g

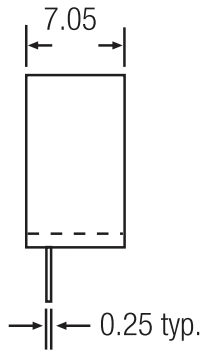
MECHANICAL DRAWING

units: mm
tolerance: X.X = ±0.5 mm
X.XX = ±0.25 mm

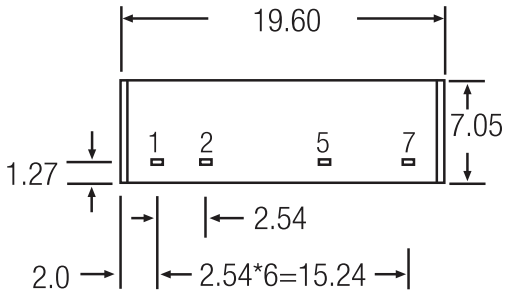
PIN CONNECTIONS	
PIN	Function
1	+Vin
2	-Vin
5	-Vout
7	+Vout



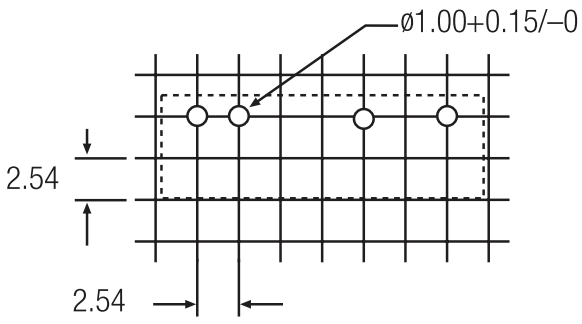
Front View



Side View



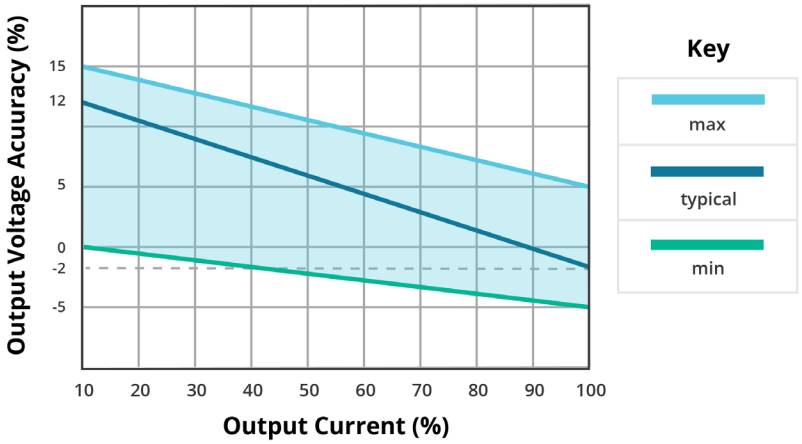
Bottom View



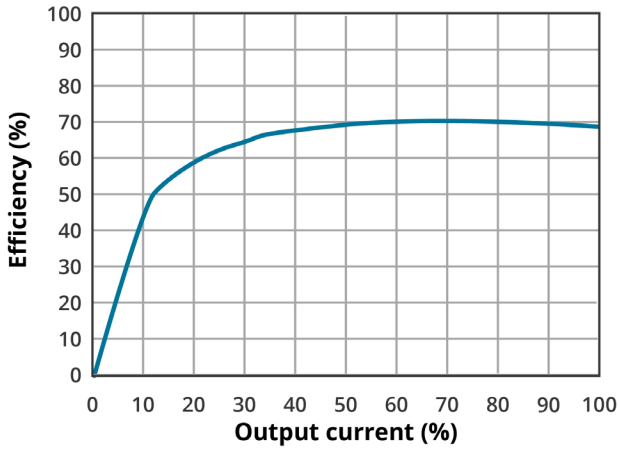
Recommended PCB Layout
Top View

PERFORMANCE CURVES

OUTPUT REGULATION CURVE (nominal input)



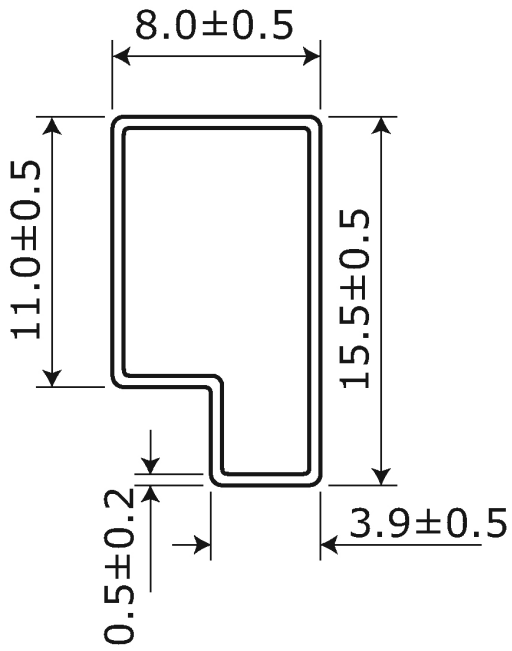
EFFICIENCY VS OUTPUT LOAD



PACKAGING

units: mm

Tube Size: 15.5 x 8 x 520 mm
QTY: 25 pcs



REVISION HISTORY

rev.	description	date
1.0	initial release	07/25/2016
1.01	company logo updated	03/30/2021
1.02	performance curves updated	07/08/2021

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.

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.