CUI INC
a bel group

SERIES: PQS075-S | DESCRIPTION: DC-DC CONVERTER

FEATURES

- 0.75W isolated output
- single regulated output
- high efficiency up to 74%
- continuous short circuit protection
- 1500 Vdc isolation
- EN 62368 approved
- meets UL 62368 standards

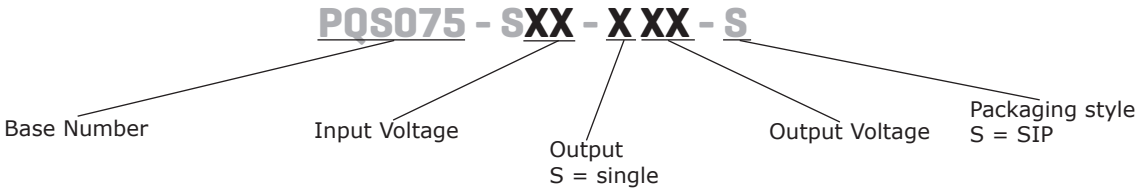
RoHS CE

MODEL

MODEL	input voltage		output voltage	output current		output power	ripple & noise[1]	efficiency
	typ (Vdc)	range (Vdc)	(Vdc)	min (mA)	max (mA)	max (W)	max (mVp-p)	typ (%)
PQS075-S5-S3-S	5	4.75~5.25	3.3	20	200	0.66	75	68
PQS075-S5-S5-S	5	4.75~5.25	5.0	15	150	0.75	75	72
PQS075-S5-S9-S	5	4.75~5.25	9.0	9	83	0.75	75	72
PQS075-S5-S12-S	5	4.75~5.25	12.0	7	62	0.74	75	73
PQS075-S5-S15-S	5	4.75~5.25	15.0	5	50	0.75	75	74
PQS075-S12-S3-S	12	11.4~12.6	3.3	20	200	0.75	100	68
PQS075-S12-S5-S	12	11.4~12.6	5	15	150	0.75	100	72
PQS075-S12-S12-S	12	11.4~12.6	12	7	62	0.75	100	73
PQS075-S12-S15-S	12	11.4~12.6	15	5	50	0.75	150	74
PQS075-S24-S3-S	24	22.8~25.2	3.3	20	200	0.75	100	68
PQS075-S24-S5-S	24	22.8~25.2	5	15	150	0.75	100	72
PQS075-S24-S12-S	24	22.8~25.2	12	7	62	0.75	100	73
PQS075-S24-S15-S	24	22.8~25.2	15	5	50	0.75	150	74

Notes: 1. Ripple and noise are measured at 20 MHz BW by "parallel cable" method.

PART NUMBER KEY



INPUT

parameter	conditions/description		min	typ	max	units
operating input voltage			4.75 11.4 22.8	5.0 12 24	5.25 12.6 25.2	Vdc Vdc Vdc
current	5 Vdc input full load / no load	3.3 Vdc, 5 Vdc output 9 Vdc, 12 Vdc output 15 Vdc output		209/5 208/12 202/18	221/10 221/20 215/30	mA mA mA
	12 Vdc input full load / no load	3.3 Vdc output 5 Vdc output 12 Vdc output 15 Vdc output		92/8 87/8 86/8 85/8	98/- 92/- 91/- 90/-	mA mA mA mA
	24 Vdc input full load / no load	3.3 Vdc output 5 Vdc output 12 Vdc output 15 Vdc output		46/8 44/8 43/8 43/8	51/- 48/- 47/- 46-	mA mA mA mA
filter	capacitance filter					

OUTPUT

parameter	conditions/description	min	typ	max	units
maximum capacitive load	3.3 Vdc output 5 Vdc output 9 Vdc output 12 Vdc output 15 Vdc output			2,400 2,400 1,000 560 560	µF µF µF µF µF
voltage accuracy				±3	%
line regulation				±0.25	%
load regulation	10%~100% load 3.3 Vdc output other outputs			 ±3 ±2	 % %
switching frequency	at full load, nominal input voltage		270		kHz
temperature coefficient	at full load		±0.02		%/°C

PROTECTIONS

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

SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output, for 1 minute with 1 mA max	1,500			Vdc
isolation resistance	input to output at 500 Vdc	1,000			MΩ
isolation capacitance	input to output, 100 kHz / 0.1 V		20		pF
safety approvals	EN/IEC 62368				
EMI/EMC	CISPR32/EN 55032 Class B (see recommended circuit)				
ESD	IEC/EN 61000-4-2 Air ±8kV, Contact ±4kV, perf. Criteria B				
MTBF	as per MIL-HDBK-217F, 25°C	3,500			K hours
RoHS	yes				

ENVIRONMENTAL

parameter	conditions/description	min	typ	max	units
operating temperature	see derating curve	-40		85	°C
storage temperature		-55		125	°C
storage humidity	non-condensing	0		95	%
vibration	10-155Hz, 5G, 30 min. along X, Y and Z				

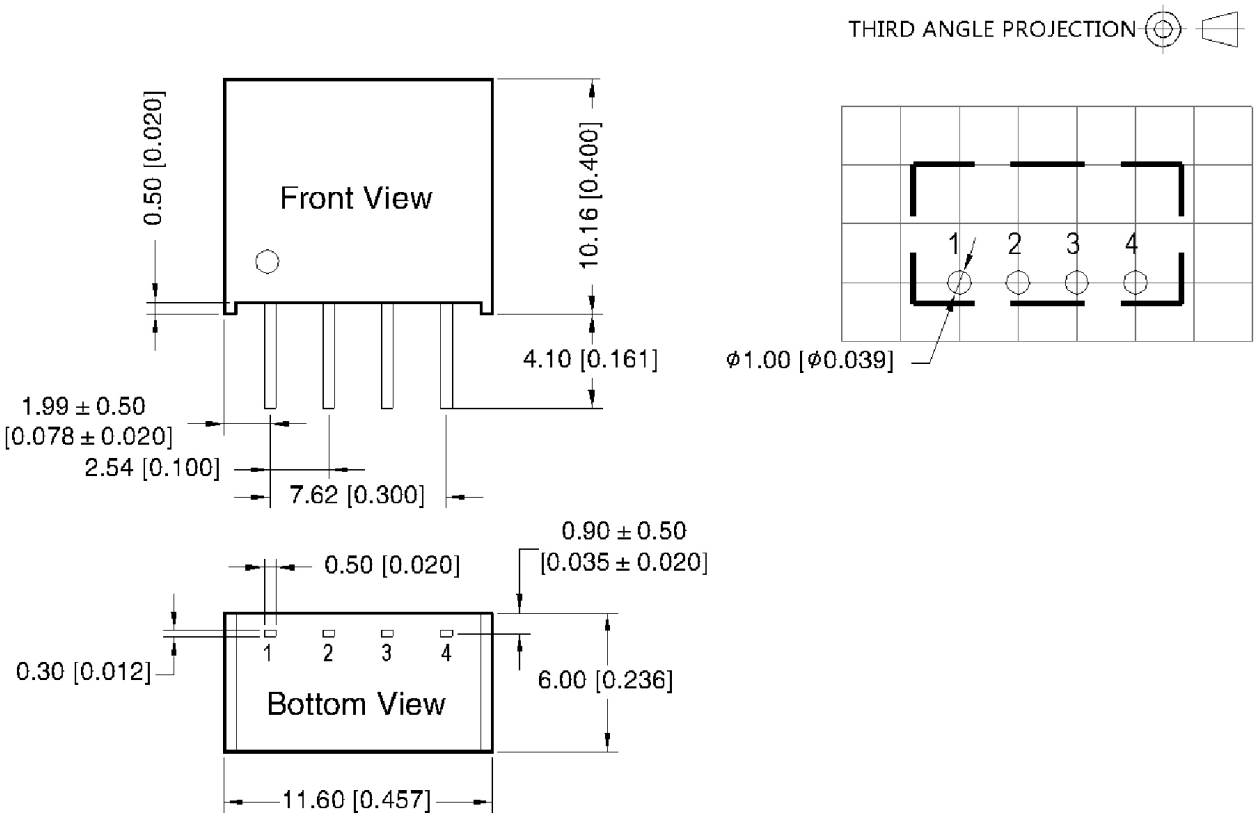
MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	11.60 x 6.00 x 10.16 [0.457 x 0.236 x 0.4 inch]				mm
case material	black plastic				
weight			1.3		g

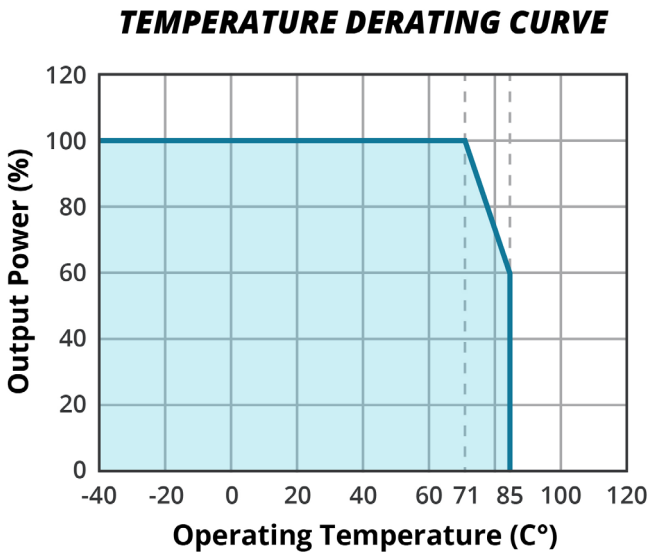
MECHANICAL DRAWING

units: mm [inch]
pin section tolerance: ±0.10[±0.004]
general tolerance: ±0.25[±0.010]

PIN Out	
PIN	Function
1	GND
2	Vin
3	0V
4	+Vo



DERATING CURVES



APPLICATION CIRCUIT

Figure 1

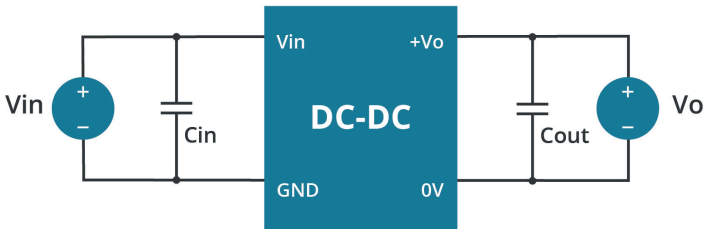


Table 1

Vin (Vdc)	Cin (µF / V)	Vo (Vdc)	Cout (µF / V)
5	4.7µF	3.3/5	10µF
--	--	9/12	2.2
--	--	15	1
12	2.2µF /25	3.3/5	10µF/16V
24	1µF/50V	12	2.2µF/25V
--	--	15	1µF/25V

EMC RECOMMENDED CIRCUIT

Figure 2

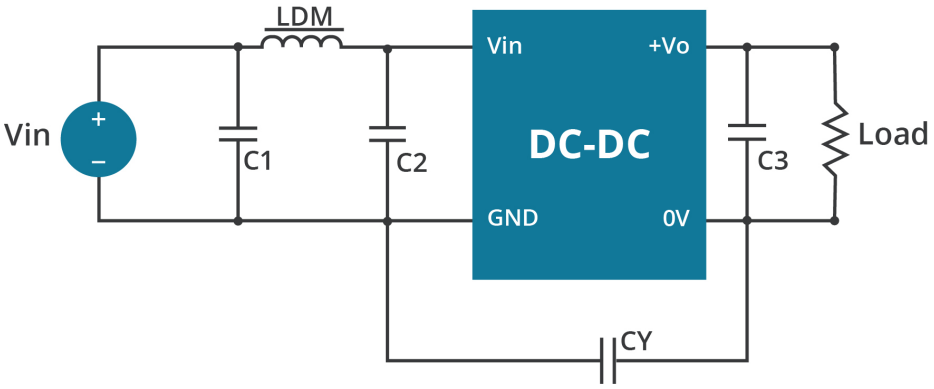


Table 2

Input voltage 5 Vdc	Output voltage (Vdc)		3.3/5/9	12/15
	EMI	C1/C2	4.7µF/25V	
		CY	--	1nF/4KVdc Vishay HGZ10102MBP TDK CD45-E2GA102M-GKA
		C3	Refer to the Cout in table 1	
		LDM	6.8µH	
Input voltage 12, 24 Vdc		C1/C2	4.7µF/50V	
		CY	270pF/2kV	
		C3	Refer to the Cout in table 1	
		LDM	6.8µH	

REVISION HISTORY

rev.	description	date
1.0	initial release	08/17/2020
1.01	mechanical tolerances updated	09/22/2020
1.02	derating curve and circuts updated	06/29/2021
1.03	datasheet updated	09/08/2021

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

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