

PART NUMBER: PTK15 series

DESCRIPTION: dc-dc converter

features

- industry standard pin out
- wide 4:1 input range
- fully isolated
- output voltage trimmable
- output on/off control
- over-current protection
- over-voltage protection
- six-sided EMI shielding
- constant switching frequency
- high efficiency
- compact size 2.0"x2.0"x0.4"
- 3 year warranty



model ¹ number	output power (max)	input voltage	output voltage	output current (max)	ripple & noise ² mV P-P	efficiency (typ.)
PTK15-Q24-S3	13.2W	10-36VDC	3.3VDC	4.0A	75	80%
PTK15-Q24-S5	15.0W	10-36VDC	5VDC	3.0A	75	85%
PTK15-Q24-S12	15.0W	10-36VDC	12VDC	1.25A	120	86%
PTK15-Q24-S15	15.0W	10-36VDC	15VDC	1.0A	150	84%
PTK15-Q24-D5	15.0W	10-36VDC	±5VDC	1.5A	50/50	85%
PTK15-Q24-D12	15.0W	10-36VDC	±12VDC	0.625A	120/120	87%
PTK15-Q24-D15	15.0W	10-36VDC	±15VDC	0.5A	150/150	87%
PTK15-Q24-T312	12.39W	10-36VDC	3.3VDC/±12VDC	2.0A/0.31A	50/120/120	83%
PTK15-Q24-T512	15.0W	10-36VDC	5VDC/±12VDC	1.5A/0.31A	50/120/120	84%
PTK15-Q24-T315	12.45W	10-36VDC	3.3VDC/±15VDC	2.0A/0.25	50/150/150	83%
PTK15-Q24-T515	15.0W	10-36VDC	5VDC/±15VDC	1.5A/0.25A	50/150/150	84%
PTK15-Q48-S3	13.2W	20-72VDC	3.3VDC	4.0A	75	80%
PTK15-Q48-S5	15.0W	20-72VDC	5VDC	3.0A	75	85%
PTK15-Q48-S12	15.0W	20-72VDC	12VDC	1.25A	120	87%
PTK15-Q48-S15	15.0W	20-72VDC	15VDC	1.0A	150	87%
PTK15-Q48-D5	15.0W	20-72VDC	±5VDC	1.5A	50/50	85%
PTK15-Q48-D12	15.0W	20-72VDC	±12VDC	0.625A	120/120	86%
PTK15-Q48-D15	15.0W	20-72VDC	±15VDC	0.5A	150/150	87%
PTK15-Q48-T312	12.39W	20-72VDC	3.3VDC/±12VDC	2.0A/0.31A	50/120/120	83%
PTK15-Q48-T512	15.0W	20-72VDC	5VDC/±12VDC	1.5A/0.31A	50/120/120	84%
PTK15-Q48-T315	12.45W	20-72VDC	3.3VDC/±15VDC	2.0A/0.25A	50/150/150	83%
PTK15-Q48-T515	15.0W	20-72VDC	5VDC/±15VDC	1.5A/0.25A	50/150/150	84%

NOTE: 1. All models are also available in an extended temperature range of -40°C~85°C. For these models, append "M" to the model number, e.g. PTK15-Q48-S5M.

2. Ripple & noise measured with a 20MHz bandwidth, off a 10uF electrolytic and a 0.1uF ceramic cap in parallel at the output.



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INPUT

parameter	conditions/description	min	nom	max	units
input voltage range		10	24	36	VDC
		20	48	72	VDC
remote on/off control	output turn-on ³	2.5V	(open)	5.5V	
	output turn-off	0V	(short)	0.8V	
switching frequency	constant		250		KHz

NOTE: 3 output defaults to "on" when there is no connection to the "CNT" pin.

OUTPUT

parameter	conditions/description	min	nom	max	units
output trim range	with external trim resistors	-5%		+5%	
set point accuracy	single output	-2%		+2%	
	dual output	-3%		+3%	
line regulation (low line to high line)	single output models	-0.25%		+0.25%	
	dual output models	-2.5%		+2.5%	
	triple: main output (Vout)	-0.25%		+0.25%	
	auxiliary outputs (+Vaux / -Vaux)	-5%		+5%	
load regulation	single output models- no load to full load	-0.25%		+0.25%	
	dual output models- balanced loads	-2.5%		+2.5%	
	triple: main output (Vout)	-0.25%		+0.25%	
	auxiliary outputs (+Vaux / -Vaux)- with 10% load on Vout and balanced loads on +Vaux and -Vaux	-5%		+5%	
minimum load	converters will not be damaged if loading conditions are less than minimum specified loads, but regulation specs may not be met ⁴				
ripple and noise	see chart				

NOTE: 4 single output: no min. load required, dual: 10%, triple: balanced loads.

PROTECTION

parameter	conditions/description	min	nom	max	units
over-current	continuous auto recovery ⁵	105%		135%	
over-voltage	internally zener clamped ⁵	110%		140%	

NOTE: 5 continuous operation in a protected state may compromise long-term reliability.

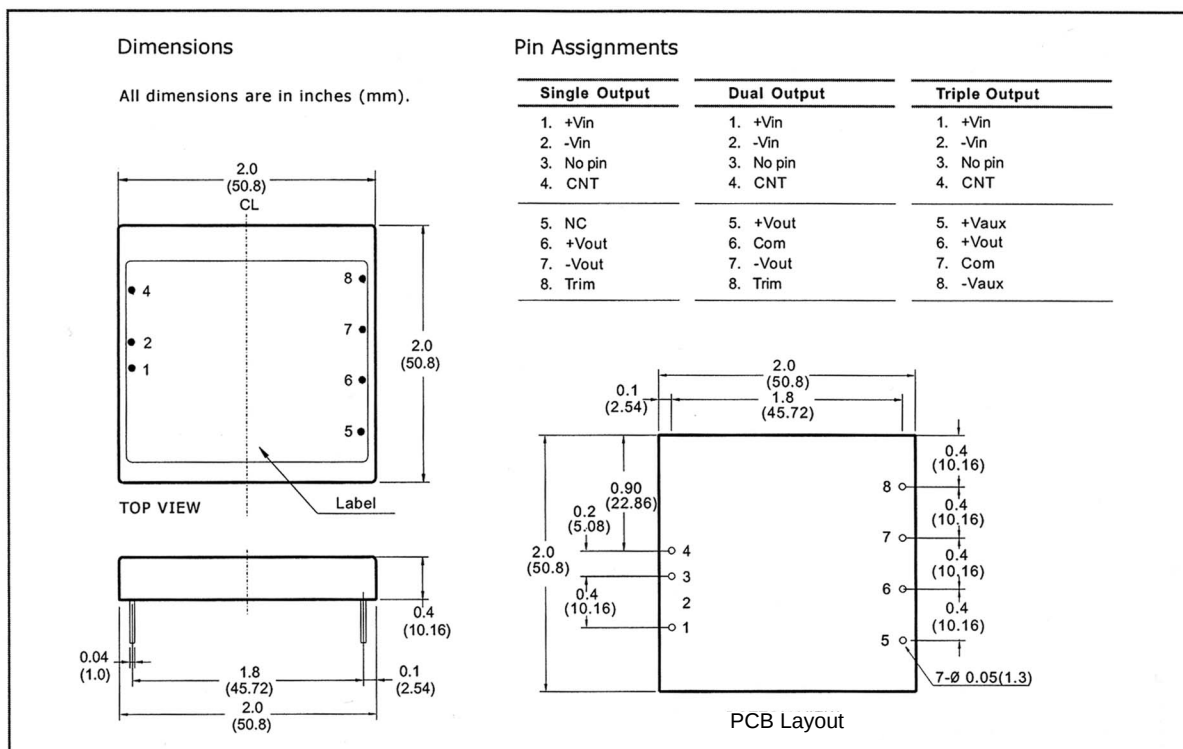
GENERAL

parameter	conditions/description	min	nom	max	units
efficiency	typical at full load	78%		83%	
isolation voltage	input/case, input/output, output/case	500			VAC
insulation resistance	at 500 VDC	100M			Ohms
agency standards	approved to UL60950(E222889), CSA C22.2 No. 60950, TUV EN60950 (single output only)				
case material			Zn		
material flammability		94 V-0			
weight			75		grams
			(2.65)		(ounces)
MTBF	MIL-HDBK-217F		470k		hours
operating temperature	regular models - see derating curve.	-20		+71	°C
	extended temperature models	-40		+85	°C
storage temperature		-40		+105	°C
humidity	operating (non-condensing)	5%		95%	RH
washability	not intended for aqueous wash				

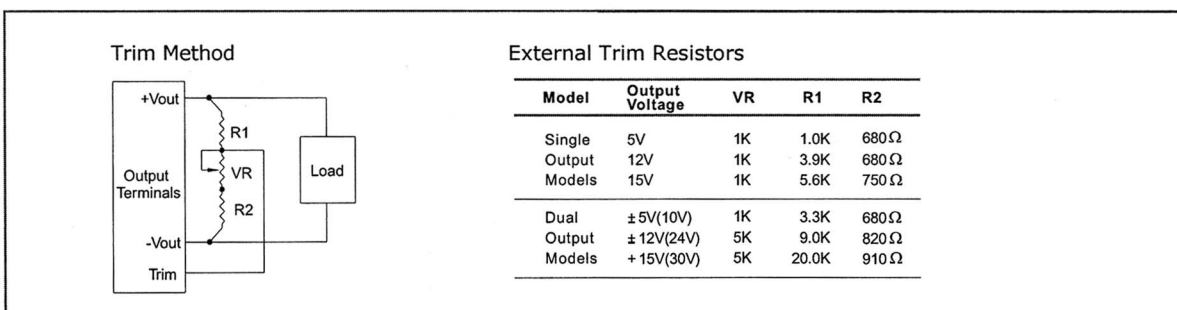
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DIMENSIONS (mm)



TRIM METHOD



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PIN DEFINITIONS

PIN Definitions

+Vin:	Input positive terminal
-Vin:	Input negative terminal
CNT:	Remote On/Off control of output voltage. Referenced to -Vin
+Vout:	Main output positive terminal
-Vout:	Output negative terminal
+Vaux:	Positive auxiliary output
-Vaux:	Negative auxiliary output
Com:	Common node for dual- or triple-output models
Trim:	For trimming output voltage on single- or dual-output models

DERATING CURVES

