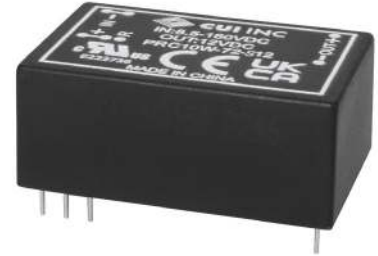


SERIES: PRC10W | **DESCRIPTION:** DC-DC CONVERTER

FEATURES

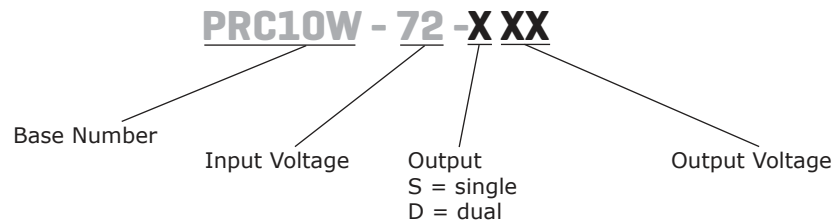
- 10W isolated output
- ultra-wide 18:1 input range (8.5~160 Vdc)
- single/dual regulated outputs
- 4,200 Vdc isolation
- over voltage, over current, short circuit, UVLO protection
- certified to IEC/BS EN/UL 62368-1
- meets EN 50155 with external circuit
- reinforced insulation



MODEL	input voltage		output voltage	output current		output power	ripple & noise ¹	efficiency ²
	typ (Vdc)	range (Vdc)	(Vdc)	min (mA)	max (mA)	max (W)	max (mVp-p)	typ (%)
PRC10W-72-S5	72	8.5 ~ 160	5	0	2,000	10	100	84
PRC10W-72-S12	72	8.5 ~ 160	12	0	835	10	100	88
PRC10W-72-S15	72	8.5 ~ 160	15	0	668	10	100	88
PRC10W-72-D5	72	8.5 ~ 160	±5	0	±1,000	10	100	83
PRC10W-72-D12	72	8.5 ~ 160	±12	0	±416	10	100	87
PRC10W-72-D15	72	8.5 ~ 160	±15	0	±333	10	100	87

Notes: 1. Measured at 5Hz to 20MHz bandwidth, peak to peak.
2. At nominal input voltage 72Vdc.

PART NUMBER KEY



INPUT

parameter	conditions/description	min	typ	max	units
operating input voltage		8.5	72	160	Vdc
surge voltage	for maximum of 100 ms			200	Vdc
input undervoltage lockout	turn-on voltage treshold at 80% load	8.2	9	9.5	Vdc
	turn-off voltage treshold at 80% load	6.9	7.5	8.0	Vdc
	lockout hysteresis voltage at 80% load		1.5		Vdc
current	Vin = 12V, full load Vin = 8.5V, 80% load			1.3	A
input filter	LC filter				
inrush current (I ² t)	as per ETS300 132-2			0.1	A ² s
input reflected ripple current	P-P thru 12uH inductor, 5Hz to 20MHz		30		mA
CTRL	module on: CTRL pin open or pulled high (3.5~160 Vdc) module off: CTRL pin pulled low to GND (0~1.2 Vdc) CTRL pin current when pulled low		0.4	1	mA

OUTPUT

parameter	conditions/description	min	typ	max	units
maximum capacitive load	5 Vdc output			2,000	μF
	12 Vdc output			835	μF
	15 Vdc output			668	μF
	±5 Vdc output			1,000	μF
	±12 Vdc output			416	μF
	±15 Vdc output			333	μF
voltage accuracy	Vin = 72V, full load, 25°C			±1	%
output voltage balance	Vin = 72V, full load, 25°C, dual models only			±1	%
line regulation	input voltage from low to high, full load			±0.2	%
load regulation	0%~100% load single output models			±0.5	%
	dual output models			±1	%
cross regulation	load cross variation 25%/100%, dual output models			±5	%
switching frequency		230	255	280	kHz
transient recovery time	75% to 100% load step change, 0.1 A/us, within 1% nominal input voltage			250	μs
transient response deviation	75% to 100% load step change, 0.1 A/us			±5	%
temperature coefficient	40°C to 100°C			±0.02	%/°C

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	zener clamp, single output only				
	5 Vdc output		6.2		Vdc
	12 Vdc output		15		Vdc
	15 Vdc output		18		Vdc
over current protection	auto recovery, hiccup	110	150	180	%
short circuit protection	continuous, auto recovery				

SAFETY AND COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output, for 1 minute			3,000	Vac
				4,200	Vdc
isolation resistance	input to output	1,000			MΩ
isolation capacitance	input to output, 100kHz / 0.25V		16		pF
safety approvals	certified to 62368: IEC, BS EN, UL designed to meet 50155: EN designed to meet 45545-2: EN				
conducted emissions	EN55032 and EN50155 Compliant (with external filter)				
radiated emissions	EN55032 and EN50155 Compliant (with external filter)				
ESD	EN 61000-4-2 Level 3: Air ±8kV, Contact± 6kV, perf. Criteria A				
radiated immunity	EN 61000-4-3 Level 3: 80~1000MHz, 20 V/m, perf. Criteria A				
EFT/burst	EN61000-4-4 Level 3: On power input port, ±2kV, external input capacitor required, perf. Criteria A				
surge	EN 61000-4-5 Level 4: Line to earth, ±4kV, line to line, ±2kV, perf. Criteria A				
conducted immunity	EN 61000-4-6 Level 3: 0.15~80MHz, 10V, perf. Criteria A				
voltage dips and interruptions	EN 50155 Class S3: 20ms interruptions, perf. Criteria A				
MTBF	as per MIL-HDBK-217F, 25°C				
	5 Vdc output		1,654		K hours
	12 Vdc output		2,295		K hours
	15 Vdc output		2,363		K hours
	±5 Vdc output		1,664		K hours
	±12 Vdc output		2,093		K hours
	±15 Vdc output		2,335		K hours
RoHS	yes				

ENVIRONMENTAL

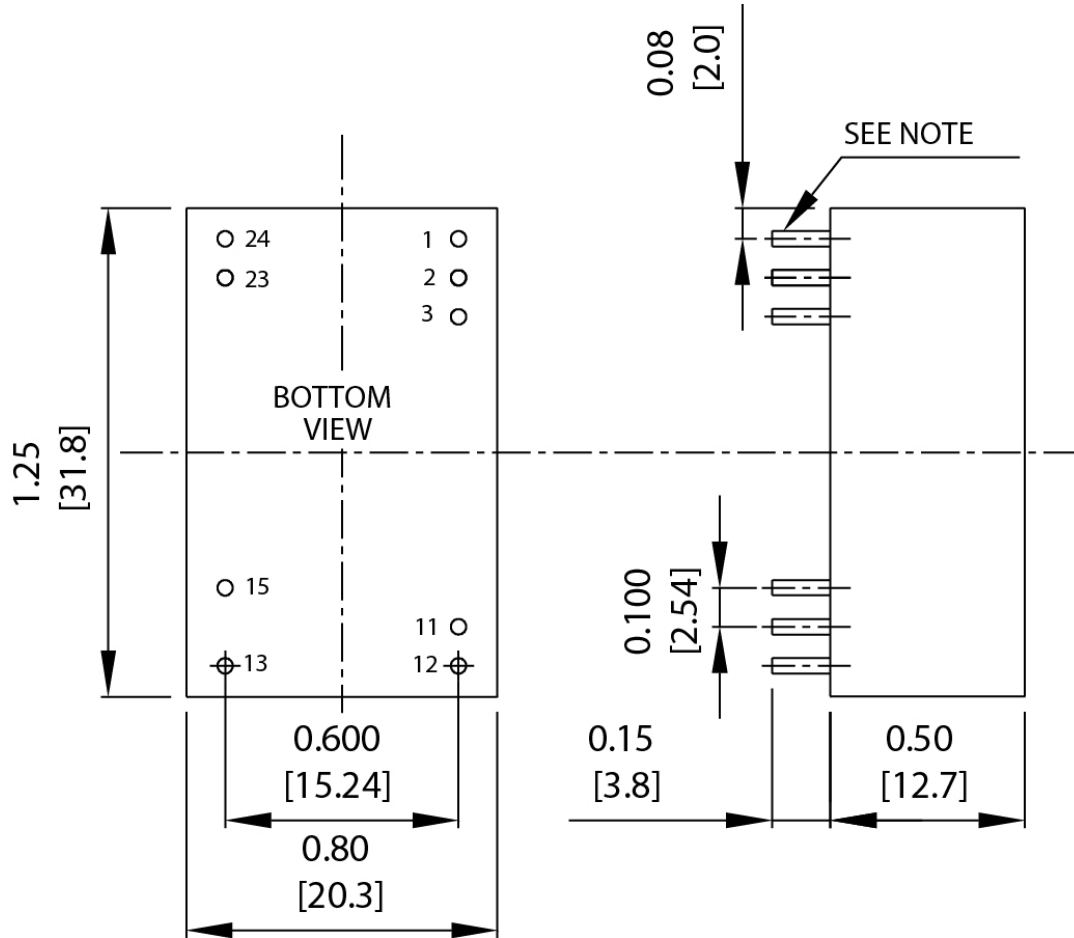
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curve	-40		100	°C
storage temperature		-55		125	°C
storage humidity	non-condensing			95	%

MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	31.8 x 20.3 x 12.7 [1.25 x 0.80 x 0.50 inch]				mm
weight			16		g
case material	plastic, DAP, UL 94V-0				
base material	plastic, LCP, UL 94V-0				
potting material	UL 94V-0				
pin material	base: copper plated steel wire plating: tin				
cooling method	natural convection				

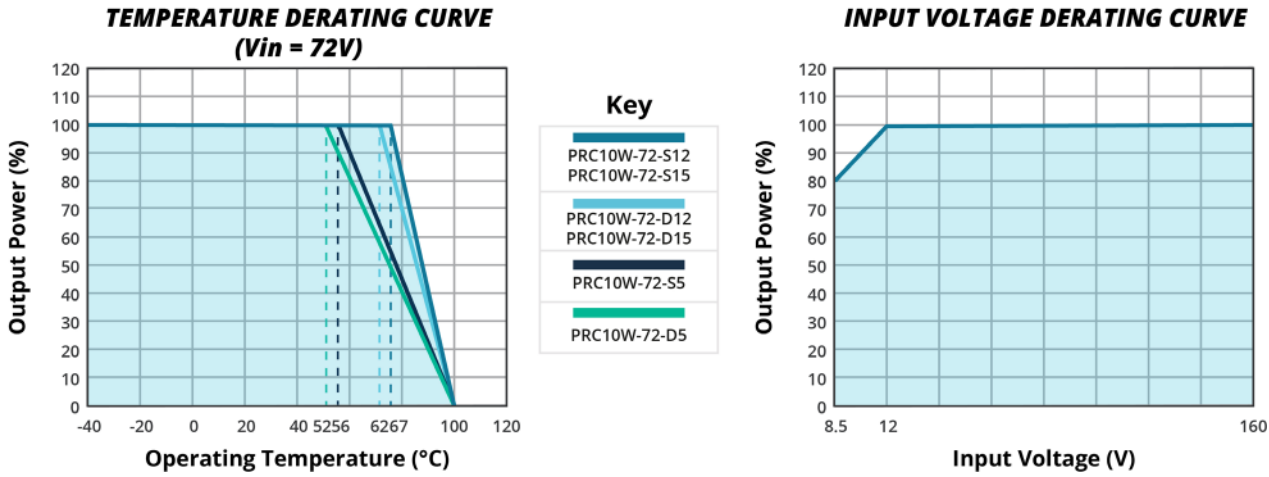
MECHANICAL DRAWING

units: inch [mm]
 pin size diameter: 0.02±0.002 inch (0.5±0.05mm)
 general tolerance: inches: x.xx = ±0.02, x.xxx = ±0.010
 mm: x.x = ±0.5, x.xx = ±0.25

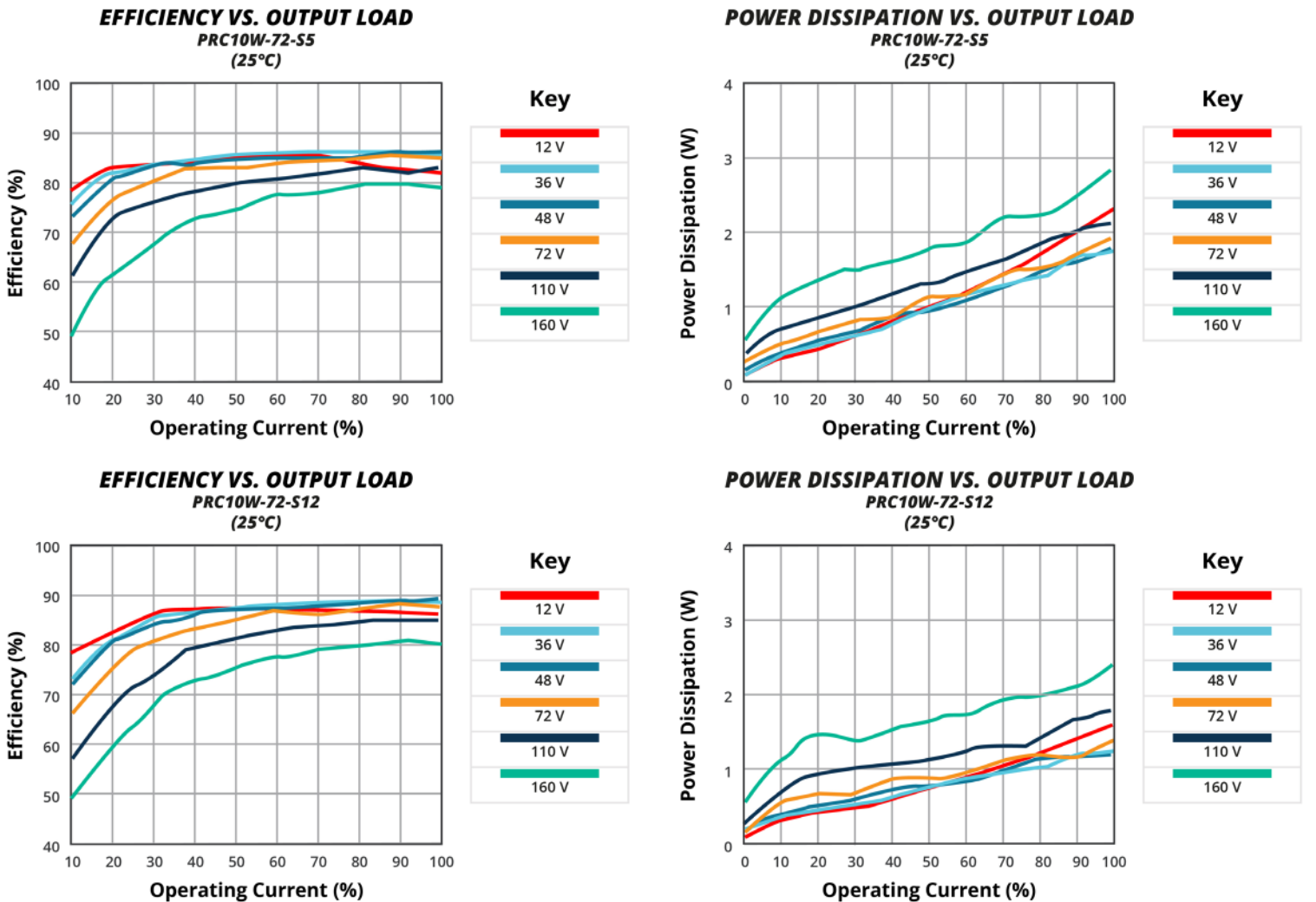


Pin Out		
PIN	Single outputs	Dual outputs
1	+Vin	+Vin
2	+Vin	+Vin
3	Remote on/off	Remote on/off
11	NP	Common
12	-Vout	NP
13	+Vout	-Vout
15	NP	+Vout
23	-Vin	-Vin
24	-Vin	-Vin

DERATING CURVE

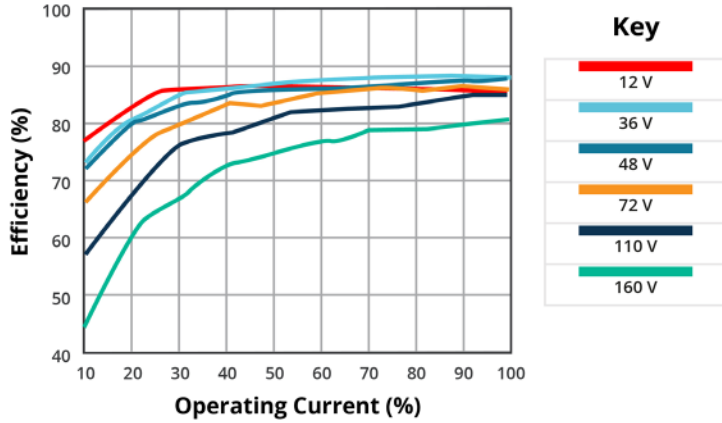


EFFICIENCY CURVES

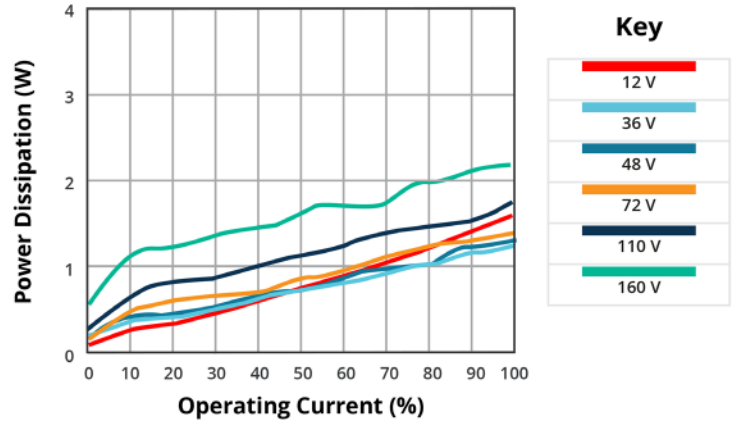


EFFICIENCY CURVES (CONTINUED)

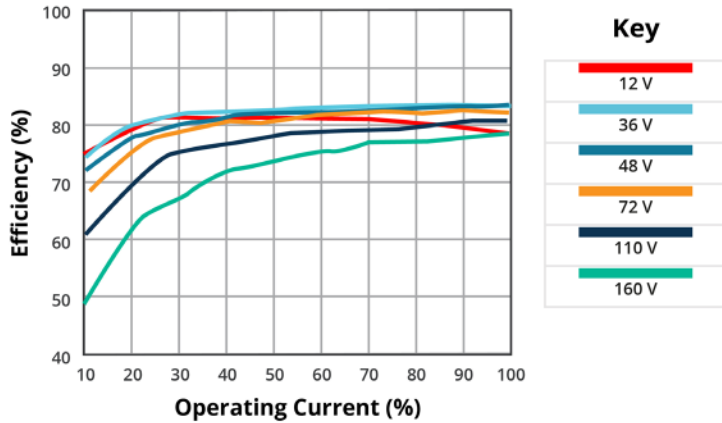
EFFICIENCY VS. OUTPUT LOAD
PRC10W-72-S15
 (25°C)



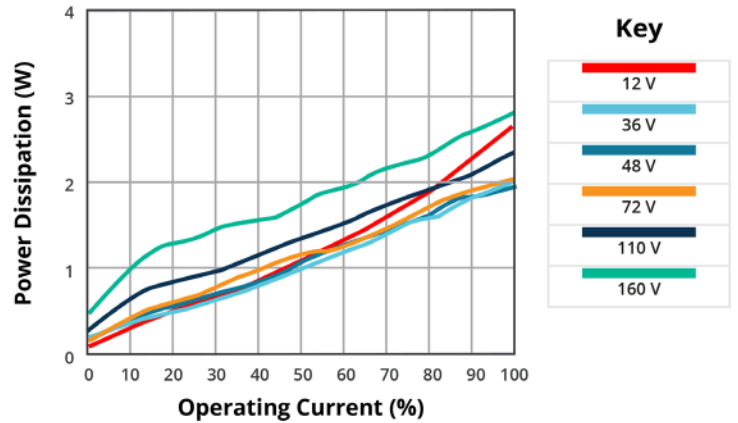
POWER DISSIPATION VS. OUTPUT LOAD
PRC10W-72-S15
 (25°C)



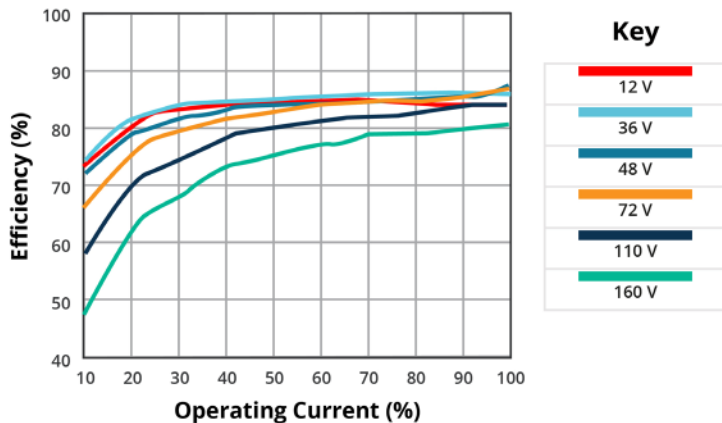
EFFICIENCY VS. OUTPUT LOAD
PRC10W-72-D5
 (25°C)



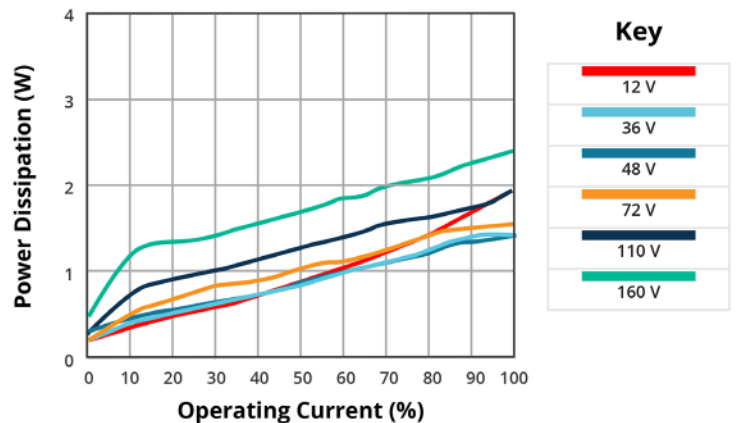
POWER DISSIPATION VS. OUTPUT LOAD
PRC10W-72-D5
 (25°C)



EFFICIENCY VS. OUTPUT LOAD
PRC10W-72-D12
 (25°C)

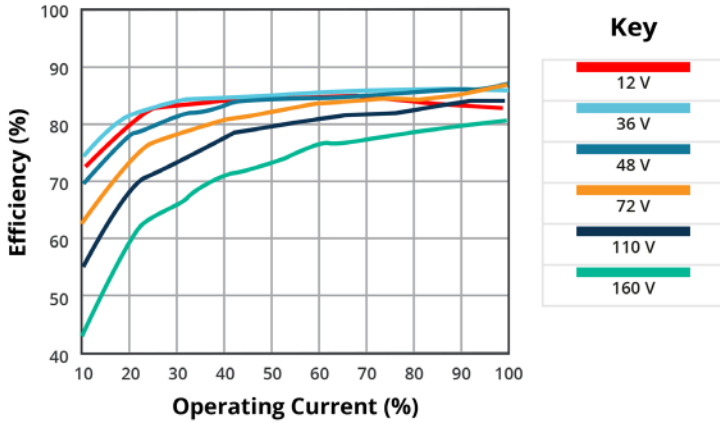


POWER DISSIPATION VS. OUTPUT LOAD
PRC10W-72-D12
 (25°C)

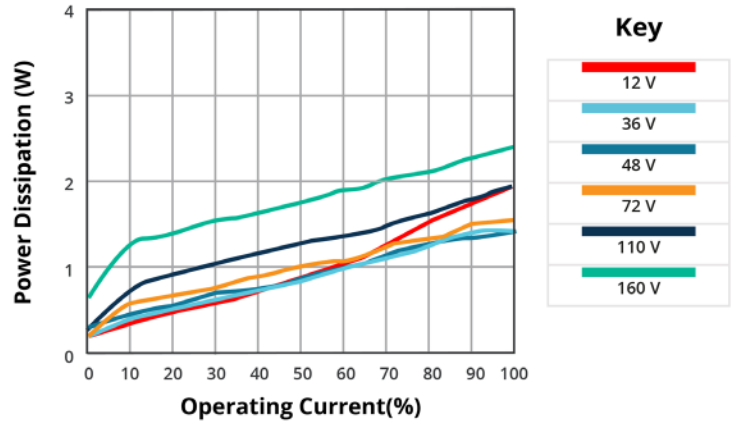


EFFICIENCY CURVES (CONTINUED)

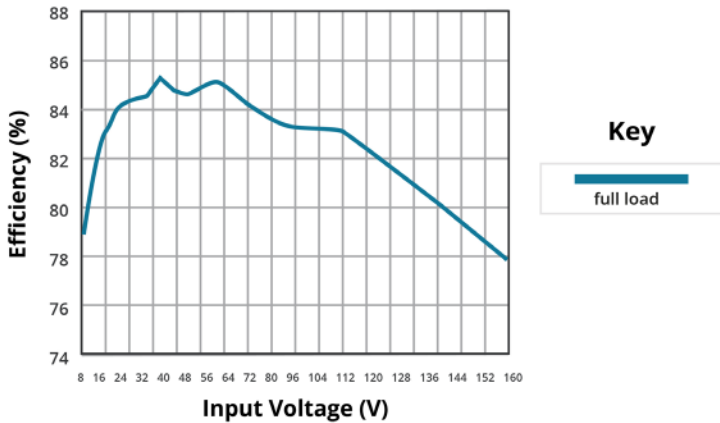
EFFICIENCY VS. OUTPUT LOAD
PRC10W-72-D15
 (25°C)



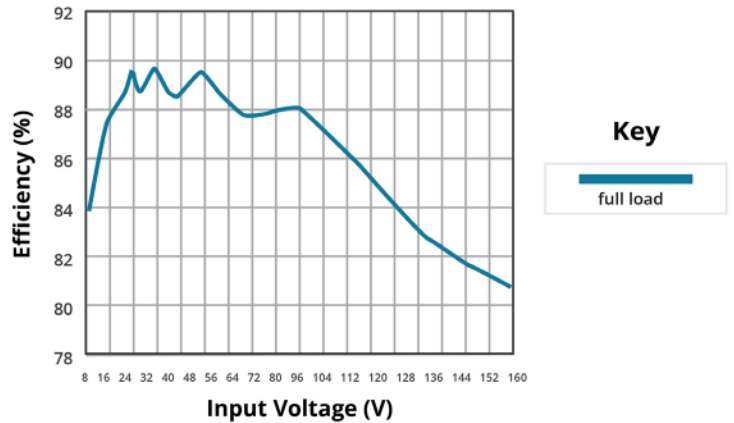
POWER DISSIPATION VS. OUTPUT LOAD
PRC10W-72-D15
 (25°C)



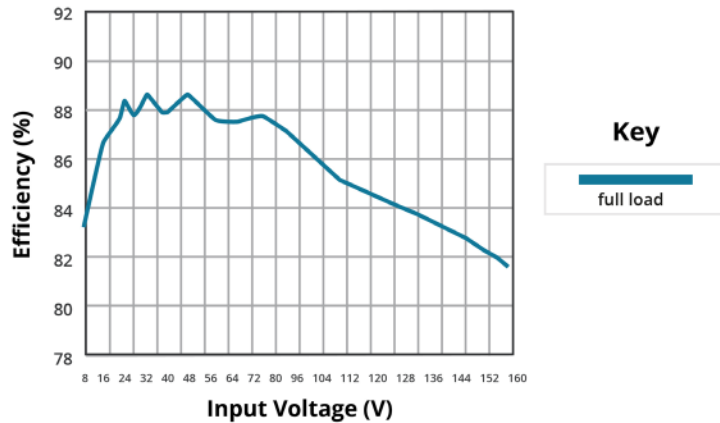
EFFICIENCY VS. INPUT VOLTAGE
PRC10W-72-S5
 (25°C)



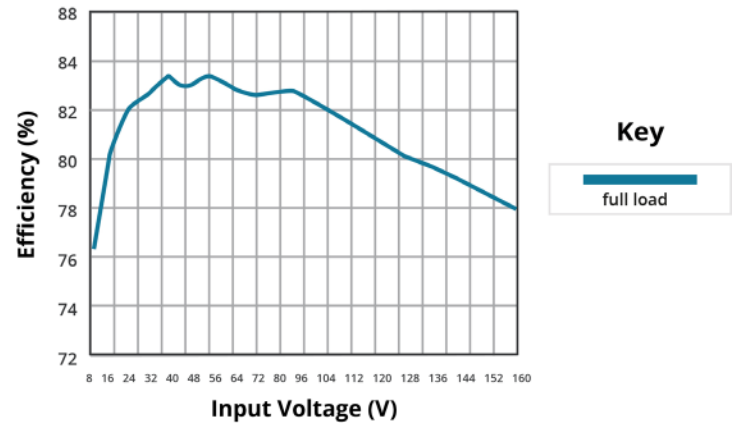
EFFICIENCY VS. INPUT VOLTAGE
PRC10W-72-S12
 (25°C)



EFFICIENCY VS. INPUT VOLTAGE
PRC10W-72-S15
 (25°C)

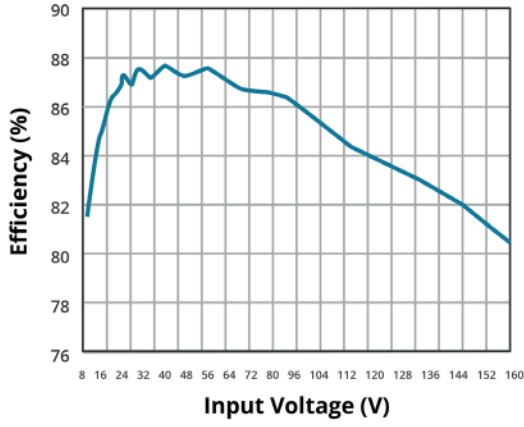


EFFICIENCY VS. INPUT VOLTAGE
PRC10W-72-D5
 (25°C)



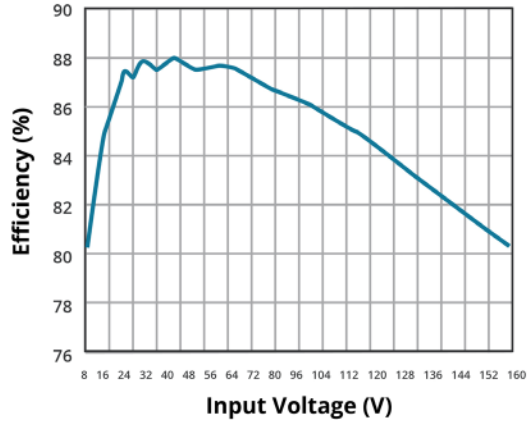
EFFICIENCY CURVES (CONTINUED)

EFFICIENCY VS. INPUT VOLTAGE
PRC10W-72-D12
(25°C)



Key
full load

EFFICIENCY VS. INPUT VOLTAGE
PRC10W-72-D15
(25°C)



Key
full load

REVISION HISTORY

rev.	description	date
1.0	initial release	12/19/2022
1.01	safeties updated	01/16/2023

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



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