



50-65 WATT SWITCHING POWER SUPPLIES

DESCRIPTION

The PU65 series of compact, open PCB constructed, AC-DC switching power supplies are capable of delivering 50 to 65 watts of continuous output power. They operate at 85 to 264VAC input voltage without the need of voltage selection. They are ideally suited for use in today's CRT terminals, disc drive systems, microprocessor based systems, portable equipment and many other applications. All models meet the safety requirements of UL, CSA and IEC.

FEATURES

- Recognized or certified by UL, CSA and TÜV
- Small size, light weight
- 100% burn-in
- Wide input range 85 to 264VAC
- Input surge current protection
- Overvoltage protection
- Overcurrent protection
- Compliant with RoHS requirements

INPUT SPECIFICATIONS

Input voltage :	85 to 264VAC
Input frequency :	47 to 63Hz
Input current :	1.60A (rms) for 115VAC 1.00A (rms) for 230VAC
Earth leakage current: (Touch current)	0.47mA max. @ 115VAC, 60Hz 0.85mA max. @ 230VAC, 50Hz

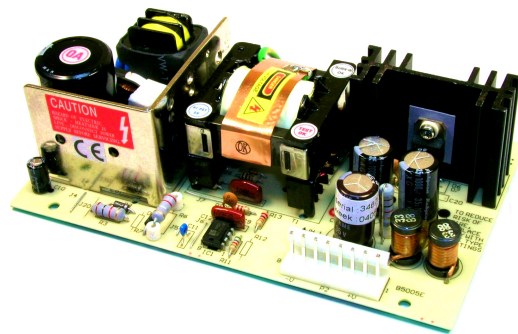
OUTPUT SPECIFICATIONS

Output voltage/current :	See rating chart
Total output power :	65 watts maximum
Ripple and noise :	1% peak to peak maximum
Overvoltage protection :	Provided on output #1 only; set at 112-132% of its nominal output voltage
Overcurrent protection :	All outputs protected to short circuit conditions
Temperature coefficient :	All outputs $\pm 0.04\%$ / $^{\circ}\text{C}$ maximum
Transient response :	Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500us after a 25% step load change

ENVIRONMENTAL SPECIFICATIONS

Operating temperature :	0 $^{\circ}\text{C}$ to +70 $^{\circ}\text{C}$
Storage temperature :	-40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$
Relative humidity :	5% to 95% non-condensing
Derating :	Derate from 100% at +50 $^{\circ}\text{C}$ linearly to 50% at +70 $^{\circ}\text{C}$

PU65 SERIES



Safety Standard Approvals :



UL 60950-1
File No. E137410



CSA C22.2 No. 60950-1
File No. LR93632



TÜV EN60950-1
Certificate No. R9172041

GENERAL SPECIFICATIONS

Switching frequency:	32KHz \pm 5KHz
Efficiency:	70% minimum on single output models with $V_o \geq 12\text{V}$, 65% minimum on the others
Hold-up time:	10 msec minimum at 110VAC
Line regulation:	$\pm 0.5\%$ maximum at full load
Inrush current:	15 amps @ 115VAC or 30 amps @ 230VAC, at 25 $^{\circ}\text{C}$ cold start
Withstand voltage:	3000VAC from input to output 1500VAC from input to ground 500VAC from output to ground
MTBF:	400,000 hours minimum at full load at 25 $^{\circ}\text{C}$ ambient, calculated per MIL-HDBK-217F
EMC Performance (EN55024)	
EN55022:	Class B conducted, class B radiated
FCC:	Class B conducted, class B radiated
VCCI:	Class B conducted, class B radiated
EN61000-3-2:	Harmonic distortion, class A
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, $\pm 8\text{KV}$ air and $\pm 4\text{KV}$ contact
EN61000-4-3:	Radiated immunity, 3V/m
EN61000-4-4:	Fast transient/burst, $\pm 1\text{KV}$
EN61000-4-5:	Surge, $\pm 1\text{KV}$ diff., $\pm 2\text{KV}$ com.
EN61000-4-6:	Conducted immunity, 3Vrms
EN61000-4-8:	Magnetic field immunity, 1A/m
EN61000-4-11:	Voltage dips, 30% reduction for 500ms and $>95\%$ reduction for 10ms

UNIVERSAL INPUT

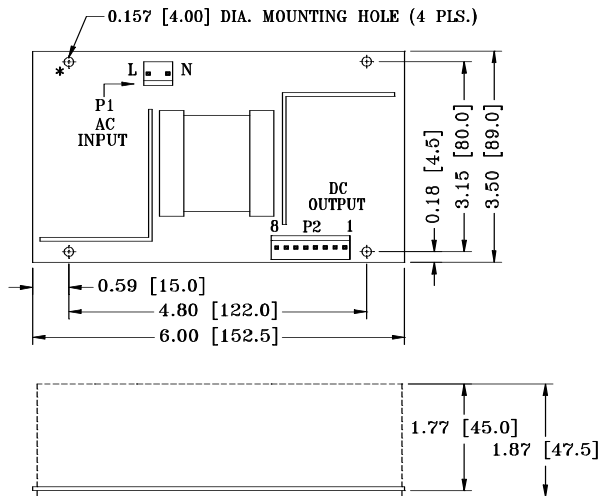
PU65 SERIES

OUTPUT VOLTAGE/CURRENT RATING CHART

(1)(2) MODEL	Output #1				Output #2				Output #3				Output #4				Maximum Output Power
	Vnom.	Imin.	I _{max.}	Tol.	Vnom.	Imin.	I _{max.}	Tol.	Vnom.	Imin.	I _{max.}	Tol.	Vnom.	Imin.	I _{max.}	Tol.	
PU65-10	5V	0A	10A	2%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	50W
PU65-12	12V	0A	5.5A	1%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	65W
PU65-13	15V	0A	4.5A	1%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	65W
PU65-14	24V	0A	3.0A	1%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	65W
PU65-23	+5V	1A	6.0A	3%	+12V	0.5A	3.0A	5%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	65W
PU65-24	+5V	1A	6.0A	3%	+15V	0.4A	3.0A	5%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	65W
PU65-25	+5V	1A	6.0A	3%	+24V	0.3A	2.0A	5%	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	65W
PU65-30	+5V	1A	6.0A	3%	+12V	0.5A	3.0A	5%	-5V	0.1A	0.5A	10%	(N/A)	(N/A)	(N/A)	(N/A)	65W
PU65-31	+5V	1A	6.0A	3%	+12V	0.5A	3.0A	5%	-12V	0.1A	0.5A	10%	(N/A)	(N/A)	(N/A)	(N/A)	65W
PU65-32	+5V	1A	6.0A	3%	+15V	0.4A	3.0A	5%	-15V	0.1A	0.5A	10%	(N/A)	(N/A)	(N/A)	(N/A)	65W
PU65-33	+5V	1A	6.0A	3%	+15V	0.4A	3.0A	5%	-12V	0.1A	0.5A	10%	(N/A)	(N/A)	(N/A)	(N/A)	65W
PU65-35-1	+5V	1A	2.0A	3%	+24V	0.3A	1.2A	5%	-24V	0.2A	1.0A	10%	(N/A)	(N/A)	(N/A)	(N/A)	65W
PU65-39	+5V	1A	6.0A	3%	+24V	0.3A	2.0A	5%	-12V	0.1A	0.5A	10%	(N/A)	(N/A)	(N/A)	(N/A)	65W
PU65-40	+5V	1A	6.0A	3%	+12V	0.5A	3.0A	5%	-12V	0.1A	0.5A	10%	-5V	0.1A	0.50A	10%	65W
PU65-45-1	+5V	1A	6.0A	3%	+15V	0.2A	1.0A	5%	+25V	0.1A	0.75A	10%	-12V	0.1A	1.0A	10%	65W

- NOTES: 1. All multiple output models may be operated at no-load without damage. At no-load, output voltage tolerance increases to 10%.
2. Safety agency approvals are for the above listed models in PCB format. To order a model with a metallic L-bracket or box, add suffix "B" for L-bracket format or "C" for enclosed format to the model number (mechanical details shown in [page 7-2](#)), e.g. PU65-25C.

MECHANICAL SPECIFICATIONS



NOTES:

- Dimensions shown in inch [mm]
- Tolerance 0.02 [0.5] maximum
- Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal.
- Output connector mates with Molex housing 09-50-3081 and Molex 2878 series crimp terminal.
- Weight: 400 grams (PCB format).
- The "*" marked mounting hole is for system grounding through a metallic stand-off to the system chassis.

PIN CHART

MODEL	PIN	1	2	3	4	5	6	7	8
PU65-10 PU65-12 PU65-13 PU65-14	PU65-12 PU65-14	OUTPUT #1	OUTPUT #1	OUTPUT #1	OUTPUT #1	RETURN	RETURN	RETURN	RETURN
PU65-23 PU65-25	PU65-24	OUTPUT #1	OUTPUT #1	COMMON RETURN	COMMON RETURN	OUTPUT #2	OUTPUT #2	N.C.	N.C.
PU65-30 PU65-32 PU65-35-1	PU65-31 PU65-33 PU65-39	OUTPUT #1	OUTPUT #1	COMMON RETURN	COMMON RETURN	OUTPUT #2	OUTPUT #2	OUTPUT #3	N.C.
PU65-40 PU65-45-1	PU65-45-1	OUTPUT #1	OUTPUT #1	COMMON RETURN	COMMON RETURN	OUTPUT #2	OUTPUT #2	OUTPUT #3	OUTPUT #4