

P R B X

POWERBOX Industrial Line
PHE75W Series
75W 4:1 Single Output
DC/DC Converter

Features

75W isolated output
Half-brick size, six-sided shield metal case
High efficiency to 92%
Regulated outputs
4:1 input range
250KHz switching frequency
Continuous short circuit protection
Input under-voltage protection
Over temperature/voltage/current protection
Remote ON/OFF
Full load operation up to 65°C with heat-sink M-C092 natural convention
No tantalum capacitor inside
CE Mark Meets 2004/108/EC
Safety meets UL60950-1, EN60950-1, and IEC60950-1

Input

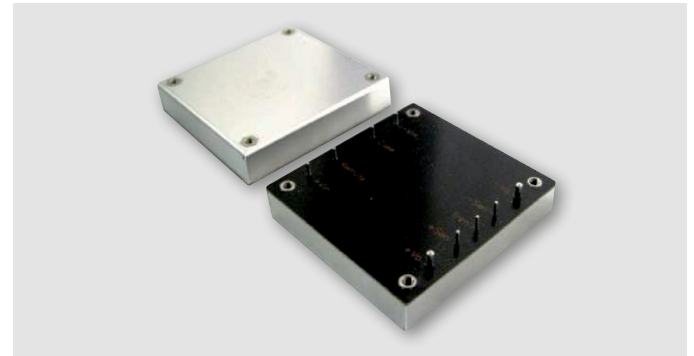
Voltage range	24V	9-36V
	48V	18-75V
Input surge voltage (100ms max)	24V	50VDC max
	48V	100VDC max
Under voltage lockout	24Vin power up	8.8V
	24Vin power down	8.0V
	48Vin power up	17V
	48Vin power down	16V
Positive logic remote ON/OFF ^{4,5}		
Input filter	PI type.	

Output

Voltage accuracy	±1.5% max.	
Transient response	<500u sec.	
External trim adj. range	±10%.	
Ripple and noise ³	3.3V & 5V	40mV rms, 100mV pk-pk max
	20MHz BW	60mV rms, 120mV pk-pk max
	24V	100mV rms, 240mV pk-pk max
	48V	200mV rms, 480mV pk-pk max
Temperature coefficient	±0.03%/°C max.	
Short circuit protection	Continuous.	
Line regulation ¹	±0.2% max.	
Load regulation ²	±0.2% max.	
Overvoltage protection	115-140% trip range, % Vo nom.	
Current limit	110-140% nominal output.	
Start up time	10ms typ.	

Environmental

Operating case temp.	-40°C to +100°C.
Storage temperature	-55°C to +105°C.
Thermal shutdown	Case temperature 110°C typ.

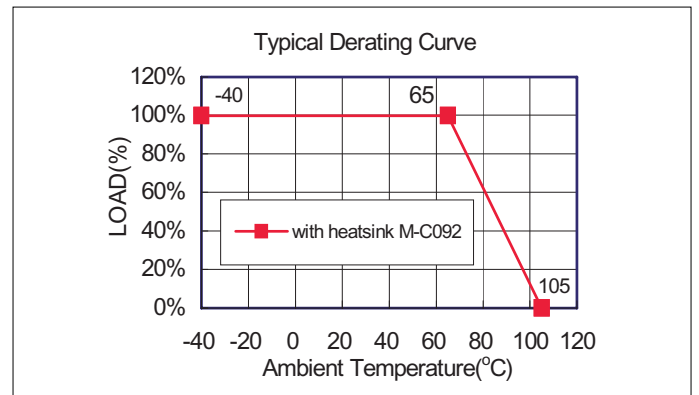


Humidity	95% RH max. Non-condensing.
----------	-----------------------------

General

Efficiency	See table.
Isolation voltage	1500VDC min input/output, input/case, output/case.
Isolation resistance	10 ⁷ ohms, min.
Isolation capacitance	1000pF typ.
Switching frequency	250KHz typ
MTBF	MIL-STD-217F, GB 25°C, full load, T.B.D. hrs.
Dimensions	57.9 x 61.0 x 12.7 mm.
Case material	Aluminum with non-conducted base.
Weight	95 g.

Derating Curve



Note:

1. Measured from high line to low line.
2. Measured from full load to zero load.
3. Output ripple and noise measured with 10uF tantalum capacitor and 1uF ceramic capacitor across output.
4. Logic compatibility: Open collector ref to -Input
Module ON: >3.5VDC to 75VDC or open circuit. Module OFF: <1.2VDC
5. Suffix "N" to the model number with Negative Logic Remote ON/OFF
Module ON: <1.2VDC Module OFF: >3.5VDC to 75VDC or open circuit.

Model Number	Input Voltage	Output Voltage	Output Current		Input Current		Efficiency		Capacitive Load Max
			Min	Max	No Load	Full Load	(4)	(3)	
PHE75W-24S3V3	9-36 VDC	3.3 VDC	0mA	20A	200mA	3.14A	86%	87.5%	20000µF
PHE75W-24S05	9-36 VDC	5.0 VDC	0mA	15 A	200mA	3.47A	90%	90%	15000µF
PHE75W-24S12	9-36 VDC	12 VDC	0mA	6.25 A	200mA	3.43A	90.5%	91%	6250µF
PHE75W-24S15	9-36 VDC	15 VDC	0mA	5 A	150mA	3.43A	91%	91%	5000µF
PHE75W-24S24	9-36 VDC	24 VDC	0mA	3.12 A	100mA	3.49A	90%	89.5%	3130µF ⁽²⁾
PHE75W-24S48	9-36VDC	48 VDC	0mA	1.56 A	100mA	3.53A	89.5%	88.5%	1560µF ⁽²⁾
PHE75W-48S3V3	18-75VDC	3.3 VDC	0mA	20A	150mA	1.55A	87%	88.5%	20000µF
PHE75W-48S05	18-75VDC	5.0 VDC	0mA	15 A	150mA	1.70A	92%	92%	15000µF
PHE75W-48S12	18-75VDC	12 VDC	0mA	6.25 A	100mA	1.70A	92%	92%	6250µF
PHE75W-48S15	18-75VDC	15 VDC	0mA	5 A	100mA	1.70A	91.5%	92%	5000µF
PHE75W-48S24	18-75VDC	24 VDC	0mA	3.12 A	100mA	1.73A	91%	90%	3130µF ⁽²⁾
PHE75W-48S48	18-75VDC	48 VDC	0mA	1.56 A	100mA	1.73A	91.5%	90%	1560µF ⁽²⁾

Notes:

- Nominal input voltage 24, 48 VDC.
- Require a 10µF aluminum capacitor connected between +Vout and -Vout for 24 & 48Vout models.
- Measured at nominal input voltage.
- Measured at 12VDC for 24SXX, 24VDC for 48SXX.

Mechanical

CASE HB

All Dimensions In Inches(mm)
Tolerances Inches: X.XX= ±0.02 , X.XXX= ±0.010
Millimeters: X.X= ±0.5 , X.XX=±0.25

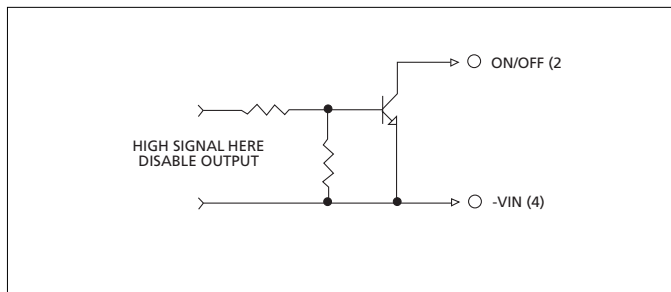
Mounting Inserts
M3*0.5 Through 4pl.

BOTTOM VIEW

Pin Function Table:

Pin	Function
1	+Vin
2	ON/OFF
3	CASE
4	-Vin
5	-Vout
6	-Sense
7	Trim
8	+Sense
9	+Vout

Remote On/Off Control



External Output Trimming

