

THE INNOVATIVE S48SE/S48SP 1X1 SIZED DC/DC BOARD MOUNTED POWER MODULES

Delta Electronics, Inc., a world leader in power systems technology and manufacturing, has introduced the S48SE and S48SP series, 1x1 sized power module to their Delphi Series of Board Mounted DC/DC Power Converters.

Both S48SE and S48SP series are pin-for-pin replacement for the popular industry-standard 1x2 products (Figure 1) in a much smaller footprint and available in surface mount or through-hole packages.



Figure 1: Delta 1x2 sized modules (S48SR series)

The S48SE (Figure 2) has a footprint 1.1"x0.96" and provides up to 17W of output power or up to 5A of output current (3.3V and below). While the S48SP series has a footprint 1.3"x0.96" and provides up to 35W of output power or up to 10A of output current (3.3V and below).

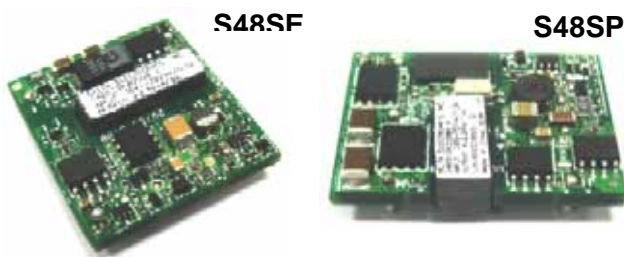


Figure 2: Delta S48SE and S48SP 1x1 sized modules

Both of the Delphi S48SE and S48SP converters operate from an input voltage of 36V to 75V and are available in output voltages from 1.2V to 15V. Typical efficiency of 3.3V module at full load is greater than 87% for S48SE and greater than 90% for S48SP. These industry-leading efficiencies translate into more board space at less cost for our customer's space constrained and cost-sensitive applications.

With creative design technology and optimization of component placement, these converters possess outstanding electrical and thermal performance, a host of industry-standard features to insure that these units will reliably perform in the harshest environments, as well as extremely high reliability under highly stressful operating conditions. All modules are fully protected from abnormal input/output voltage, current, and temperature conditions, as well as carry a 2250V voltage isolation which make them most suitable for the Power-over-Ethernet (POE) picker applications.

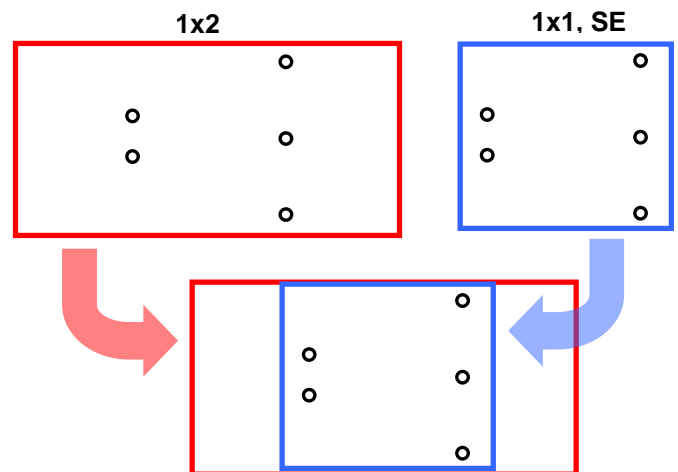


Figure 3: Comparison of 1x2 and 1x1 footprint and pinouts and spacing savings.

Figure 3 shows the footprints of 1x2 and 1x1 sized modules having the same pinouts. It also shows the spacing saving achieved when switching from 1x2 to 1x1 sized modules.

Tables 1 and 2 show the offerings and selections of S48SE (17W) and S48SP (35W) series 1x1 sized modules. Table 3 below summarizes the main items discussed above together.

MODEL NAME	OUTPUT	Eff @ full load
S48SE1R205NR A	1.2V 5A	81.0%
S48SE1R505NR A	1.5V 5A	83.0%
S48SE1R805NR A	1.8V 5A	85.0%
S48SE2R505NR A	2.5V 5A	85.0%
S48SE3R305NR A	3.3V 5A	87.0%
S48SE05003NR A	5.0V 3A	87.0%
S48SE12001NR A	12V 1.3A	88.0%
S48SE15001NR A	15V 1A	88.0%

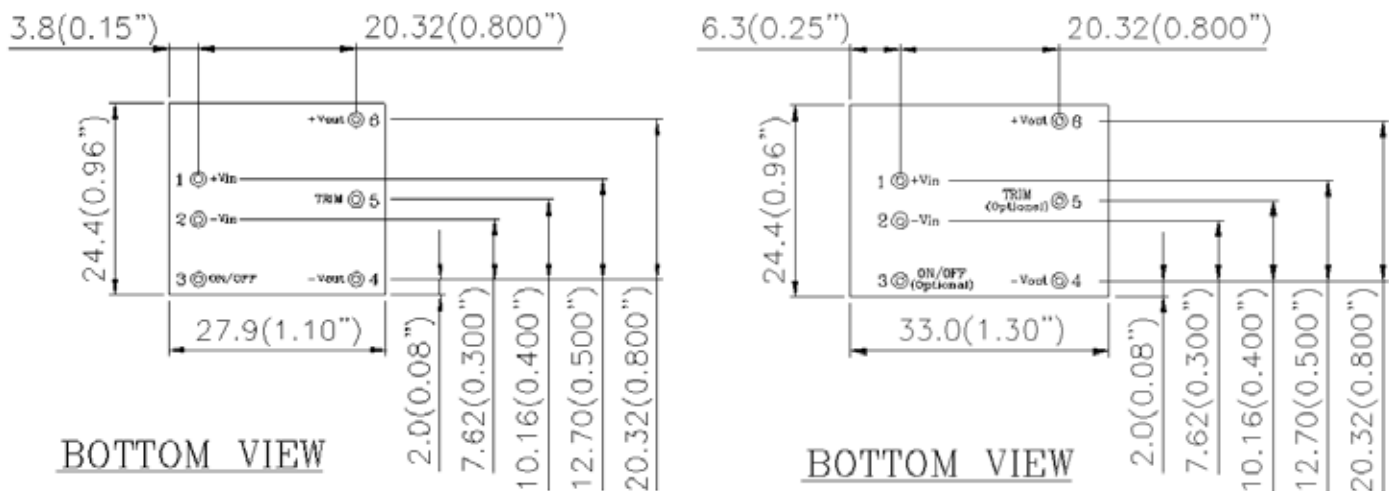
Table 1: 17W S48SE series

MODEL NAME	OUTPUT	Eff @ full load
S48SP1R810NR A	1.8V 10A	87.0%
S48SP3R310NR A	3.3V 10A	90.0%
S48SP05007NR A	5.0V 7A	90.0%
S48SP12003NR A	12V 3A	91.0%
S48SP15002NR A	15V 2A	91.0%

Table 2: 35W S48SP series

	S48SE	S48SP	S48SR
Platform	1x1, 17W	1x1, 35W	1x2, 15W
Footprint and height	1.1"x0.96"x0.33"	1.3"x0.96"x0.33"	2.0"x1.0"x0.36"
Maximum output power	17W	35W	15W
Maximum output current	5A	10A	5A
Output voltage range	1.2V~15V	1.2V~15V	1.8V~12V
Efficiency 3.3Vo, full load	87%	90%	86%
Isolation	2250V	2250V	1500V
Main features	UVLO, OCP, OVP, OTP, trim, on/off	UVLO, OCP, OVP, OTP, trim, on/off, monotonic startup, pre-biased loads	UVLO, OCP, OVP, trim,

Table 3: Summary and comparison of 1x1 and 1x2 sized modules



NOTES:
 DIMENSIONS ARE IN MILLIMETERS AND (INCHES)
 TOLERANCES: X.Xmm±0.5mm(X.XX in.±0.02 in.)
 X.XXmm±0.25mm(X.XXX in.±0.010 in.)

Figure 4: Mechanical drawings of S48SE and S48SP, 1:1 sized to the real module



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