

## 5-25W AC-DC Board Mount Power Supplies



Industrial



Test



COMM



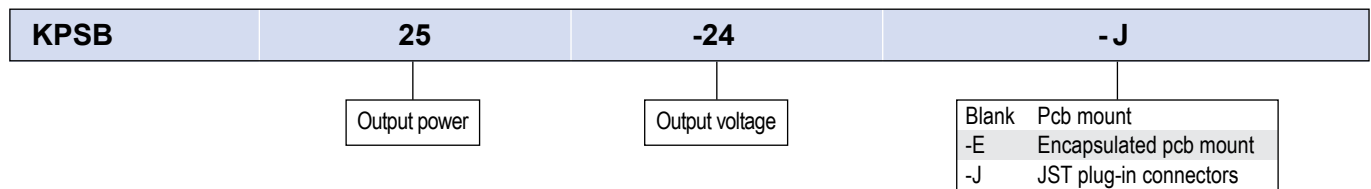
Broadcast



The cost effective, board mount KPSB series offers high efficiency levels in very compact 39.5 x 19.4mm (6W) and 50.8 x 28mm (25W) footprints. Featuring an open frame or encapsulated construction, these light weight converters are Class II double insulated, allowing operation without an earth ground connection. Optional JST plug in connectors are available.

| Features                                 | Benefits  |
|--|---|
| • High Efficiency, Up to 87%             | • Lower Operating Costs, Improved Thermal Performance |
| • Class B EMI                            | • No External Filter Components Required              |
| • Low No Load Power Consumption          | • Energy Saving                                       |
| • Wide Operating Temperature             | • Operation In Harsh Environments                     |
| • Class II, Wide Range Input (90-264VAC) | • Global Application, No Earth Required               |

| Model Selector |                    |                     |                   |                 |                         |                       |
|----------------|--------------------|---------------------|-------------------|-----------------|-------------------------|-----------------------|
| Model          | Output Voltage (V) | Maximum Current (A) | Maximum Power (W) | Overvoltage (V) | Efficiency (%) (230VAC) | Load Capacitance (µF) |
| KPSB6-3R3      | 3.3                | 1.5                 | 5                 | 6.45 - 7.14     | 75                      | 1500                  |
| KPSB6-5        | 5                  | 1.2                 | 6                 | 6.45 - 7.14     | 78                      | 1200                  |
| KPSB6-9        | 9                  | 0.67                | 6                 | 10.5 - 12.1     | 81                      | 670                   |
| KPSB6-12       | 12                 | 0.5                 | 6                 | 14.3 - 15.8     | 81                      | 500                   |
| KPSB6-15       | 15                 | 0.4                 | 6                 | 17.1 - 19.5     | 81                      | 400                   |
| KPSB6-24       | 24                 | 0.25                | 6                 | 28.5 - 31.5     | 83                      | 250                   |
| KPSB25-5       | 5                  | 4                   | 20                | 6.8 (Typ)       | 81                      | 81000                 |
| KPSB25-12      | 12                 | 2.1                 | 25                | 15 (Typ)        | 84                      | 40900                 |
| KPSB25-15      | 15                 | 1.67                | 25                | 18 (Typ)        | 85                      | 19800                 |
| KPSB25-24      | 24                 | 1.05                | 25                | 30 (Typ)        | 86                      | 6600                  |
| KPSB25-36      | 36                 | 0.7                 | 25                | 47 (Typ)        | 87                      | 4000                  |
| KPSB25-48      | 48                 | 0.52                | 25                | 56 (Typ)        | 87                      | 2170                  |



| Specifications                        |     |  |        |
|---------------------------------------|-----|--|--------|
| Model                                 |     | KPSB6  | KPSB25 |
| <b>Input</b>                          |     |  |        |
| Input Voltage range                   | Vac | 90 - 264   |        |
| Input Frequency                       | Hz  | 47 - 63  |        |
| Input Current (100VAC, Full Load)     | A   | 0.25   | 0.7    |
| Inrush Current at 240Vac (Cold Start) | A   | 90   | 60     |
| Touch Current (264Vac)                | uA  | <250   |        |
| Harmonic Compliance                   | -   | Meets IEC61000-3-2 Class A   |        |
| No Load Power Consumption             | W   | <0.075   | <0.1   |
| Hold Up Time (typ) at 115Vac Input    | ms  | 12   | 8      |
| Efficiency                            | -   | See model selector table   |        |
| Conducted & Radiated EMI              | -   | EN55032-B conducted and radiated, FCC Part 15 Class B                                    |        |
| Immunity                              | -   | EN55024, EN61204-3, EN61000-6-1, EN61000-6-2. See immunity table for details             |        |
| Insulation Class                      | -   | Construction suitable for Class II installation  |        |
| Safety Agency Certifications          | -   | IEC/UL/CSA/EN62368-1, (meets IEC/EN60335 and IEC/EN61558-1), CE Mark (LVD, EMC and RoHS) |        |

| Immunity                             |   |   |          |   |
|--------------------------------------|---|---|----------|---|
| Test                                 | Standard                                  | Test Level                                | Criteria | Notes   |
| ESD                                  | EN61000-4-2                               | Lvl 4 (+/-8kV)                            | A        | Air discharge (Unit not accessible for contact) |
| Radiated Susceptibility              | EN61000-4-3                               | N/A                                       | A        | Embedded power supply                           |
| Electrical Fast Transient Burst      | EN61000-4-4                               | Lvl 3 ( $\pm 2$ kV) / Lvl 3 ( $\pm 1$ kV) | A        | AC input port / DC output port                  |
| Surge                                | EN61000-4-5                               | Lvl 3 ( $\pm 1$ kV)                       | A        | -   |
| Conducted Susceptibility             | EN61000-4-6                               | N/A                                       | -        | Embedded power supply                           |
| Magnetic fields                      | EN61000-4-8                               | Lvl 3 (30A/m)                             | A        | -   |
| Voltage Dips and Input Interruptions | EN61000-4-11                              | 5% for 1/2 cycle                          | A        | -   |
|                                      | Class 3 Industrial, incl EN55024 (100Vac) | 70% for 25/30 cycles                      | A        | -   |
|                                      | EN55024 (100Vac)                          | 5% for 250/300 cycles                     | B        | -   |
|                                      | EN61000-4-11                              | 5% for 1/2 cycle                          | A        | -   |
|                                      | Class 3 Industrial, incl EN55024 (240Vac) | 70% for 25/30 cycles                      | A        | -   |
| EN55024 (240Vac)                     | 5% for 250/300 cycles                     | B   | -        |   |

| Specifications                                   |                 |   |        |  |
|--|-----------------|---|--------|--|
| Model  |                 | KPSB6   | KPSB25 |  |
| <b>Output</b>                                    |                 |   |        |  |
| Output Voltage Accuracy (Full Load)              | %               | 3.3V: $\pm 6$ , 5 to 9V: $\pm 5$ , 12 to 24V: $\pm 3$   |        | 5V: $\pm 2$ , 12 to 24V: $\pm 1$   |
| Output Voltage Adjustment                        | -               | None  |        |  |
| Switching Frequency (Typ)                        | kHz             | 30 - 70   |        | 65   |
| Line Regulation                                  | %               | $\pm 1$   |        |  |
| Load Regulation (10 to 100% Load)                | %               | 3.3V: $\pm$ , 5 to 9V: $\pm 5$ , 12 to 24V: $\pm 3$   |        | $\pm 1$  |
| External Load Capacitance                        | $\mu$ F         | See model selector table  |        |  |
| Ripple & Noise (20MHz BW)                        | mV / %          | 3.3 to 9V: 100mV, 12V: 120mV, 15V: 150mV, 24V: 240mV  |        | 1%   |
| Temperature Coefficient                          | %/ $^{\circ}$ C | $\pm 0.05$  |        |  |
| Minimum Load                                     | -               | No minimum load required  |        |  |
| Overcurrent Protection                           | -               | Hiccup mode with auto recovery  |        |  |
| Overvoltage Protection                           | V               | See Model Selector Table. Zener clamp method  |        |  |
| Parallel Operation                               | -               | Not possible  |        |  |
| Series Operation                                 | -               | Possible, contact Technical Support   |        |  |
| <b>Environmental</b>                             |                 |   |        |  |
| Operating Temperature                            | $^{\circ}$ C    | -40 to +80, derate linearly from 100% to 50% load from 60 to 80   |        | Open Frame: -30 to +60, derate linearly from 100% to 50% load from 40 to 60<br>Encapsulated: -30 to +70, derate linearly from 100% to 50% load from 50 to 70 |
| Storage Temperature                              | $^{\circ}$ C    | -40 to +85  |        | -30 to +85   |
| Humidity (non condensing)                        | %RH             | 5 - 93 (Operating & Storage)  |        |  |
| Cooling  | -               | Convection  |        |  |
| Altitude   | m               | 5,000   |        | 5,000 (3,000 IEC61558-1)   |
| Withstand Voltage (For 1 minute)                 | Vac             | Input to Output 3kV   |        |  |
| Isolation Resistance                             | M $\Omega$      | >100 at 25 $^{\circ}$ C, 70%RH & 500VDC   |        |  |
| Vibration  | -               | Meets MIL-STD 810F table 514.5C VIII, 15 to 2,000Hz, X, Y, V axis, 1 hour each. 4G                      |        |  |
| Shock  | -               | Meets MIL-STD-810F, 516.5 table 516.1-1, 10ms, X, Y, Z axis 3 times. 75G                                |        |  |
| <b>Other</b>                                     |                 |   |        |  |
| Weight (Typ)                                     | g               | KPSB6-xx: 11g<br>KPSB6-xx-J: 12g<br>KPSB6-xx-E: 30g   |        | KPSB25-xx: 50g<br>KPSB25-xx-J: 55g<br>KPSB25-xx-E: 105g  |
| Size (LxWxH)                                     | mm              | KPSB6-xx: 39.5 x 19.4 x 18.3<br>KPSB6-xx-J: 49.53 x 18.5 x 17.5<br>KPSB6-xx-E: 41.1 x 21 x 20           |        | KPSB25-xx: 50.8 x 27.94 x 24.9<br>KPSB25-xx-J: 70.5 x 27.94 x 23.0<br>KPSB25-xx-E: 53.1 x 30.3 x 24.8  |
| Size (LxWxH)                                     | Inches          | KPSB6-xx: 1.555 x 0.764 x 0.72<br>KPSB6-xx-J: 1.95 x 0.728 x 0.689<br>KPSB6-xx-E: 1.618 x 0.827 x 0.787 |        | KPSB25-xx: 2.0 x 1.1 x 0.98<br>KPSB25-xx-J: 2.776 x 1.1 x 0.906<br>KPSB25-xx-E: 2.091 x 1.193 x 0.976  |
| Connectors                                       | -               | Input: JST B3B-XH, output: B4B-XH   |        |  |
| Case Material                                    | -               | -E option code: Flame Retardant Polycarbonate (UL94 V-0)  |        |  |
| MTBF - MIL-HDBK-217F, GB 25 $^{\circ}$ C, 115VAC | Hours           | 1,120,000 (24V model)   |        | 500,000 (Minimum)  |
| Warranty   | yrs             | 3   |        |  |

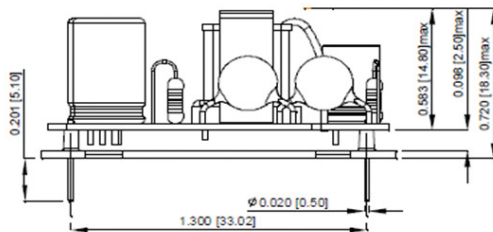
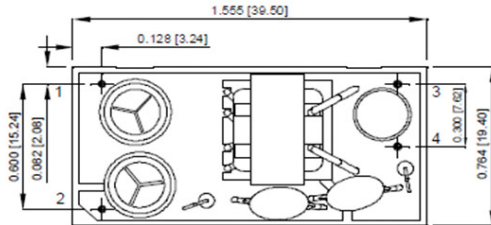
Notes:

See website for detailed specifications, test methods and installation manual

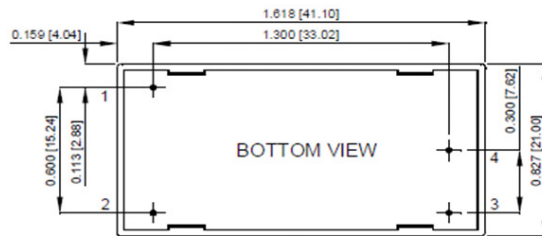
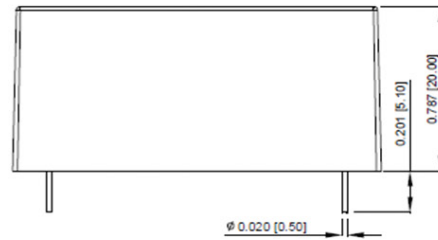
## KPSB6 Outline Drawings & Pin Out

All Dimensions In Inches[mm]  
 Tolerance Inches: x.xxx = ± 0.02  
 Millimeters: x.xx = ± 0.5

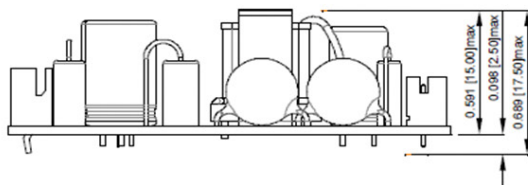
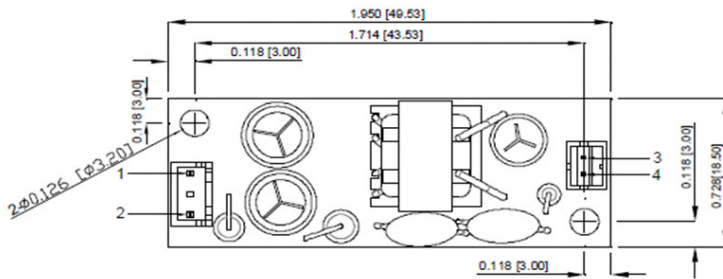
### KPSB6-XXX



### KPSB6-XXX-E



### KPSB6-XXX-J

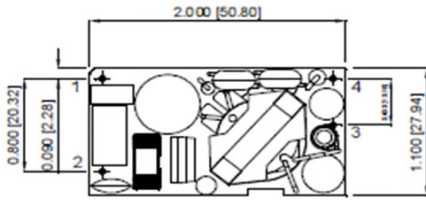


| PIN CONNECTION |          |
|----------------|----------|
| Pin            | Function |
| 1              | ACN      |
| 2              | ACL      |
| 3              | +Vout    |
| 4              | -Vout    |

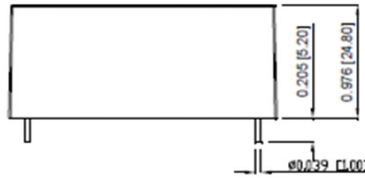
## KPSB25 Outline Drawings & Pin Out

All Dimensions In Inches[mm]  
 Tolerance Inches:x.xxx= ± 0.02  
 Millimeters: x.xx = ± 0.5

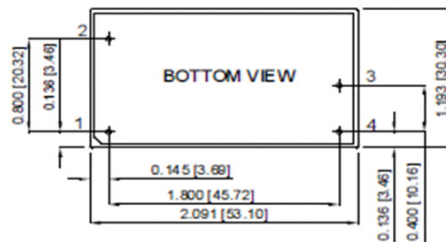
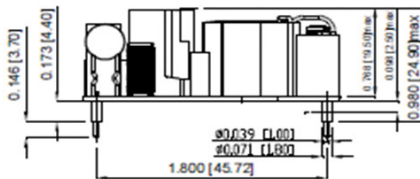
### KPSB25-XX



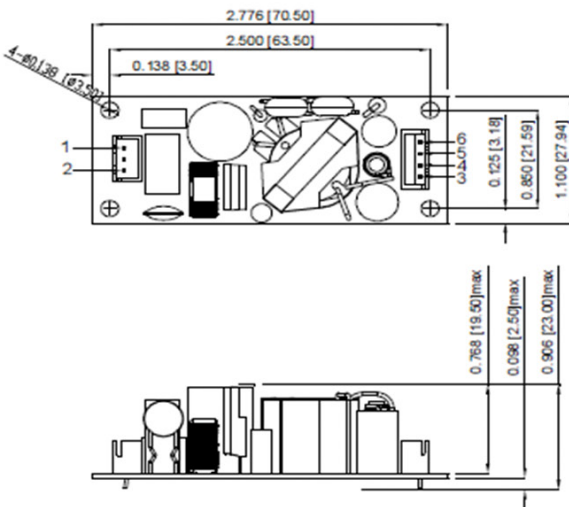
### KPSB25-XX-E



| PIN CONNECTION |          |
|----------------|----------|
| PIN            | Function |
| 1              | ACL      |
| 2              | ACN      |
| 3              | +Vout    |
| 4              | -Vout    |



### KPSB25-XX-J



| PIN CONNECTION |          |
|----------------|----------|
| PIN            | Function |
| 1              | ACL      |
| 2              | ACN      |
| 3              | +Vout    |
| 4              | +Vout    |
| 5              | -Vout    |
| 6              | -Vout    |



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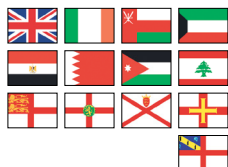
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