

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

<https://product.tdk.com/en/power/kpsb>  
[www.emea.tdk-lambda.com/kpsb](http://www.emea.tdk-lambda.com/kpsb)



Industrial



Test



COMM



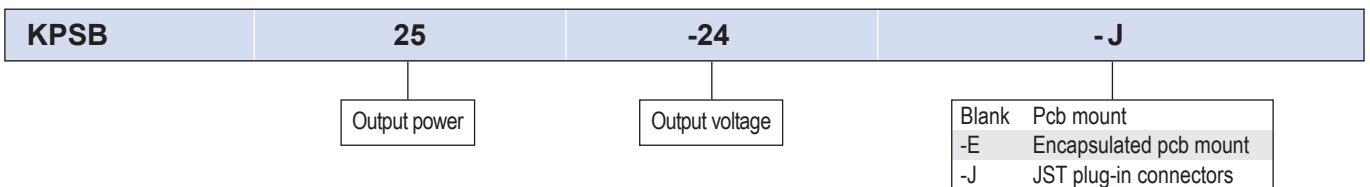
Broadcast



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 (uF)
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 (Operating)	Vac	90 - 264	
Nominal Input Voltage Range	Vac	100 - 240	
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 Certifications and Markings	-	IEC/UL/CSA/EN62368-1, (meets IEC/EN60335 and IEC/EN61558-1), CE Mark and UKCA Mark	

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 (±2kV) / Lvl 3 (±1kV)	A	AC input port / DC output port
Surge	EN61000-4-5	Lvl 3 (±1kV)	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		
<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 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 KPSB6-xx-J: 12g KPSB6-xx-E: 30g		KPSB25-xx: 50g KPSB25-xx-J: 55g KPSB25-xx-E: 105g
Size (LxWxH)	mm	KPSB6-xx: 39.5 x 19.4 x 18.3 KPSB6-xx-J: 49.53 x 18.5 x 17.5 KPSB6-xx-E: 41.1 x 21 x 20		KPSB25-xx: 50.8 x 27.94 x 24.9 KPSB25-xx-J: 70.5 x 27.94 x 23.0 KPSB25-xx-E: 53.1 x 30.3 x 24.8
Size (LxWxH)	Inches	KPSB6-xx: 1.555 x 0.764 x 0.72 KPSB6-xx-J: 1.95 x 0.728 x 0.689 KPSB6-xx-E: 1.618 x 0.827 x 0.787		KPSB25-xx: 2.0 x 1.1 x 0.98 KPSB25-xx-J: 2.776 x 1.1 x 0.906 KPSB25-xx-E: 2.091 x 1.193 x 0.976
Connectors	-	KPSB6-xx-J: Input: JST B3B-PH, Output: B2B-PH, KPSB25-xx-J: 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		

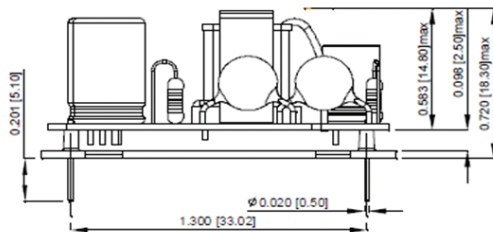
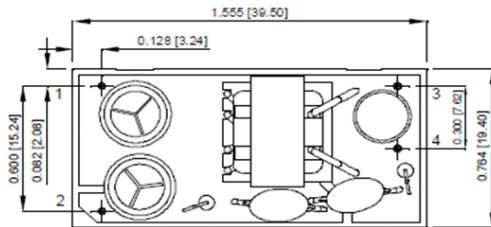
Notes:

See website for detailed specifications, test methods and installation manual

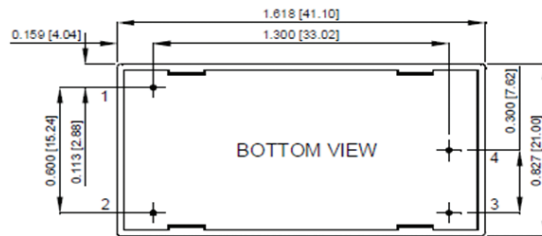
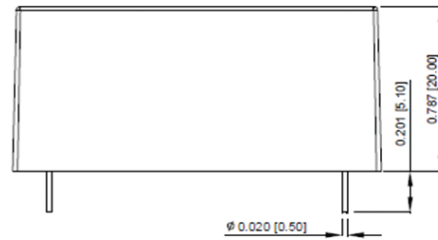
## KPSB6 Outline Drawings & Pin Out

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

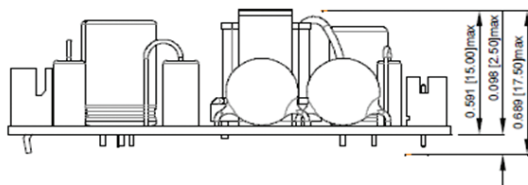
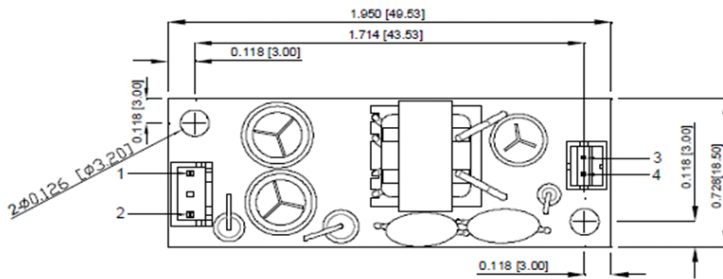
### KPSB6-XXX



### KPSB6-XXX-E



### KPSB6-XXX-J



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





## TDK-Lambda France SAS

Tel: +33 1 60 12 71 65  
tlf.fr.powersolutions@tdk.com  
www.emea.lambda.tdk.com/fr



## Italy Sales Office

Tel: +39 02 61 29 38 63  
tlf.it.powersolutions@tdk.com  
www.emea.lambda.tdk.com/it



## Netherlands

tlf.nl.powersolutions@tdk.com  
www.emea.lambda.tdk.com/nl



## TDK-Lambda Germany GmbH

Tel: +49 7841 666 0  
tlg.powersolutions@tdk.com  
www.emea.lambda.tdk.com/de



## Austria Sales Office

Tel: +43 2256 655 84  
tlg.at.powersolutions@tdk.com  
www.emea.lambda.tdk.com/at



## Switzerland Sales Office

Tel: +41 44 850 53 53  
tlg.ch.powersolutions@tdk.com  
www.emea.lambda.tdk.com/ch



## Nordic Sales Office

Tel: +45 8853 8086  
tlg.dk.powersolutions@tdk.com  
www.emea.lambda.tdk.com/dk



## TDK-Lambda UK Ltd.

Tel: +44 (0) 12 71 85 66 66  
tlu.powersolutions@tdk.com  
www.emea.lambda.tdk.com/uk



## TDK-Lambda Ltd.

Tel: +9 723 902 4333  
tli.powersolutions@tdk.com  
www.emea.lambda.tdk.com/il-en



## TDK-Lambda Americas

Tel: +1 800-LAMBDA-4 or 1-800-526-2324  
tla.powersolutions@tdk.com  
www.us.lambda.tdk.com



## TDK Electronics do Brasil Ltda

Tel: +55 11 3289-9599  
sales.br@tdk-electronics.tdk.com  
www.tdk-electronics.tdk.com/en



## TDK-Lambda Corporation

Tel: +81-3-6778-1113  
www.jp.lambda.tdk.com



## TDK-Lambda (China) Electronics Co. Ltd.

Tel: +86 21 6485-0777  
tlc.powersolutions@tdk.com  
www.lambda.tdk.com.cn



## TDK-Lambda Singapore Pte Ltd.

Tel: +65 6251 7211  
tfs.marketing@tdk.com  
www.sg.lambda.tdk.com



## TDK India Private Limited, Power Supply Division

Tel: +91 80 4039-0660  
mathew.philip@tdk.com  
www.sg.lambda.tdk.com

