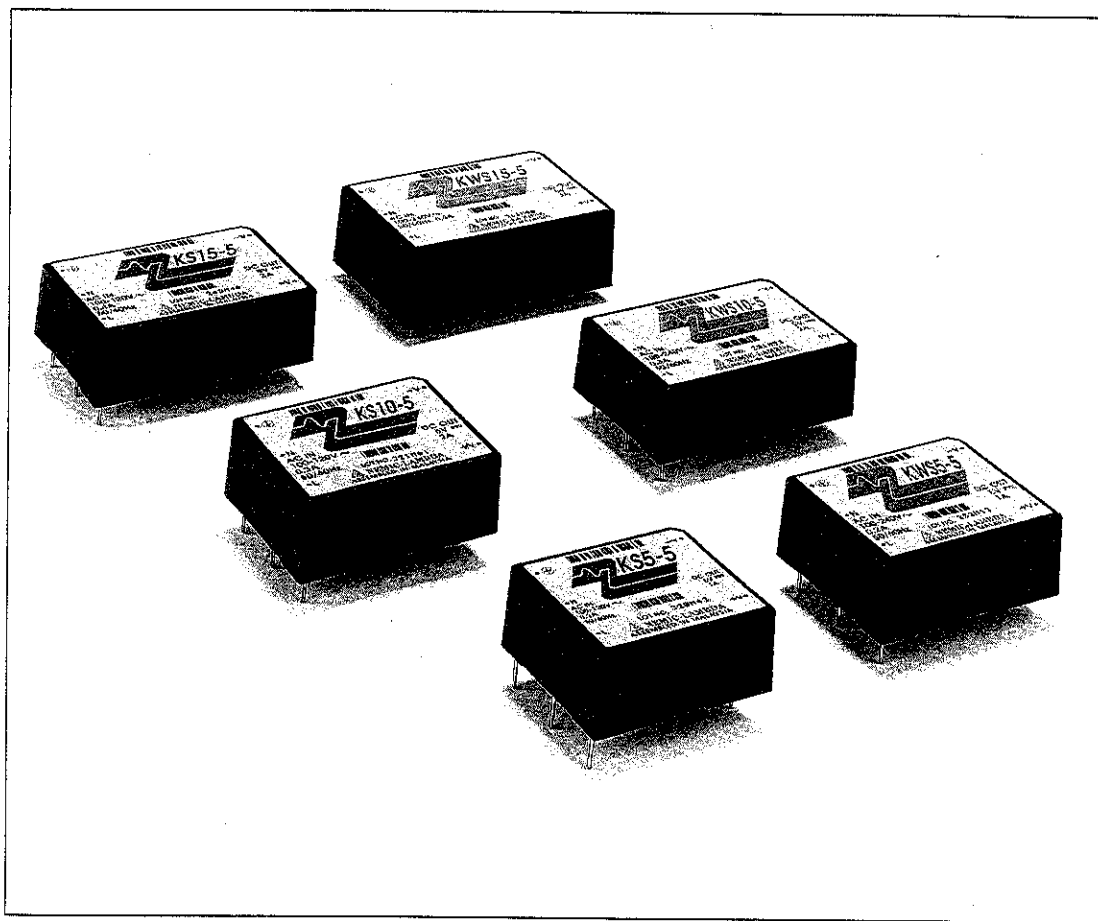


Part I – AC-to-DC Power Supplies

LAMBDA'S K SERIES



Compact AC-DC PC Board Mount Power Supplies Measure Only 1.69"x0.768"x1.89"

Lambda's K Series AC Input PC board mount power supplies are designed using the latest in surface mount technology, which significantly reduces their size and ultimately achieves a greater reduction in the overall size of the end-user equipment. In addition, the K Series eliminates the need for harnessing, thereby reducing overall labor content. And there's no need to be concerned with heatsinks because the K Series provides the flexibility to operate in temperatures that are not always ideal.

There are 21 models up to 15W in the K Series family, measuring from 1.69 x 0.768 x 1.89 inches. The KS Series (85 to 132VAC input) is designed for North American applications and the KWS Series is designed for worldwide applications (85 to 265VAC input). All models have worldwide safety agency approvals and they're backed by the Lambda guarantee.

K SERIES FEATURES

85-265VAC Wide Range AC Input	Lambda's KW Series provides continuous input without a jumper change, thereby reducing overall system integration costs. Only one model is needed, regardless of your end product's destination.
Worldwide Safety Agency Approvals	Lambda's K Series meets the worldwide safety requirements of isolation and breakdown voltage, reducing time to market. The KS Series meets UL 1950 and CSA 234. The KWS Series meets UL 1950, CSA 234 and IEC 950.
PC Board Mountable	Provides an overall system cost savings in your equipment since no cables or harnesses are required.
0-70°C Continuous Operation	The wide operating temperature range allows the units to be incorporated on virtually any PC Board.
Designed Using SMD Technology	SMD technology leads to a reduction in the size of your end equipment, a distinct competitive advantage.
Conducted EMI	The KS Series meets FCC Class B. The KWS Series meet FCC Class B and VDE 0871 B. Lower noise ensures better system performance and reliability.
Convection Cooled	All models are convection cooled. No heatsinks or forced air required for operation at full output power.
85-132 VAC AC Input	K Series models are also available in 110 VAC input for cost-driven applications in North America and the Far East.

Part I – AC-to-DC Power Supplies

K SERIES SPECIFICATIONS

AC Input

line 85-132 VAC, 47-440Hz on the
KS Series.
85-265VAC, 47-440Hz on the
KWS Series.

Efficiency/Inrush Current

Package Model	Inrush Current		Efficiency
	100VAC	200VAC	
KS5-5	15A	—	67%
KS15-5	10A	—	74%
KS5-12	15A	—	69%
KS10-5, 12	10A	—	73%
KS15-12	10A	—	76%
KWS5-5	15A	30A	67%
KWS10-5	15A	30A	73%
KWS15-5	20A	40A	74%
KWS5-12, 15	15A	30A	70%
KWS10-12, 15	15A	30A	75%
KWS15-12, 15	20A	40A	77%

EMI

The KS Series is built to meet VCCI-1, FCC Class B.
The KWS Series is built to meet VCCI-2, FCC Class B,
VDE Class B (with external cap).

DC Input

110-175VDC Input on the KS Series.
110-340VDC Input on the KWS Series.

DC Output

Voltage range shown in tables.

Regulated Voltage

regulation, line	20mV for 5V output of KS/KWS5, 10, 15. 48mV for 12V output of KS/KWS5, 10, 15. 60mV for 15V output of KWS5, 10, 15.
regulation, load	40mV for 5V outputs of KS/KWS5, 10, 15. 96mV for 12V outputs of KS/KWS5, 10, 15. 120mV for 15V outputs of KS/KWS5, 10, 15.
ripple and noise	120mV for 5V output of KS/KWS5, 10, 15. 150mV for 12V & 15V outputs of KS/KWS5, 10, 15.

Overload Protection

Automatic electronic current limiting is provided on all sets. Avoid
operation in an overcurrent condition for greater than 30 seconds.

Overvoltage Protection

110% (min) for KS Series.
115% (min) for KWS Series.

Holdup Time

The output voltage will remain within regulation limits for
17 msec minimum.

Isolation Rating

Tested for 1 minute.
KS5, 10, 15.
Input to Output: 2kV @20mA
Output to Chassis: 500VAC
KWS5, 10, 15.
Input to Output: 3kV
Input to Chassis: 2kV @20mA
Output to Chassis: 500VAC

Cooling

All units are convection cooled.

Operating Temperature

0° to +50°C with linear derating between +50°C and
+70°C to 25% power at +70°C.

Storage Temperature Range

–30°C to +85°C.

Physical Data

Package Model	Weight (lbs.)	Dimensions (inches)
KS5	.154	1.69 × 0.768 × 1.89
KS10	.187	1.77 × 0.807 × 2.17
KS15	.220	1.77 × 0.807 × 2.52
KWS5	.165	1.77 × 0.807 × 2.17
KWS10	.220	1.77 × 0.807 × 2.52
KWS15	.331	1.89 × 0.925 × 2.76

Shock

Less than 50G for 11msec ± 5msec, on X, Y, Z axis, 3 times each.

Vibration

10-55Hz constant amplitude, 1.65mm (max 10G), 1 minute sweep,
30 minutes along X, Y, and Z axis.

Safety Agency Approvals

The KS5, 10, 15 are pending approvals to UL1950 and CSA234.
The KWS5, 10, 15 are pending approvals to UL1950, CSA234 and
IEC950.

Guaranteed For 1 Year

One year guarantee includes labor as well as parts. Guarantee
applies to operation at full published specifications at the end of
1 year.

Commercial Ratings Table – Single Output

K SERIES

- PCB Mount
- Small Footprint
- High Density

V SERIES

- Lowest Cost 110VAC Input
- PCB and Chassis Mount
- Meets FCC Curve B on Duals and Triples

Z SERIES

- Lowest Cost 110/220VAC Input
- PCB Construction
- Meets FCC and VDE Curve B

LV SERIES

- Chassis Mount
- 110/220VAC Input
- Molex Connections

LS SERIES

- 110VAC Input
- Chassis Mount
- High Density

MAX CURRENT (AMPS) AT AMBIENT TEMPERATURE OF					V _{out} ADJ. RANGE	COMPLETE ELEC. SPEC. PG.	UNIT PRICE PER DELIVERED QUANTITY					MODEL			
25°C	40°C	50°C	60°C	71°C			1	10	25	100	250				
SINGLE OUTPUT. 110VAC INPUT.															
5V OUTPUT															
1.00	1.00	1.00	0.60	0.25	±5% Fixed	80	\$ 43	\$ 41	\$ 39	\$ 37	\$ 34	KS5-5			
2.00	2.00	2.00	1.20	0.50	±5% Fixed	80	47	44	42	40	37	KS10-5			
3.00	3.00	3.00	1.80	0.75	±5% Fixed	80	53	50	48	45	42	KS15-5			
12V OUTPUT															
0.45	0.45	0.45	0.27	0.11	±5% Fixed	80	43	41	39	37	34	KS5-12			
0.90	0.90	0.90	0.50	0.22	±5% Fixed	80	47	44	42	40	37	KS10-12			
1.30	1.30	1.30	0.78	0.32	±5% Fixed	80	53	50	48	45	42	KS15-12			

15V output models continued on page 65.

*Rating for VS150 is at 35°C.

Commercial Ratings Table – Single Output

K SERIES
 • PCB Mount
 • Small Footprint
 • High Density

V SERIES
 • Lowest Cost 110VAC Input
 • PCB and Chassis Mount
 • Meets FCC Curve B on Duals and Triples

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 • Lowest Cost 110/220VAC Input
 • PCB Construction
 • Meets FCC and VDE Curve B

LV SERIES
 • Chassis Mount
 • 110/220VAC Input
 • Molex Connections

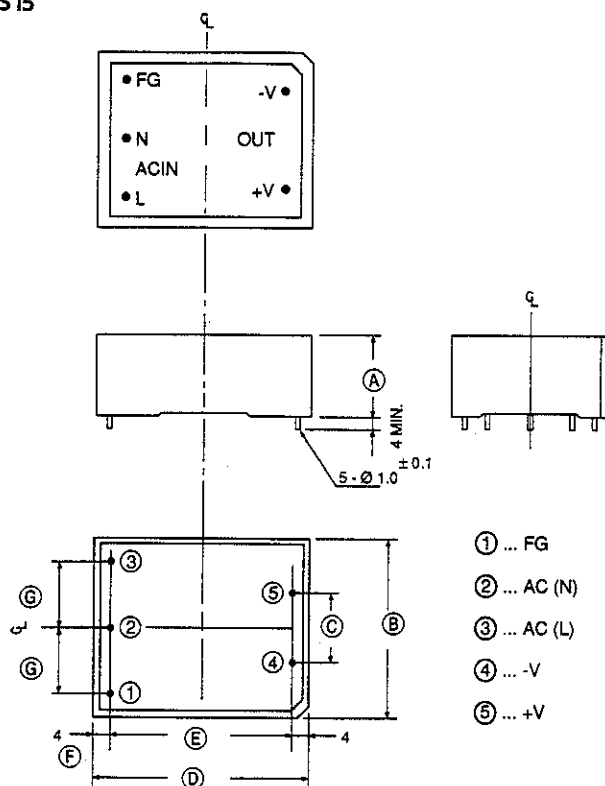
LS SERIES
 • 110VAC Input
 • Chassis Mount
 • High Density

MAX CURRENT (AMPS) AT AMBIENT TEMPERATURE OF				Vout ADJ. RANGE	COMPLETE ELEC. SPEC. PG.	UNIT PRICE PER DELIVERED QUANTITY					MODEL
25°C	40°C	50°C	60°C			1	10	25	100	250	
SINGLE OUTPUT. 110/220VAC.											
5V OUTPUT											
1.00	1.00	1.00	0.60	±5% Fixed	80	\$ 49	\$ 47	\$ 44	\$ 42	\$ 39	KWS5-5
2.00	2.00	2.00	1.20	±5% Fixed	80	56	53	51	48	45	KWS10-5
3.00	3.00	3.00	1.80	±5% Fixed	80	82	78	74	70	65	KWS15-5
12V OUTPUT											
0.45	0.45	0.45	0.27	±5% Fixed	80	49	47	44	42	39	KWS5-12
0.90	0.90	0.90	0.50	±5% Fixed	80	56	53	51	48	45	KWS10-12
1.30	1.30	1.30	0.78	±5% Fixed	80	82	78	74	70	65	KWS15-12
15V OUTPUT											
0.35	0.35	0.35	0.20	±5% Fixed	80	49	47	44	42	39	KWS5-15
0.70	0.70	0.70	0.40	±5% Fixed	80	56	53	51	48	45	KWS10-15
1.00	1.00	1.00	0.60	±5% Fixed	80	82	78	74	70	65	KWS15-15

*Rating for VS150 is at 35°C.

K SERIES MECHANICAL DRAWINGS

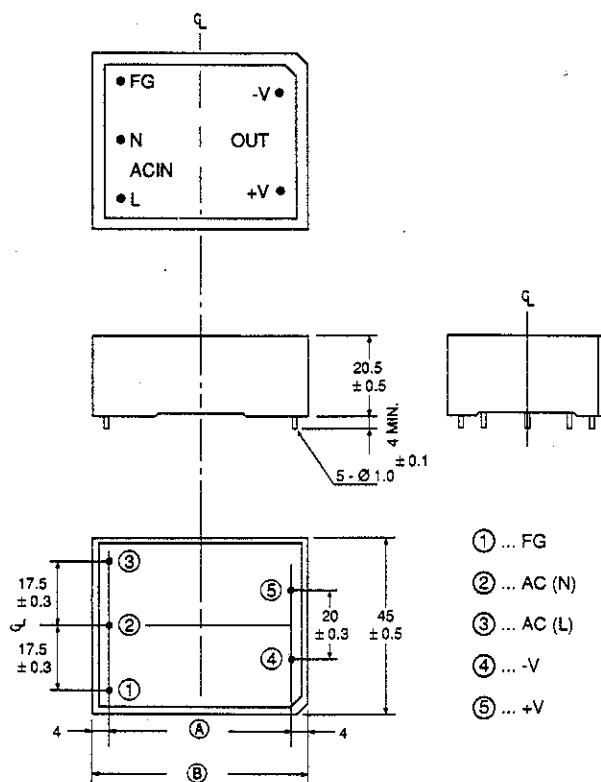
KS5
KWS15



Model	A	B	C	D	E	F	G
KS5	19.5 ±0.5	43 ±0.5	20 ±0.3	48 ±0.5	43 ±0.5	2.5	17.5 ±0.3
KWS15	23.5 ±0.5	48 ±0.5	23 ±0.3	70 ±0.5	62 ±0.5	4.0	20 ±0.3

Dimensions are in mm.

KS10
KS15
KWS5
KWS10



Model	A	B
KS10, KWS5	47 ± 0.5	55 ± 0.5
KS15, KWS10	54 ± 0.5	64 ± 0.5
KWS5	47 ± 0.5	55 ± 0.5
KWS10	54 ± 0.5	64 ± 0.5

Dimensions are in mm.