



Industrial

Test

Comm

Broadcast

## Single Output 5W to 25W AC-DC PCB-Mount Power Supplies



Features	Benefits
• Protection Class II, No Ground Connection	• Easy, rapid on-board integration
• Small footprint without the need for external components	• Saves space, time and cost
• Long Electrolytic Capacitor Lifetime	• Higher reliability, longer product or system life
• No load power consumption less than 0.5W	• Better energy efficiency, better environmental footprint
• Improved efficiencies up to 88%	• Reduced power losses, easier on board thermal management
• Wide Temperature Range -40°C (start up) to +85°C	• Enables use in wide range of professional industrial applications

Specification		KWS5A	KWS10A	KWS15A	KWS25A
AC Input Voltage	VAC	85 - 265 (1)			
Input Frequency	Hz	47 - 440			
Inrush Current (cold start)	A	15 at 100VAC, 30 at 200VAC			
Power Factor	-	Meets EN61000-3-2			
Input Current (100/200VAC)	A	0.13 / 0.07	0.25 / 0.13	0.33 / 0.24	0.56 / 0.34
Output Voltage Accuracy	%	±5			
No Load Power Consumption	W	<0.5			
Temperature Coefficient	%/°C	<0.02			
Overcurrent Protection	-	> 105% of rated current			
Overvoltage Protection	V	5V: 5.75 - 7, 12V: 13.8 - 18.3, 15V: 17.25 - 22.4, 24V: 27.6 - 34			
Hold Up Time (100 / 200V input)	ms	15 / 30	10 / 20		
Leakage Current	mA	<0.25 at 265VAC, 60Hz			
Operating Temperature	°C	-40°C start-up; -10 to +85°C. See derating curve for details			
Storage Temperature	°C	-40 to +85°C			
Humidity (non condensing)	%RH	30 - 90 Operating, 20 - 95 Storage			
Cooling	-	Convection Cooled			
Withstand Voltage	VAC	Input to Output 3kVAC			
Isolation Resistance	MΩ	>100MΩ at 25°C & 70%RH, Input to Output 500VDC			
Vibration (non operating)	-	10 - 55Hz: 1.65mm p-p (Max 10G) sweep for 1 min X, Y, Z for 1 hour			
Shock	-	< 50G for 11 ±5ms on (X,Y,Z) each axis 3 times			
Immunity	-	IEC61000-4-2, -3, -4, -5, -6, -8, -11; IEC61000-6-2			
Safety Agency Certifications	-	IEC/EN/UL/CSA60950-1, IEC/EN/UL/CSA62368-1 and CE Mark			
Conducted & Radiated EMI	-	EN55011-A, EN55022-A, FCC Class A (Requires external X capacitor to meet -B)			
Weight (Typ)	g	35	35	60	85
Size (LxWxH)	mm	38.1 x 25.4 x 21.5		50.8 x 25.4 x 24	63.5 x 25.4 x 29
MTBF (2)	hours	14,416,059	7,784,121	8,202,502	5,747,627
Warranty	yrs	3			

**Notes:** (1) Derate to 80% load from 100 to 85VAC input (KWS5A 90% load from 90 to 85VAC)

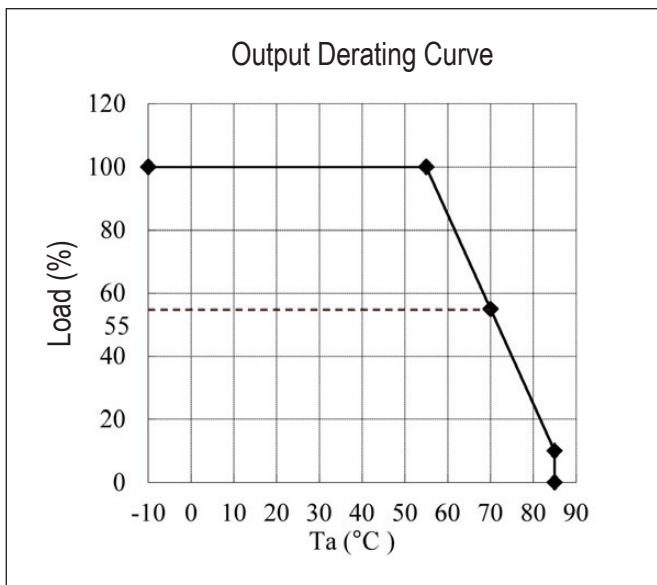
(2) According to Telcordia document SR-332, issue 3, "Reliability Prediction Procedure for Electronic Equipment"  
Conditions: ambient temp. 25°C, 230Vac input, full load (figures shown for 24V models)

## Model Selector

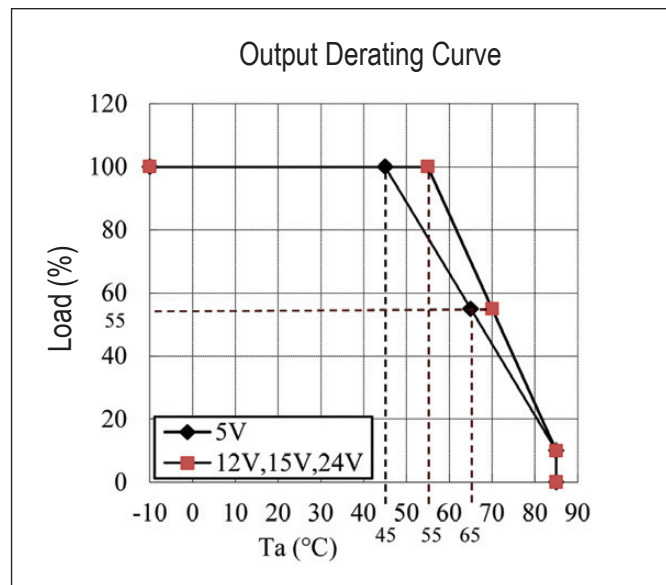
Model	Voltage (V)	Max Current (A)	Max Power (W)	Load Reg (mV)	Line Reg (mV)	Ripple Noise (mV)	Efficiency (typ) % (3)
KWS5A-5	5	1.0	5.0	40	20	200	76 / 74
KWS10A-5	5	2.0	10.0	40	20	200	76 / 77
KWS15A-5	5	3.0	15.0	40	20	200	77 / 78
KWS25A-5	5	5.0	25.0	40	20	200	81 / 82
KWS5A-12	12	0.45	5.4	96	48	240	78 / 75
KWS10A-12	12	0.9	10.8	96	48	240	80 / 81
KWS15A-12	12	1.3	15.6	96	48	240	81 / 83
KWS25A-12	12	2.2	26.4	96	48	240	84 / 86
KWS5A-15	15	0.35	5.3	120	60	240	79 / 75
KWS10A-15	15	0.7	10.5	120	60	240	81 / 82
KWS15A-15	15	1.0	15.0	120	60	240	82 / 84
KWS25A-15	15	1.7	25.5	120	60	240	85 / 87
KWS5A-24	24	0.22	5.3	150	96	240	80 / 77
KWS10A-24	24	0.5	12.0	150	96	240	82 / 84
KWS15A-24	24	0.7	16.8	150	96	240	82 / 85
KWS25A-24	24	1.1	26.4	150	96	240	86 / 88

Notes: (3) 115 / 230VAC input. Full load

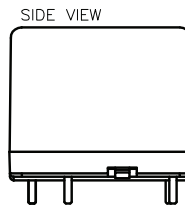
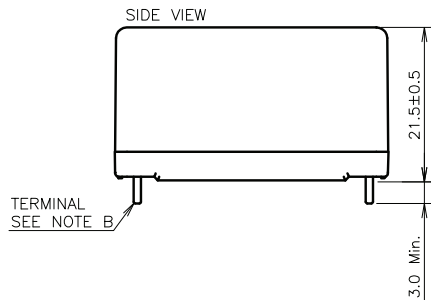
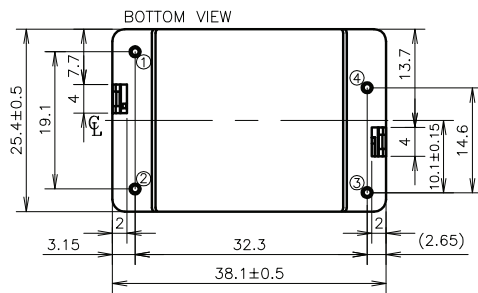
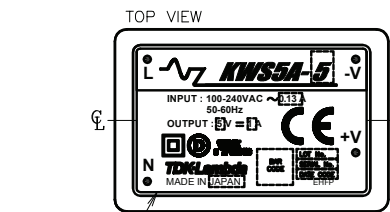
### Output Derating Curve KWS5A



### Output Derating Curve KWS-A Series (10, 15, 25W)



## Outline Drawing KWS5A & KWS10A



\*TERMINAL ASSIGNMENTS  
 ①.....AC(N) INPUT  
 ②.....AC(L) INPUT  
 ③.....-V OUTPUT  
 ④.....+V OUTPUT

\*MATERIAL  
 CASE : PLASTIC(UL94V-0)  
 PBT t=1.0mm

### NOTES

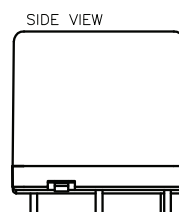
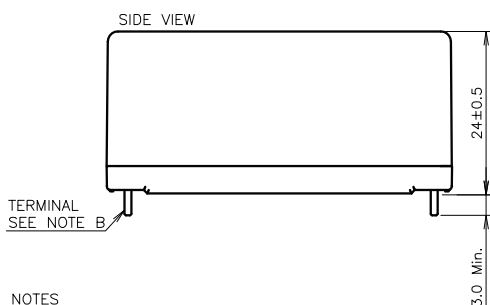
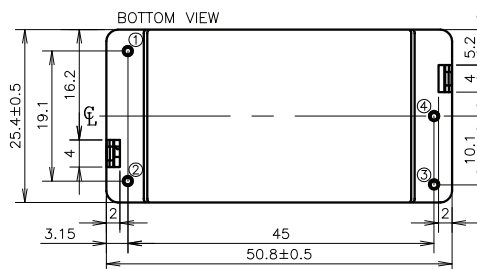
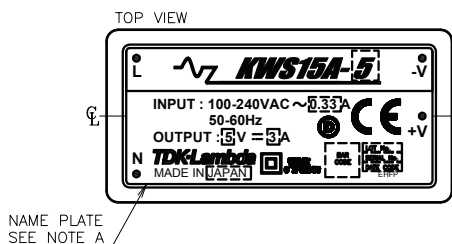
A: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, MAXIMUM OUTPUT CURRENT, COUNTRY OF MANUFACTURE AND MARKING ARE SHOWN HERE IN ACCORDANCE WITH THE SPECIFICATIONS.

B: INPUT AND OUTPUT TERMINALS :  $4-\phi 1\pm 0.1$

C: UNLESS OTHERWISE SPECIFIED DIMENSIONAL TOLERANCE :  $\pm 0.3$

(unit : mm)	
MODEL NAME	KWS5A
<b>TDK-Lambda</b>	
FC002-02-01	

## Outline Drawing KWS15A



\*TERMINAL ASSIGNMENTS  
 ①.....AC(N) INPUT  
 ②.....AC(L) INPUT  
 ③.....-V OUTPUT  
 ④.....+V OUTPUT

\*MATERIAL  
 CASE : PLASTIC(UL94V-0)  
 PBT t=1.0mm

### NOTES

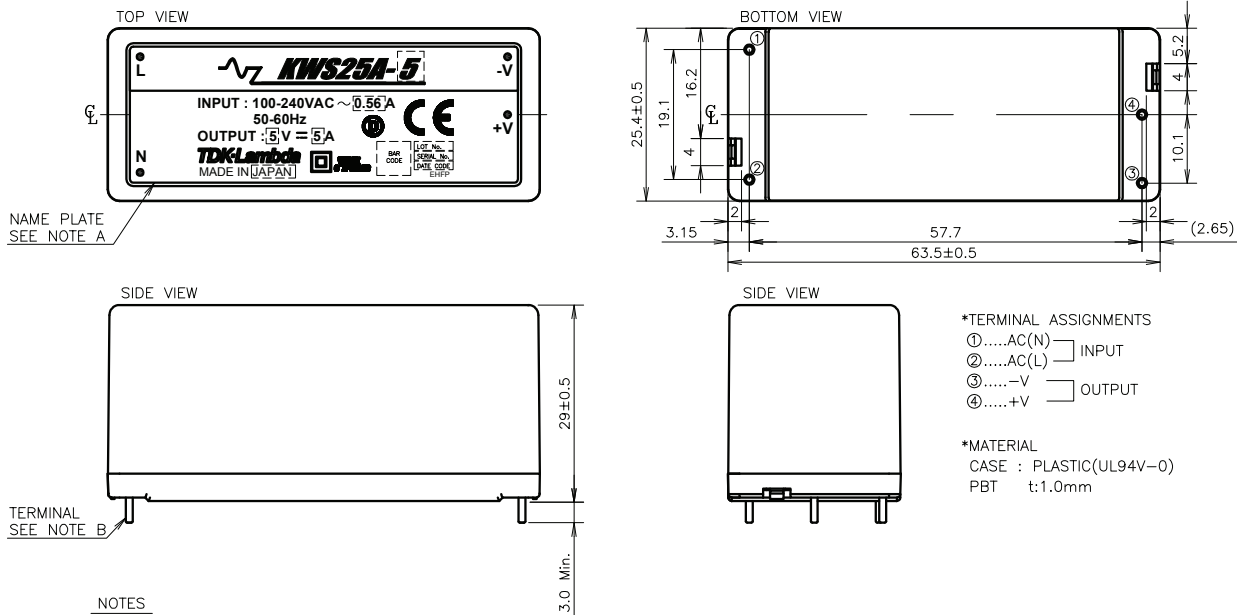
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B: INPUT AND OUTPUT TERMINALS :  $4-\phi 1\pm 0.1$

C: UNLESS OTHERWISE SPECIFIED DIMENSIONAL TOLERANCE :  $\pm 0.3$

(unit : mm)	
MODEL NAME	KWS15A
<b>TDK-Lambda</b>	
FC004-02-01	

## Outline Drawing KWS25A



### NOTES

- A: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, MAXIMUM OUTPUT CURRENT, COUNTRY OF MANUFACTURE AND MARKING ARE SHOWN HERE IN ACCORDANCE WITH THE SPECIFICATIONS.
- B: INPUT AND OUTPUT TERMINALS : 4- $\phi$ 1±0.1
- C: UNLESS OTHERWISE SPECIFIED DIMENSIONAL TOLERANCE : ±0.3

(unit : mm)	
MODEL NAME	KWS25A
<b>TDK-Lambda</b>	
FC005-02-01	



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