

# Datasheet

## KAM15 SERIES



AC-DC POWER MODULE  
15W UL /cUL / TUV / CE

### Features

AC/DC Power module  
Universal input 85 - 265 Vac  
High efficiency up to 82%  
Short circuit protection  
Internal input filter  
3 year warranty

### Model list

RS STOCK NO.	MODEL NO.	OUTPUT WATTAGE	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (TYP.)
771-9420	KAM1505	15 watts	85~265 Vac	+ 5 Vdc	3000 mA	76%
771-9423	KAM1512	15 watts	85~265 Vac	+12Vdc	1250 mA	82%
771-9427	KAM1515	15 watts	85~265 Vac	+15 Vdc	1000 mA	82%
771-9436	KAM1524	15 watts	85~265 Vac	+24 Vdc	625 mA	82%

### Specification

All specifications typical at nominal line, full load, 25°C unless otherwise stated

GENERAL						
CHARACTERISTICS	CONDITIONS		MIN.	TYP.	MAX.	UNIT
Switching frequency	Vi nom, Io nom			100		kHz
Isolation voltage	Input- output		3000/4242			Vac/Vdc
Isolation resistance	Input- output @ 500 Vdc		100			MΩ
Ambient temperature	Operating at Vi nom, Io nom		-40		+71	°C
Case temperature	Operating at Vi nom, Io nom				+85	°C
Derating	Vi nom, +51 to +71 °C				2	% / °C
Storage temperature	Non operational		-40		+100	°C
Relative humidity	Vi nom, Io nom		20		95	% RH
Temperature coefficient	Vi nom, Io nom				± 0.03	% / °C
Altitude during operation	IEC60068-2-13				4850	m
Dimensions			L 76.2 x W 50.8 x H 22.8			mm
Cooling	Free air convection					
MTBF	Bellcore issue 6 @ 40°C, GB	3.3V, 5V models		1220000		h
		12V, 15V & 24V models		1250000		h

### INPUT SPECIFICATIONS

CHARACTERISTICS	CONDITIONS		MIN.	TYP.	MAX.	UNIT
Rated input voltage	Io nom		85		265	Vac
Input voltage range	Ta min ... Ta max, Io nom	ac in	85		265	Vac
		dc in	120		375	Vdc
Input current	Vi : 115 / 230 Vac, Io nom			310 - 190	0.8 - 0.4	mA
Rated input current	Vi : 85 Vac, Io nom				500	mA
Line frequency	Vi nom, Io nom		47		63	Hz
Inrush current	Vi : 115 / 230 Vac, Io nom				10/ 18	A
Leakage current	Input - Output				0.25	mA

**Specification**

OUTPUT SPECIFICATIONS					
CHARACTERISTICS	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output voltage accuracy	Vi nom, Io nom			± 2	%
Minimum load	Vi nom	0			%
Line regulation	Io nom, Vi min ... Vi max			± 1	%
Load regulation	Vi nom, Io min ... Io nom			± 2	%
Cross regulation	Asymmetrical load 20% / 100% FL				
Hold up time	Vi : 115 / 230 Vac, Io nom	15 / 30			ms
Turn on time	Vi nom, Io nom			1000	ms
Rise time	Vi nom, Io nom			150	ms
Fall time	Vi nom, Io nom			150	ms
Transient recovery time	Vi nom, 1 ~ 0.5 Io nom			1	ms
Ripple & noise	Vi nom, Io nom	3.3V & 15V models		100	mV
	BW = 20 MHz	12V, 15V & 24V models		150	mV
External trim ADJ. Range	Io = 5% ... 100%	-10		+10	%
Efficiency	Vi nom, Io nom, Po / Pi	up to 82%, see model list & typ efficiency curve			

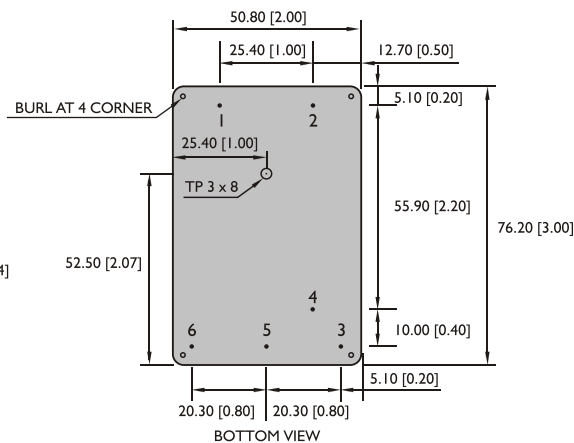
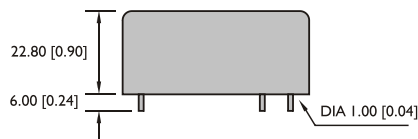
CONTROL AND PROTECTION					
CHARACTERISTICS	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Input fuse			T2A / 250Vac internal		
Internal surge voltage protection	IEC 61000-4-5		Varistor		
Output short circuit			Hiccup mode		

APPROVALS AND STANDARDS	
UL / cUL	UL 60950-1 Recognised
TUV	EN 60950-1 CB scheme
CE	EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3
	EN 61000-6-2, EN 55024, EN 61000-4-2, EN 61000-4-3
	EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
Vibration resistance	meet IEC 60068-2-6 (10-500 Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)
Shock resistance	meet IEC 60068-2-27 (15G, 11ms, 3 axes, 6 Faces, 3 times for each Face)

PHYSICAL CHARACTERISTICS	
Case size	76.2 x 50.8 x 22.8mm ( 3 x 2 x 0.90 inches)
Case material	Plastic
Weight	160g
Potting material	Epoxy

**Mechanism & pin configuration**

mm [inch]

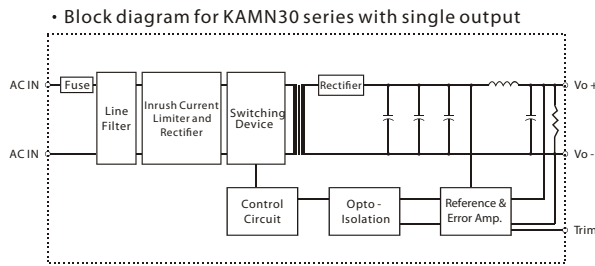


GENERAL TOLERANCE	
0.00[0.00] - 30.00[1.18]	±0.30[0.01]
30.00[1.18] - 120.00[4.72]	±0.50[0.02]

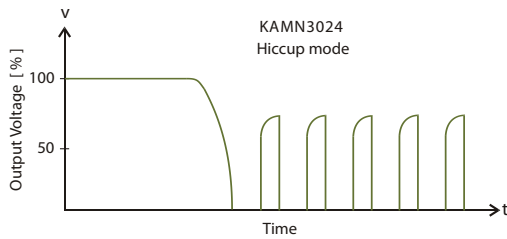
**Pin assignment**

GENERAL					
Pin no.	1	2	3	4	6
Single	ac in	ac in	Vo -	Trim	Vo +

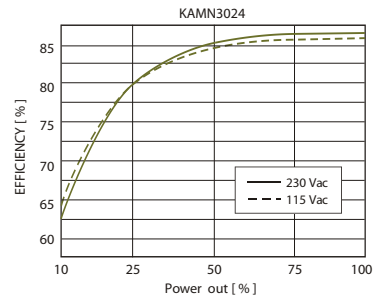
**Circuit schematic**



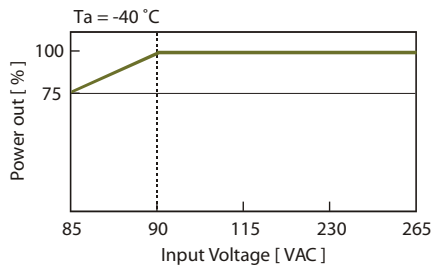
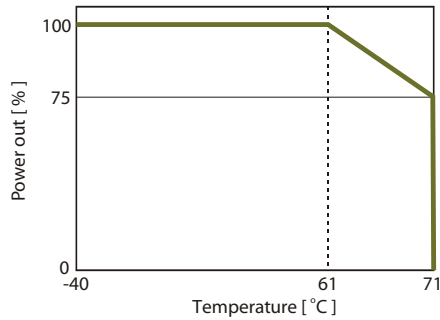
**Typ. current limited curve**



**Typ. efficiency curve**



**Derating curve**



Typical resistor values for various output voltage adjustment settings and max continuous power

TYPE	REXT 1		REXT 2		MAX CONTINUOUS POWER
	Vo nom -5%	Vo nom -10%	Vo nom +5%	Vo nom +5%	
KAMN3005	5.1KΩ	1KΩ	6.8KΩ	2KΩ	30W
KAMN3012	39KΩ	20KΩ	10KΩ	0Ω	30W
KAMN3015	180KΩ	56KΩ	30KΩ	5.1KΩ	30W
KAMN3024	150KΩ	51KΩ	8.2KΩ	0Ω	30W

**Trim connection**

