

Features

- Wide input range 85-305VAC
- 5000m operating altitude
- OVCIII up to 2000m altitude
- 4kVAC isolation rated/60sec.
- EMC compliant without external components
- No load power consumption <200mW

The economy "KAD20ExxM-S" series of compact 20 Watt AC/DC modules, is designed to meet general purpose requirements for a wide variety of equipment for the IoT, ITE and industrial markets. These encapsulated power supplies feature 4kVac isolation and over voltage category OVCIII, as well as 100-277VAC nominal input voltages. At OVC II usage, the operating altitude is rated for up to 5000m. For EMC compatibility in floating output configurations, EN55032 limits for class "B" are met without any external components. The outputs are protected against over current and short circuits and input protection by internal fuse is provided. All these features make the product one of the easiest integrated modular power solutions for lowest total cost of ownership in the industry.

Selection Guide

Part Number	Input Voltage [VAC]	Output Voltage [VDC]	Output Current [mA]	Efficiency typ. ⁽¹⁾
KAD20E05M-S	85-305	5	4000	80%
KAD20E12M-S	85-305	12	1667	83%
KAD20E24M-S	85-305	24	833	84%

Note1: Efficiency is tested at nominal input and full load at +25°C ambient

Specifications

BASIC CHARACTERISTICS

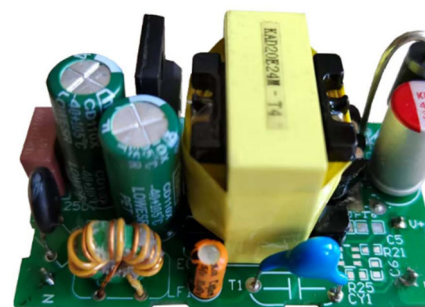
Item	Test Condition		Min.	Typ.	Max.
Internal Input Filter	CM Choke				
Input Frequency	AC		47Hz		63Hz
Nominal Input Voltage	47-63Hz		85VAC	230VAC	305VAC
	DC		120VDC		430VDC
Input Current	115VAC				400mA
	230VAC				300mA
	265VAC				260mA
Inrush Current ⁽²⁾	115VAC				20A
	265VAC				40A
Power Consumption	No load				200mW
ErP Standby Mode Conformity ⁽³⁾	Input Power=	0.5W			0.25W
		1.0W			0.60W
		2.0W			1.40W
Start-up Time					150ms
Rise Time					25ms
Hold-up Time	115VAC			10ms	
	230VAC			40ms	
	265VAC			56ms	



AC/DC Converter

KAD20ExxM-S Series

20 Watt Single Output



EN55032:2015/A1:2020 Compliant

EN55035:2017/A11:2020 Compliant

IEC/EN6100-3-2:2019/A1:2021 Certified

IEC/EN6100-3-3:2013/A2:2021 Certified

IEC/EN62368-1:2014+A11:2017 Certified

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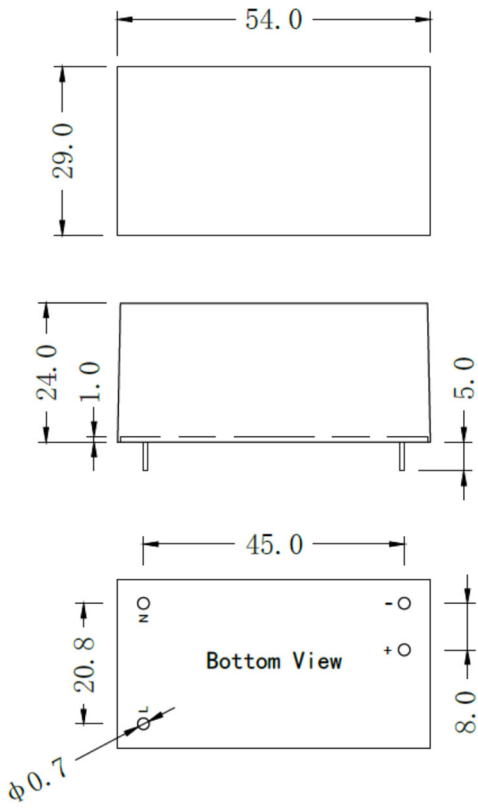
Output Ripple ⁽⁴⁾	20MHz BW	5Vout others			150mVp-p 1% of Vout
Note2: Cold start at 25°C Note3: Maximum output power available for stated maximum input power Note4: Measurements are made with a 0.1μF MLCC & 10μF E-cap in parallel across output. (low ESR)					

OutputAccuracy			±2%	
LineRegulation	100% Load		±0.5%	
LoadRegulation	0%-100% Load		±1%	

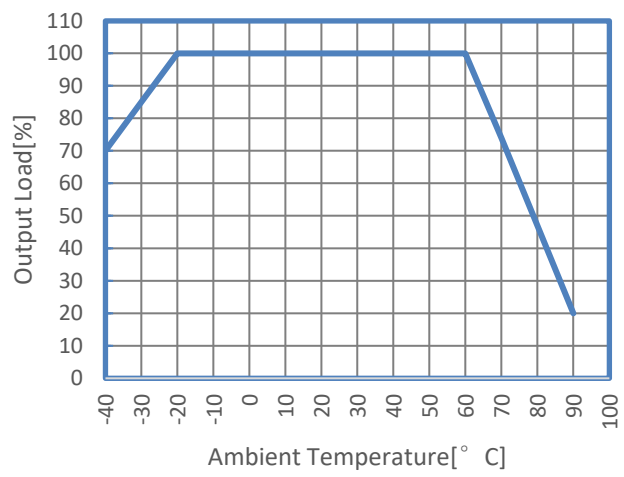
PROTECTIONS			
Input Fuse	internal	slow blow	
Short Circuit Protection (SCP)		hiccup mode, automatic restart	
Over Voltage Protection (OVP)		105% - 120%, clamping, automatic restart	
Over Load Protection (OLP)		150% - 195%, hiccup mode	
Over Voltage Category	according to 62368-1	OVCII(5000m) OVCIII(2000m)	
Isolation Voltage	1 minute	4KVAC	
Isolation Resistance		1GΩ	
Leakage Current		0.25mA max.	

ENVIRONMENTAL				
Operating Temperature Range		-20°C ~ +60°C		
Maximum Case Temperature		+90°C		
Operating Altitude		OVCII(5000m) OVCIII(2000m)		
Vibration	X,Y,Z axes	10-500Hz, 2G 10min./cycle,60min.		
MTBF	T=+25°C T=+40°C	700,000 hours 600,000 hours		
Design Lifetime	230VAC/50Hz 100% load	T=+25°C	5V _{OUT}	40,000 hours
			12V _{OUT}	50,000 hours
			24V _{OUT}	60,000 hours
		T=+40°C	5V _{OUT}	25,000 hours
			12V _{OUT}	30,000 hours
			24V _{OUT}	40,000 hours

Dimensions



Derating Graph



Efficiency vs. Load

