



# AC/DC Converter

## TGC03-K/SMD



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# TGC03-K/SMD

## Features

## Regulated Converter

- 1 Inch<sup>2</sup> footprint for the tiniest 3 watt module
- Standby mode optimized (Ecodesign Lot 6)
- No load power consumption <150mW
- Operating temperature range: -40°C to +80°C
- Household IEC/EN60335
- EMC compliance without external components



## Description

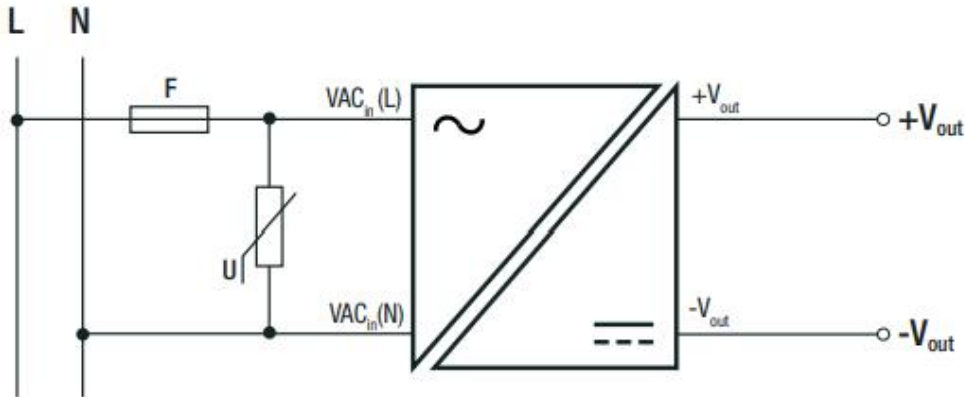
The TGC03-K/SMD series are the smallest 3 watt solution on the market. In a compact 1in2 footprint, these modules deliver an output power of 3 watts from -40°C to 60°C and 2 watts up to 80°C. Despite such a high power density and small footprint, the RAC03-K series is a complete solution supporting Ecodesign Lot 6 standby mode operation for worldwide applications in automation, industry 4.0, IoT, household, and home automation. With an input voltage range from 85 to 264VAC and international safety certifications for industrial, domestic, ITE, and household applications, these are some of the most versatile power modules on the market. Due to their reinforced class II installation rating and their significantly wide margin to class B emissions compliance without external components, these are the easiest to use modular power solutions in the industry

Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

BASIC CHARACTERISTICS					
Parameter	Condition		Min.	Typ.	Max.
Internal Input Filter					PI type
Input Voltage Range <sup>(2,3)</sup>	nom. Vin = 230VAC		85VAC 120VDC	230VAC	264VAC 370VDC
Input Current	115VAC 230VAC				80mA 40mA
Inrush Current	cold start at +25°C	115VAC 230VAC			10A 20A
No load Power Consumption	230VAC			100mW	150mW
ErP Standby Mode Conformity (Output Load Capability)	Input Power= 0.5W 1W				0.3W 0.7W
Input Frequency Range	AC Input		47Hz		63Hz
Minimum Load			0%		
Power Factor	115VAC 230VAC		0.5 0.4		
Start-up Time				20ms	
Rise Time				15ms	
Hold-up Time	115VAC 230VAC			15ms 80ms	
Internal Operating Frequency	100% load at nominal Vin				130kHz
Output Ripple and Noise <sup>(4)</sup>	20MHz BW	3.3Vout, 5Vout all others			60mVp-p 1% of Vout nom.

**Notes:** Note4: No proper operation with DC input voltage Note5: The products were submitted for safety files at AC-Input operation Note6: Refer to "Line Deratin

## Protection Circuitm



ENVIRONMENTAL			
Parameter	Condition		Value
Operating Temperature Range	@ natural convection 0.1m/s	full load refer to "Derating Graph"	-25°C to +60°C -40°C to +80°C
Maximum Case Temperature	230VAC		+95°C
Temperature Coefficient			±0.05%/K
Operating Altitude	according to 62368-1		5000m
Operating Humidity			20% to 90% RH max.
Pollution Degree			PD2
Vibration	according to MIL-STD-202G		10-500kHz, 2G 10min./1cycle, period 60 min. each along x, y, z
MTBF	according to MIL-HDBK-217F, G.B.	+25°C +30°C +40°C	>1977 x 10 <sup>3</sup> hours >1895 x 10 <sup>3</sup> hours >1794 x 10 <sup>3</sup> hours
Design Lifetime	230VAC/60Hz and full load		>40 x 10 <sup>3</sup> hours

## Dimension Drawing (mm)

