



# AC/DC Converter

## TGC04-GA



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# TGC04-GA

## Features

## Regulated Converter

- Universal input 85-305VAC
- 4W PCB mount package
- <75mW No load power consumption
- Ultra low profile, compact size
- -40°C to +85°C Operating temperature
- Continuous SCP, OCP, OVP
- IEC/EN/UL60950 & EN60335-1 certified, EN55032 Class A



## Description

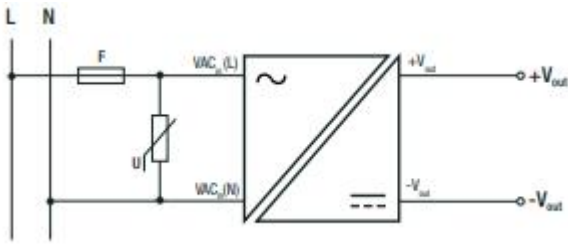
The TGC04-GA series are low cost AC/DC power supplies, ideal for PCB mounted, compact, board level industrial applications. They feature universal AC input voltage range, regulated and short-circuit -proof isolated DC outputs, low standby power consumption and -40°C to +85°C operating temperature range. The RAC04-GA have a built-in Class A / FCC Part 15 EMC filter, are certified to IEC/EN/UL60950-1 and EN60335 and are certified to IEC/EN/UL62368 and EN61558 safety standards and come with a three year warranty.

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>(1,4)</sup>	nom. Vin = 230VDC		85VAC 120VDC		305VAC 430VDC
Input Current	115VAC 230VAC			85mA 55mA	
Inrush Current	cold start at 25°C	115VAC 230VAC			10A 20A
No load Power Consumption					75mW
Input Frequency Range	AC Input		45Hz		65Hz
Minimum Load			0%		
Power Factor	115VAC 230VAC			0.55 0.42	
Start-up Time	115VAC, 230VAC			30ms	1s
Hold-up time	115VAC 230VAC			5ms 40ms	
Internal Operating Frequency	100% load at nominal Vin			65kHz	
Output Ripple and Noise <sup>(5)</sup>	20MHz BW	0°C to 85 °C	5Vout 9Vout 12Vout 24Vout		100mVp-p 120mVp-p 150mVp-p 240mVp-p
		-30 °C to 0 °C	5Vout 9Vout 12Vout 24Vout		200mVp-p 250mVp-p 250mVp-p 300mVp-p

**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

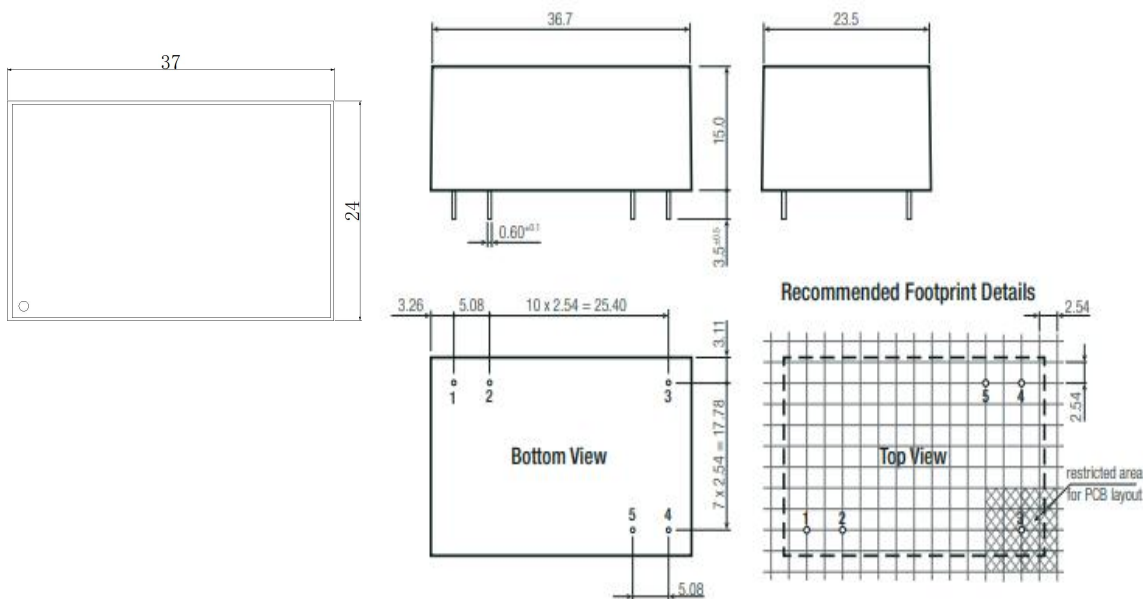
## Protection Circuitm



### Specifications (measured @ $T_a = 25^\circ\text{C}$ , nom. Vin, full load and after warm-up unless otherwise stated)

ENVIRONMENTAL			
Parameter	Condition		Value
Operating Temperature Range	@ natural convection 0.1m/s	full load	-40°C to +70°C
		refer to "Derating Graph"	-40°C to +85°C
Maximum Case Temperature			+100°C
Temperature Coefficient			0.03%/K
Operating Altitude			3000m
Operating Humidity	non-condensing		5% - 95% RH
Pollution Degree			PD2
Shock			20G/11ms pulse, 3 times at each x, y, z axes
Vibration			10-150Hz, 2G 10min./1cycle, period 60min. along x,y,z axes for 6 cycles
Design Lifetime	+25°C		90 x 10 <sup>3</sup> hours
	+50°C		62 x 10 <sup>3</sup> hours
MTBF	according to MIL-HDBK-217F, G.B.	+25°C	>910 x 10 <sup>3</sup> hours
		+50°C	>198 x 10 <sup>3</sup> hours

## Dimension Drawing (mm)



Pin Connections	
Pin #	Single
1	VAC in (L)
2	VAC in (N)
3	NC
4	-Vout
5	+Vout

NC: Not Connected  
Tolerances:  
xx.x= ±0.5mm  
x.xx= ±0.25mm