SGS-THOMSON MICROELECTRONICS

GS5AC-40

ISDN AC-DC CONVERTER

PRELIMINARY DATA

Type	V_i	V_o	I_o
GS5AC-40	180 to 264 V	out 1: 40 V	110 mA
		out 2: 40 V	10 mA

FEATURES

- Large Input voltage range: 180 to 264 V_{RMS}
- Input filter to meet EMI requirements
- Peak input overvoltage whitstanding
- Input fuse
- Input to output insulation
- 2 insulated outputs:
  Vo1 = 35 to 42 V for "S" interface
  Vo2 = 36 to 47 V for external relay and LED driver
- "S" interface output characteristics:
  Peak output of 8 W for 150 ms
  Typical output power: 4,5 W
  Output filtering to meet ETSI requirements
  Hold up time: 20 ms with 4,5 W output power
  Continuous short circuit protection
  Peak overvoltage withstand: 250 V for 10/700 µs
- Mechanical dimensions (LxWxH): 80x43x30 mm

DESCRIPTION

The GS5AC-40 converter has been designed for an ISDN-NTBA (Network Termination Basic Access) system with either 4B3T or 2B1Q standard trasmission.

The converter is able to deliver 40V/110 mA for "S" interface and is equipped also with a second, auxiliary 40V/10 mA output for relay and LED driving. The converter offers short-circuit protection on both outputs (short-circuit on 40V output doesn't affect relay/LED output and the input power never exceeds the limit of 15 W) and also provides to remove the auxiliary (relay & LED) output when the mains is missing, thus allowing the use of a second "emergency" voltage source (relay contacts are released). 3000 V_{RMS} insulation voltage for 60 seconds is provided between input and the outputs. Output 1 and Output 2 share the same common ground (pin 4 is internally connected with pin 6).

The design of the module has been conducted using, as reference standards, the following:

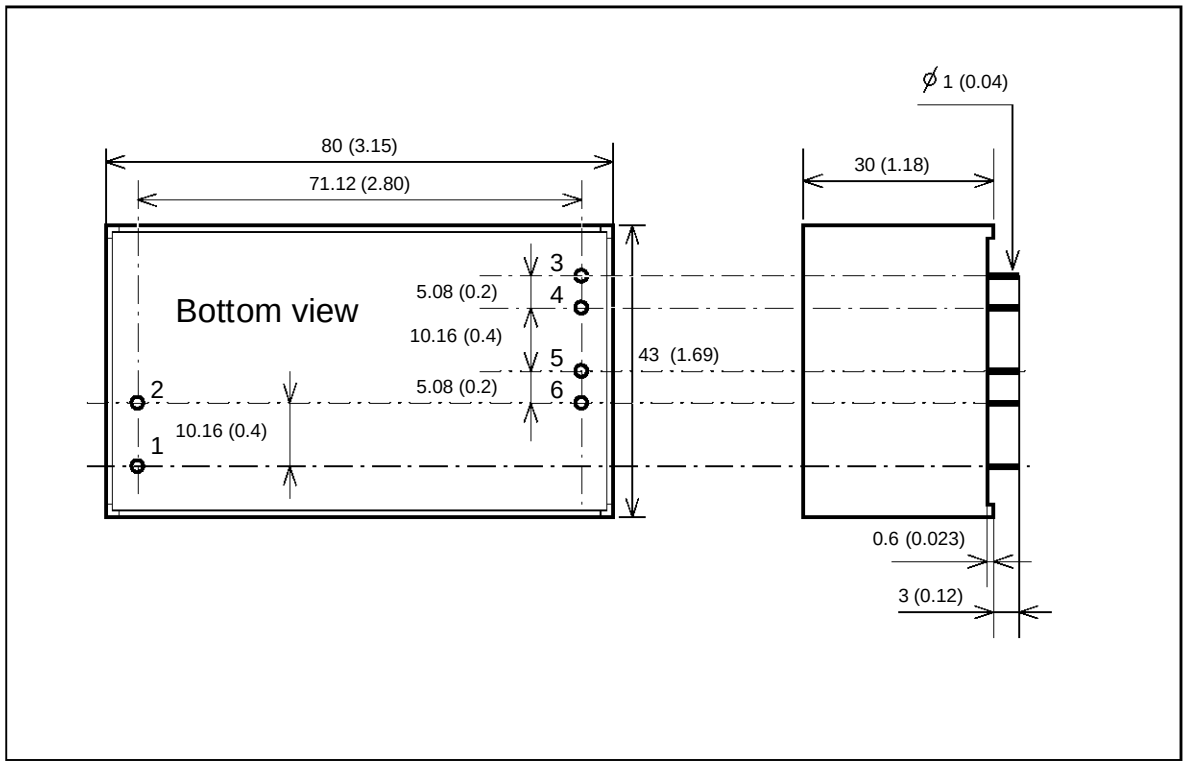
EN 60950, VDE0878 part 1 class B (EMC), EN55022 class B (EMC), CCITT 430, ETS 300 012 and ETS 300 047 (ISDN BASIC ACCESS, Safety and Protection); anyway, please note that no certification processes have been carried out on the module itself.

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Std. Conditions: **Vin = 180 to 264 V_{RMS}**
Po1 = 0 to 4.5 W Io2 = 0 to 10 mA Vo2 = 36 to 47 V

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V_i	Input Voltage		180		264	V_{RMS}
fi	Input Frequency	Vi = 230 V_{RMS}	43		56	Hz
Pi	Input Power	Standard Conditions		7		W
Pi	Input Power	Abnormal Conditions			15	W
Vist	Start up Input Voltage	Output parameters as per Standard Conditions	100		150	V_{RMS}
V_{o1}	Output Voltage 1	Standard Conditions	36	38	42	V
V_{o2}	Output Voltage 2	Standard Conditions	36	38	47	V
V_{o2}	Output Voltage 2	Emergency Conditions	0		1	V
Vor1	Output Ripple Voltage 1	Standard Conditions BW: 0 - 20 MHz			100	mV_{RMS}
Io1	Output Current 1	Standard Conditions	0		110	mA
Ioo1	Output Overcurrent	t = 150 ms, Vo1 = 35.5 to 42 V at Switch-On	180		250	mA
Io1sc	Output 1 short circuit current		10	50	80	mA
Io2	Output current 2	Standard Conditions	0		10	mA
Vo1pf	Power Fail Vo1 threshold	Vo2 fails below 1 V	35.5		36.5	V
Vipf	Power Fail Vi threshold	Output parameters as per Standard Conditions		150	180	V_{RMS}
Vipk	Input Transient Overvoltage	t = 10/700 µs	2.5			kV
Vo1pk	Out 1 Transient Overvoltage	t = 10/700 µs	250			V
Vis	Insulation Voltage	Input to outputs, t=60 s	3000			V_{RMS}
Vis	Insulation Voltage (pulse)	Input to outputs, t = 10/700 µs (pulse)	4			kV
th	Hold-up time	Vin = 180 V_{RMS} Loads as per Std. Conditions	20			ms
MTBF	Mean Time Before Failure	Ground Fixed, MIL-HDBK-217E	1			Mhours
Top	Operating Ambient Temperature Range		-5		+70	°C
Tstg	Storage Temperature Range		- 40		+85	°C

Figure 1. Connection diagram and mechanical data



PIN DESCRIPTION

Pin	Function	Description
1	AC Input	Mains input
2	AC Input	Mains input
3	+Vo1	+ 40 V Output for ”S” interface
4 & 6	- Vo1 & -Vo2	Output Common Ground
5	+ Vo2	+ External Relay & LED driver

Figure 2. Typical application example