

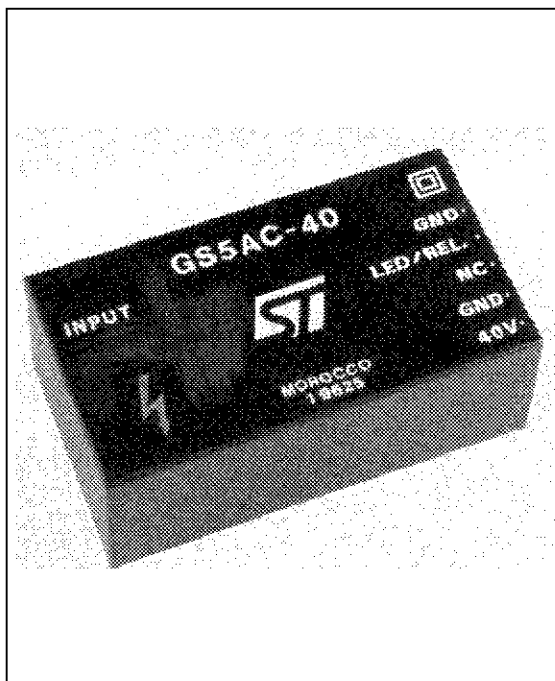
## ISDN AC-DC CONVERTER

PRELIMINARY DATA

Type	V <sub>i</sub>	V <sub>o</sub>	I <sub>o</sub>
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<sub>RMS</sub>
- Input filter to meet EMI requirements
- Peak input overvoltage withstanding
- 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 transmission.

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<sub>RMS</sub> 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.

## GS5AC-40

### ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25^{\circ}\text{C}$ unless otherwise specified)

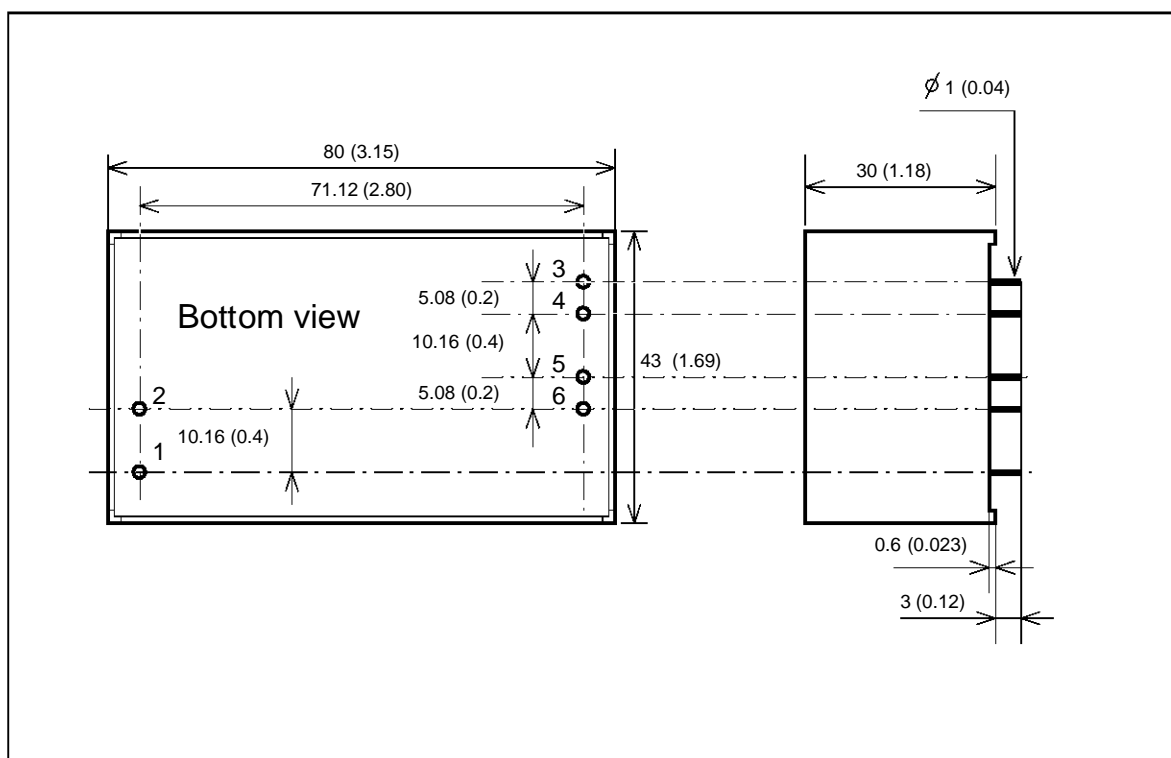
Std. Conditions:

**$V_{in} = 180$  to  $264\text{ V}_{RMS}$**

**$P_{o1} = 0$  to  $4.5\text{ W}$     $I_{o2} = 0$  to  $10\text{ mA}$     $V_{o2} = 36$  to  $47\text{ V}$**

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$V_i$	Input Voltage		180		264	$\text{V}_{RMS}$
$f_i$	Input Frequency	$V_i = 230\text{ V}_{RMS}$	43		56	Hz
$P_i$	Input Power	Standard Conditions		7		W
$P_i$	Input Power	Abnormal Conditions			15	W
$V_{ist}$	Start up Input Voltage	Output parameters as per Standard Conditions	100		150	$\text{V}_{RMS}$
$V_{o1}$	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
$V_{or1}$	Output Ripple Voltage 1	Standard Conditions BW: 0 - 20 MHz			100	m $\text{V}_{RMS}$
$I_{o1}$	Output Current 1	Standard Conditions	0		110	mA
$I_{oo1}$	Output Overcurrent	$t = 150\text{ ms}$ , $V_{o1} = 35.5$ to $42\text{ V}$ at Switch-On	180		250	mA
$I_{o1sc}$	Output 1 short circuit current		10	50	80	mA
$I_{o2}$	Output current 2	Standard Conditions	0		10	mA
$V_{o1pf}$	Power Fail $V_{o1}$ threshold	$V_{o2}$ fails below 1 V	35.5		36.5	V
$V_{ipf}$	Power Fail $V_i$ threshold	Output parameters as per Standard Conditions		150	180	$\text{V}_{RMS}$
$V_{ipk}$	Input Transient Overvoltage	$t = 10/700\text{ }\mu\text{s}$	2.5			kV
$V_{o1pk}$	Out 1 Transient Overvoltage	$t = 10/700\text{ }\mu\text{s}$	250			V
$V_{is}$	Insulation Voltage	Input to outputs, $t=60\text{ s}$	3000			$\text{V}_{RMS}$
$V_{is}$	Insulation Voltage (pulse)	Input to outputs, $t = 10/700\text{ }\mu\text{s}$ (pulse)	4			kV
$t_h$	Hold-up time	$V_{in} = 180\text{ V}_{RMS}$ Loads as per Std. Conditions	20			ms
MTBF	Mean Time Before Failure	Ground Fixed, MIL-HDBK-217E	1			Mhours
$T_{op}$	Operating Ambient Temperature Range		-5		+70	$^{\circ}\text{C}$
$T_{stg}$	Storage Temperature Range		- 40		+85	$^{\circ}\text{C}$

Figure 1. Connection diagram and mechanical data

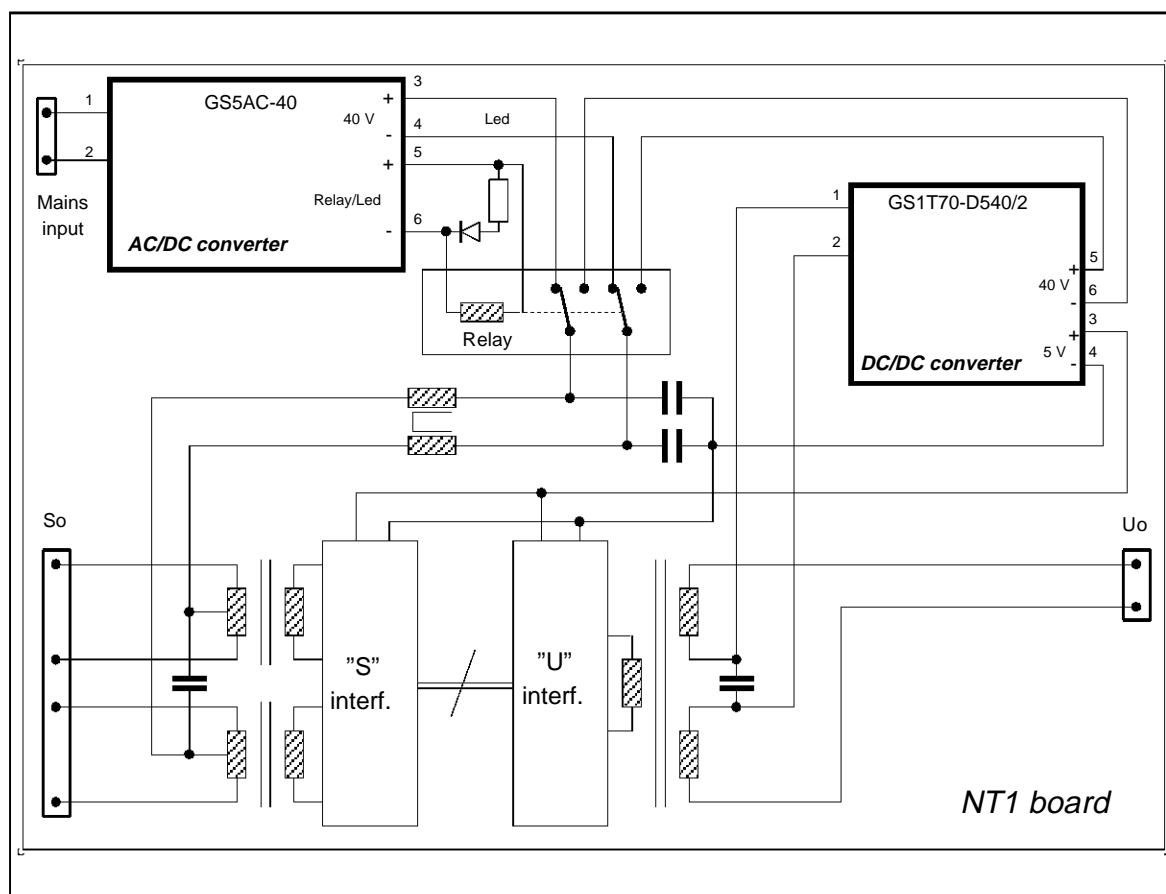


## PIN DESCRIPTION

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

## GS5AC-40

**Figure 2.** Typical application example



Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specification mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1997 SGS-THOMSON Microelectronics – All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - China - Canada - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.