

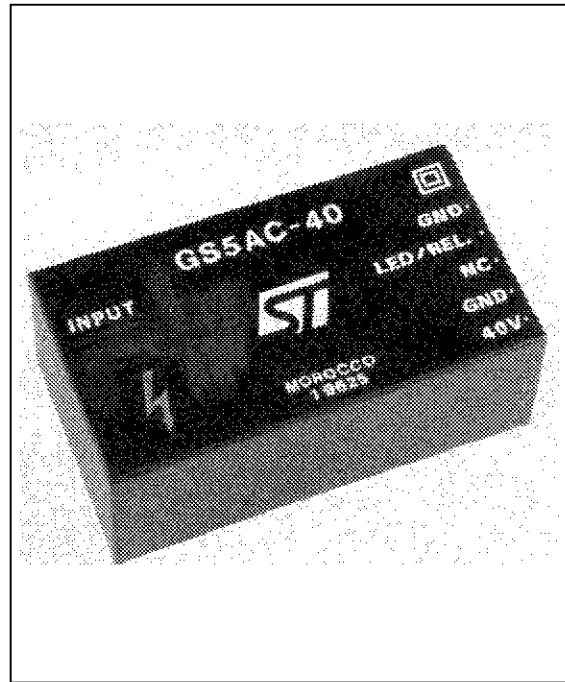
ISDN AC-DC CONVERTER

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.

GS5AC-40

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

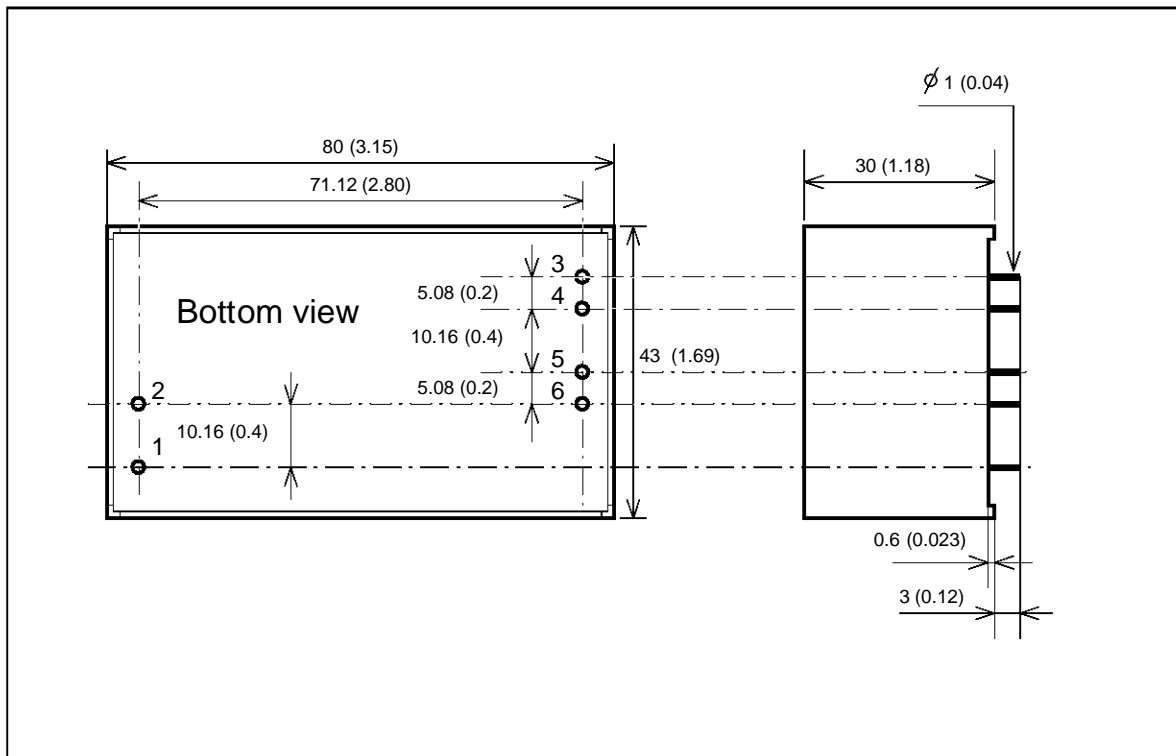
Std. Conditions:

$V_{in} = 180$ to 264 V_{RMS}

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

| Symbol | Parameter | Test Conditions | Min | Typ | Max | Unit |
|------------|-------------------------------------|--|------|-----|------|--------------------|
| V_i | Input Voltage | | 180 | | 264 | VRMS |
| f_i | Input Frequency | $V_i = 230\text{ VRMS}$ | 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 | VRMS |
| 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 | mVRMS |
| I_{o1} | Output Current 1 | Standard Conditions | 0 | | 110 | mA |
| I_{oo1} | Output Overcurrent | $t = 150\text{ ms}$, $V_{o1} = 35.5$ to 42 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 | VRMS |
| 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 | | | VRMS |
| V_{is} | Insulation Voltage (pulse) | Input to outputs, $t = 10/700\text{ }\mu\text{s}$ (pulse) | 4 | | | kV |
| t_h | Hold-up time | $V_{in} = 180\text{ VRMS}$ 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

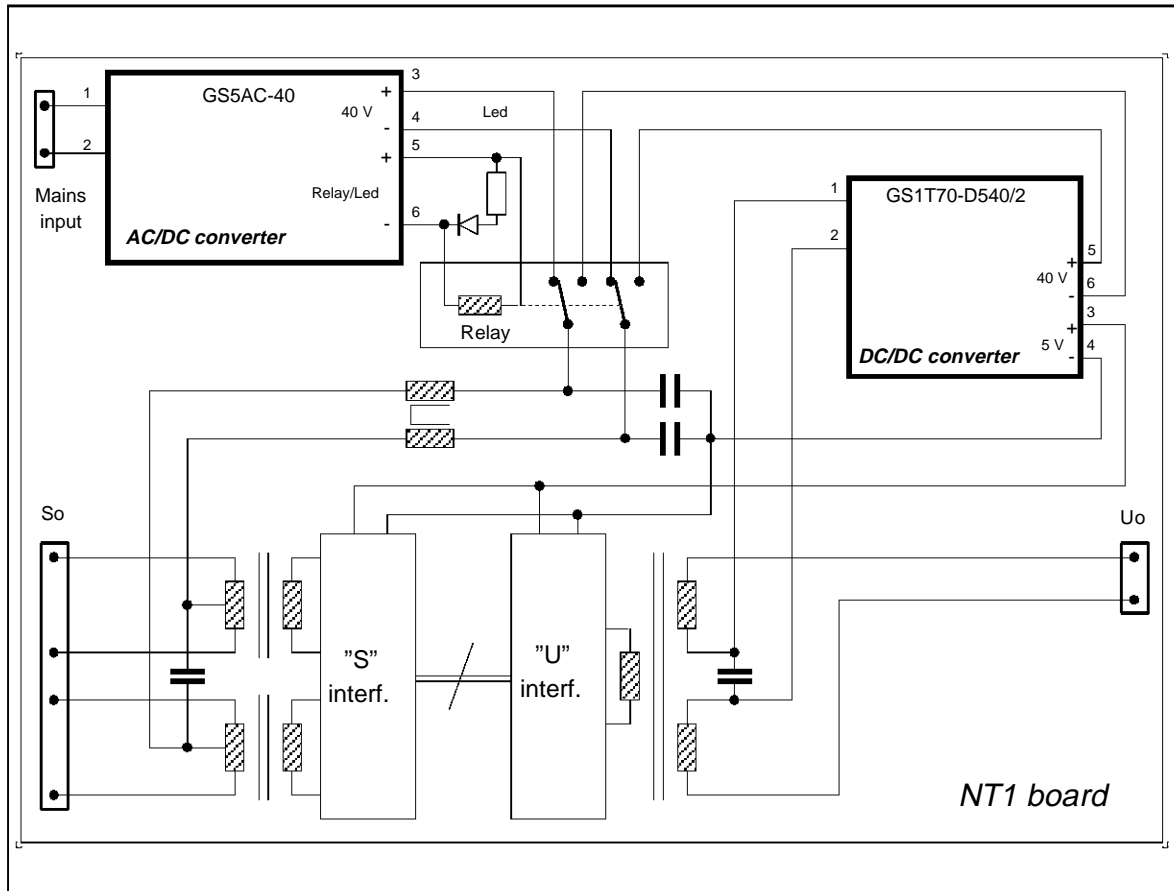


PIN DESCRIPTION

| 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.