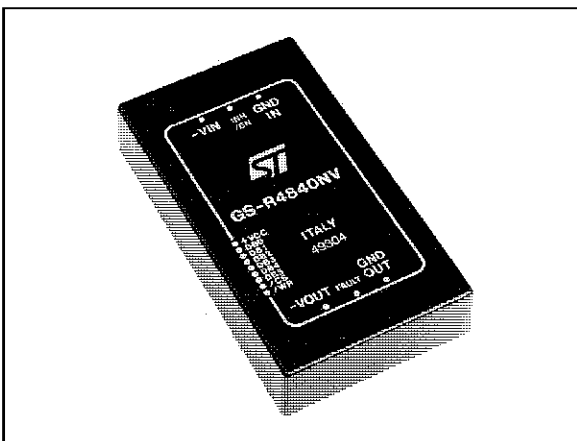


36 W NEGATIVE SWITCHING REGULATOR

Type	V _{in}	V _{out}	I _{out}
GS-R4840NV	-40 to -60 V	-22 to -60 V	-600 mA

FEATURES

- Digital input for voltage selection
- Short-circuit protection
- Overvoltage protection
- Thermal protection
- Softstart
- Fault signal indication output
- High efficiency (>80%)



DESCRIPTION

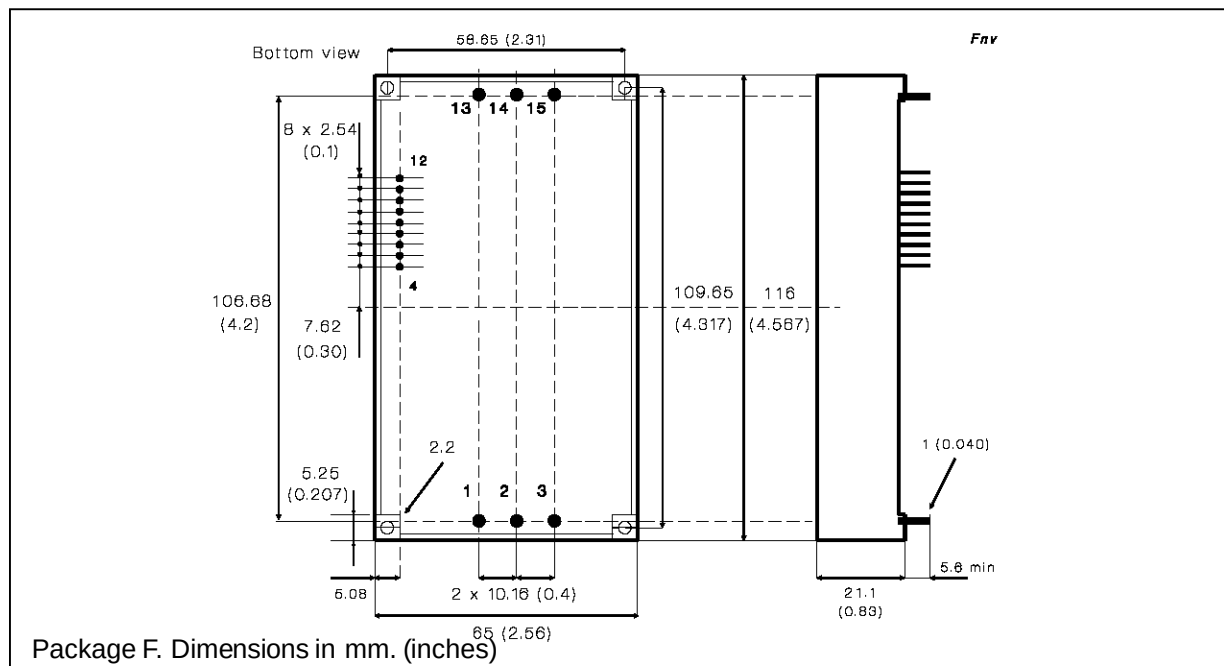
The GS-R4840NV is a negative input, negative output switching voltage regulator that provides up to 36W output power without input-output isolation.

The output voltage is programmable by input logic signals that allow 64 steps (6 bit) of regulated output, from -22 to -60V.

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

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V _i	Input Voltage	V _o = -22 to -60V I _o = -10 to -600mA	-40	-48	-60	V
V _{ir}	Input Ripple Voltage	V _i = -40 to -60V I _o = -600mA			20	mVpp
V _o	Output Voltage	V _i = -40 to -60V I _o = -10 to -600mA	-22		-60	V
V _{or}	Output Ripple Voltage	V _o = -22 to -60V I _o = -600mA		4	10	mVpp
V _{oov}	Output Overvoltage Protection	V _i = -40 to -60V I _o = -10 to -600mA	V _o +5%		V _o +10%	V
I _o	Output Current	V _i = -40 to -60V V _o = -22 to -60V	-10		-600	mA
I _{ol}	Current Limit	V _i = -40 to -60V Overload Condition			-900	mA
I _{osc}	Output Average Short Circ. Current	V _i = -40 to -60V			-80	mA
f _s	Switching Frequency			100		kHz
η	Efficiency	V _i = -48V I _o = -600mA V _o = -48V	80	82		%
R _{th}	Thermal Resistance	Case to Ambient		4		°C/W
T _{cop}	Operating Case Temperature Range		0		+85	°C
T _{stg}	Storage Temperature Range		-20		+105	°C

CONNECTION DIAGRAM AND MECHANICAL DATA



PIN DESCRIPTION

Pin	Function	Description
1	-Vin	Negative input voltage.
2	Inhibit/ Enable	Remote Inhibit/Enable logically compatible with CMOS or open collector TTL. The converter is OFF (Inhibit) when this pin is unconnected or the voltage applied is in the range of 2 to 5V (referred to GND). The converter is ON (Enable) for a control voltage in the range of 0 to 0.8V maximum.
3	GND IN	Return for input voltage source and +5V logic supply voltage. Internally connected to pin 15.
4	+5V IN	+5V logic supply voltage. Maximum voltage must not exceed 7V.
5	DB0	Data bit 0 (LSB).
6	DB1	Data bit 1.
7	DB2	Data bit 2.
8	DB3	Data bit 3.
9	DB4	Data bit 4.
10	DB5	Data bit 5 (MSB).
11	$\overline{CS}$	Chip select. An active low input control which is the device enable input terminal.
12	$\overline{WR}$	Write control. An active low control which enables the microprocessor to write data to the DAC.
13	-Vout	Negative output voltage.
14	FAULT	FAULT indication output (referred to GND). The FAULT signal is high (TTL compatible level) when: - the INHIBIT is ON (high) - an output overload is present ($V_o < 18V$ typ.) - an overtemperature is present - an overvoltage is present ($V_o > V_o + 5\%$)
15	GND OUT	Return for output voltage source. Internally connected to pin 3.

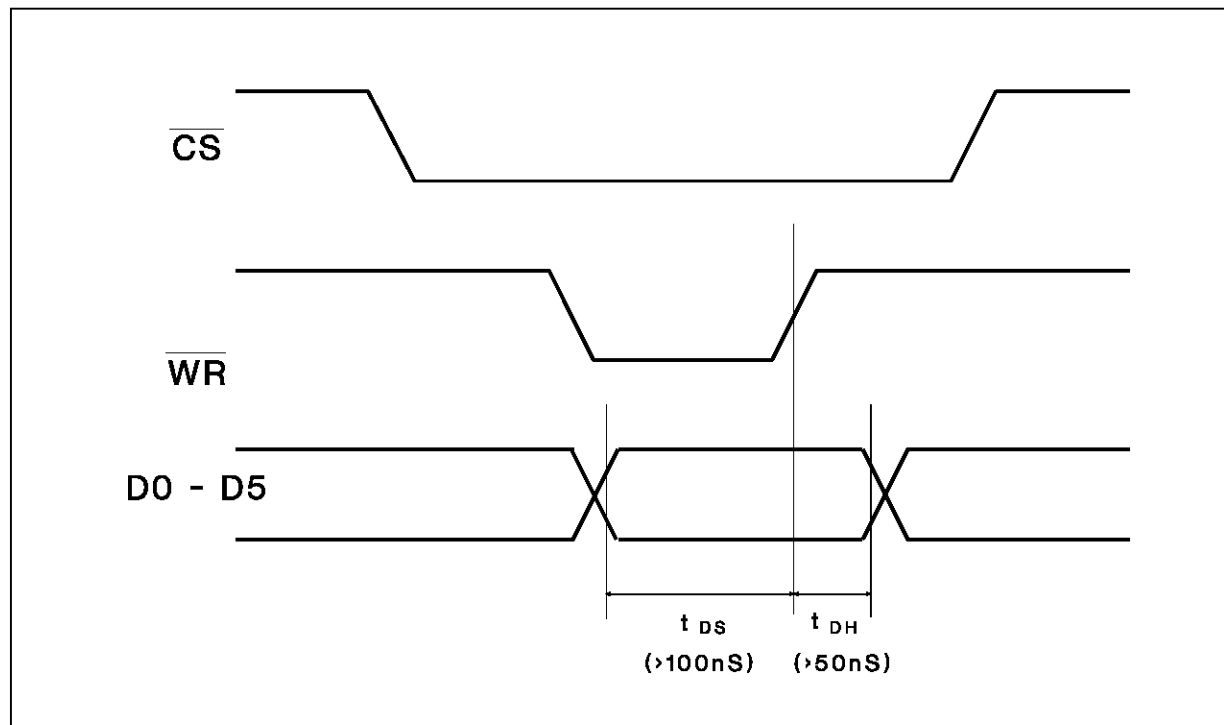
Note: Case internally connected to Ground.

USER NOTES**Digital Information**

The GS-R4840NV accepts 6 bit binary at the data inputs DB0 to DB5. Data are transferred when CS is low and during the rising edge of WR signal.

t_{DS} and t_{DH} have to be 100ns and 50ns minimum respectively (see fig. 1).

Figure 1 - Signals Timing.



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.

© 1994 SGS-THOMSON Microelectronics – All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

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