

GS-R4840NV

36 W NEGATIVE SWITCHING REGULATOR

Туре	V _{in}	V _{out}	l _{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.

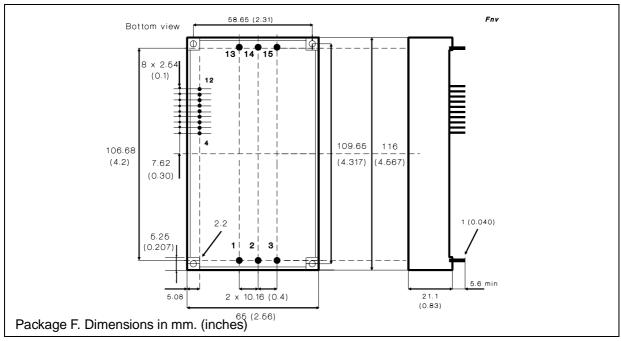
The output voltage is programmable by input logic signals that allow 64 steps (6 bit) of regulated output, from -22 to -60V.

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

Symbol	Parameter	Test Conditions	Min	Тур	Max	Unit
Vi	Input Voltage	V _O = -22 to -60V I _O = -10 to -600mA	-40	-48	-60	V
Vir	Input Ripple Voltage	$V_i = -40 \text{ to } -60 \text{V}$ $I_O = -600 \text{mA}$			20	mVpp
Vo	Output Voltage	$V_i = -40 \text{ to } -60 \text{V}$ $I_0 = -10 \text{ to } -600 \text{mA}$	-22		-60	V
Vor	Output Ripple Voltage	V ₀ = -22 to -60V I ₀ = -600mA		4	10	mVpp
Voov	Output Overvoltage Protection	Vi = -40 to -60V I _O = -10 to -600mA	Vo+5%		Vo+10%	V
lo	Output Current	$V_i = -40 \text{ to } -60 \text{V}$ $V_0 = -22 \text{ to } -60 \text{V}$	-10		-600	mA
lol	Current Limit	V _i = -40 to -60V Overload Condition			-900	mA
losc	Output Average Short Circ. Current	$V_i = -40 \text{ to } -60 \text{V}$			-80	mA
fs	Switching Frequency			100		kHz
η	Efficiency	V _i = -48V V _O = -48V	80	82		%
Rth	Thermal Resistance	Case to Ambient		4		°C/W
Тсор	Operating Case Temperature Range		0		+85	°C
T _{stg}	Storage Temperature Range		-20		+105	°C

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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	CS	Chip select. An active low input control which is the device enable input terminal.
12	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 (Vo < 18V typ.) - an overtemperature is present - an overvoltage is present (Vo > Vo+5%)
15	GND OUT	Return for output voltage source. Internally connected to pin 3.

Note: Case internally connected to Ground.



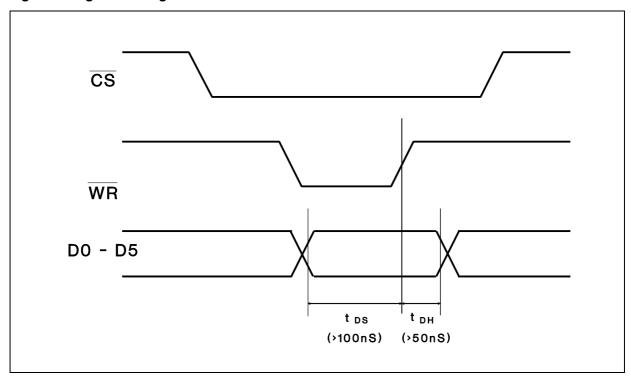
USER NOTES

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.

tDS and tDH have to be 100ns and 50ns minimum respectively (see fig. 1).

Figure 1 - Signals Timing.



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