



# 15 W DC-DC CONVERTER FOR ECL

Туре	V <sub>in</sub>	V <sub>out</sub>	l <sub>out</sub>
GS15T5-5.2	5 V	5,2 V	3 A

### **DESCRIPTION**

The GS15T5-5.2 is a 15W DC-DC converter designed to provide a 5.2V isolated output from a 5V input.

The device can operate with an output current in the range of 0.0 to 3.0A without any intermittent operation (packet switching).

It offers short-circuit protection and input-output isolation of 750V<sub>DC</sub> minimum. The integral heatsink allows a large power handling capability and it provides also an effective shielding to minimize EMI.

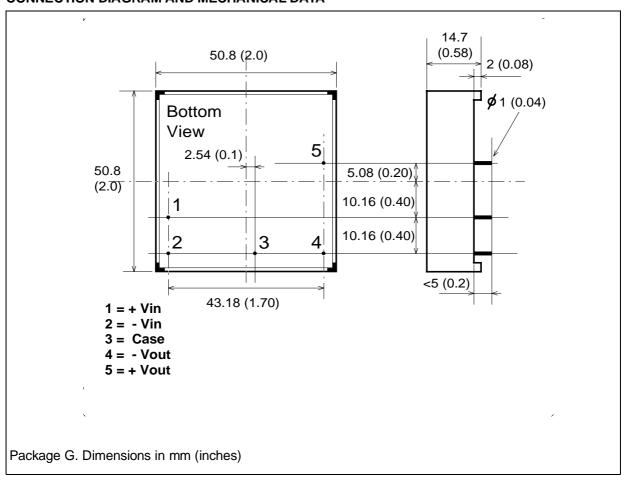


# ELECTRICAL CHARACTERISTICS (Tamb. = 25° C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Тур	Max	Unit
Vi	Input Voltage	$V_0 = 5.2V$ $I_0 = 0.0 \text{ to } 3.0\text{A}$	4.75	5.0	5.35	V
lir	Input Reflected Current	$V_i = 5.0V$ $V_0 = 5.2V$ $I_0 = 3.0A$		40	50	mApp
liq	Input Quiescent Current	$V_i = 5.0V$ $V_0 = 5.2V$ $I_0 = 0.0A$		87	95	mA
Vo	Output Voltage	V <sub>i</sub> = 4.75 to 5.25V I <sub>0</sub> = 0.0 to 3.0A	5.04	5.2	5.36	V
lo	Output Current	V <sub>i</sub> = 4.75 to 5.25V	0.0		3.0	Α
δVol	Line Regulation	V <sub>i</sub> = 4.75 to 5.25V I <sub>O</sub> = 3.0A		1	10	mV
δVοο	Load Regulation	$V_i = 5.0V$ $I_0 = 0.0 \text{ to } 3.0A$		10	15	mV
Vor	Output Ripple Voltage	$V_i = 5.0V$ $I_0 = 3.0A$		20	30	mVpp
Vor	Output Ripple Voltage	V <sub>i</sub> = 5.0V I <sub>O</sub> = 3.0A		8		mVRMS
losc	Output Short-circuit Current	Vi = 5.0V			4.75	А
Vis	Isolation Voltage		750			V <sub>DC</sub>
fs	Switching Frequency	V <sub>i</sub> = 4.75 to 5.25V I <sub>0</sub> = 0.0 to 3.0A		100		kHz
η	Efficiency	$V_i = 5.0V$ $I_0 = 3.0A$	77	79		%
Rthc	Thermal Resistance Case to Ambient	Tamb.= 25°C Vi = 5.0V Io = 3.0A		8		°C/W
T <sub>C</sub>	Maximum Case Temperature				90	°C
Tstg	Storage Temperature Range		-40		+105	°C

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#### **CONNECTION DIAGRAM AND MECHANICAL DATA**



#### **USER NOTES**

## **Thermal Characteristics**

Worst case power dissipation at full load is less than 5W

To operate the device at an ambient temperature of 60 °C the thermal resistance case-to-ambient must be lower than 6.5 °C/W.

This can be accomplished by adding an external heatsink or by forced ventilation with air speed of about 100 linear feet/minute.

#### **MTBF Calculations**

The MTBF according to MIL HDBK-217E calculation for a ground benign environment is:

- 216k hours for a case temperature of 91 °C.
- 379k hours for a case temperature of 60 °C.

This last condition can be obtained at T<sub>amb</sub>.= 40 °C and forced ventilation of 100 feet/minute.

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