

## 15 W DC-DC CONVERTER FOR ECL

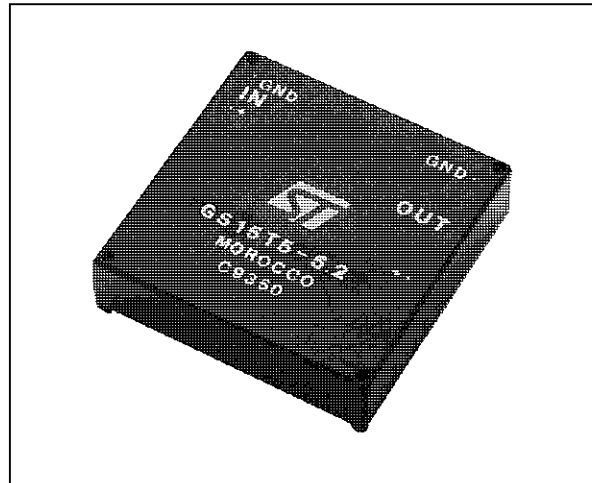
Type	V <sub>in</sub>	V <sub>out</sub>	I <sub>out</sub>
GS15T5-5.2	5 V	5,2 V	3 A

### 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).

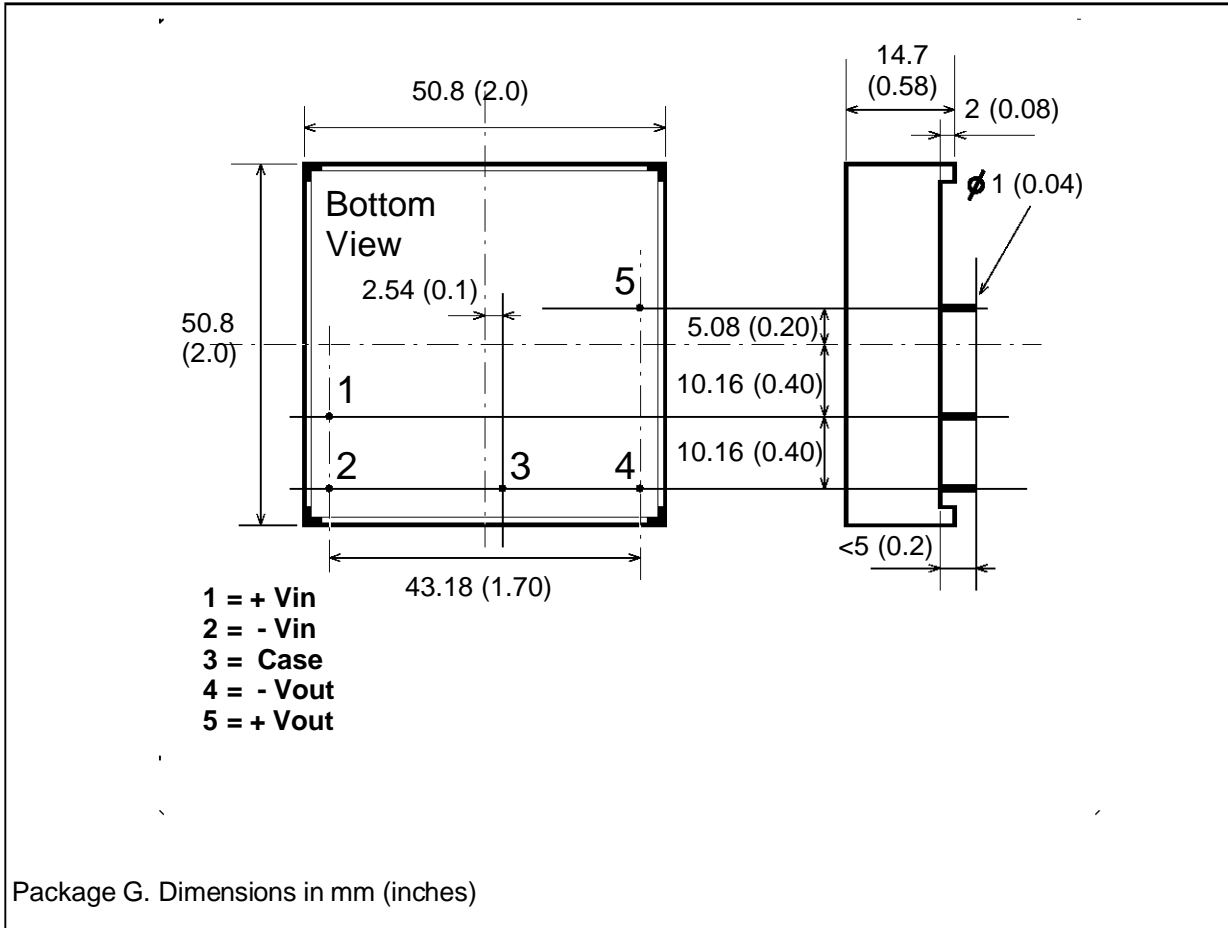
It offers short-circuit protection and input-output isolation of 750V<sub>DC</sub> minimum. The integral heatsink allows a large power handling capability and it provides also an effective shielding to minimize EMI.



### ELECTRICAL CHARACTERISTICS (T<sub>amb.</sub> = 25° C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V <sub>i</sub>	Input Voltage	V <sub>o</sub> = 5.2V I <sub>o</sub> = 0.0 to 3.0A	4.75	5.0	5.35	V
I <sub>ir</sub>	Input Reflected Current	V <sub>i</sub> = 5.0V V <sub>o</sub> = 5.2V I <sub>o</sub> = 3.0A		40	50	mApp
I <sub>iq</sub>	Input Quiescent Current	V <sub>i</sub> = 5.0V V <sub>o</sub> = 5.2V I <sub>o</sub> = 0.0A		87	95	mA
V <sub>o</sub>	Output Voltage	V <sub>i</sub> = 4.75 to 5.25V I <sub>o</sub> = 0.0 to 3.0A	5.04	5.2	5.36	V
I <sub>o</sub>	Output Current	V <sub>i</sub> = 4.75 to 5.25V	0.0		3.0	A
δV <sub>OL</sub>	Line Regulation	V <sub>i</sub> = 4.75 to 5.25V I <sub>o</sub> = 3.0A		1	10	mV
δV <sub>OO</sub>	Load Regulation	V <sub>i</sub> = 5.0V I <sub>o</sub> = 0.0 to 3.0A		10	15	mV
V <sub>or</sub>	Output Ripple Voltage	V <sub>i</sub> = 5.0V I <sub>o</sub> = 3.0A		20	30	mV <sub>pp</sub>
V <sub>or</sub>	Output Ripple Voltage	V <sub>i</sub> = 5.0V I <sub>o</sub> = 3.0A		8		mV <sub>RMS</sub>
I <sub>osc</sub>	Output Short-circuit Current	V <sub>i</sub> = 5.0V			4.75	A
V <sub>is</sub>	Isolation Voltage		750			V <sub>DC</sub>
f <sub>s</sub>	Switching Frequency	V <sub>i</sub> = 4.75 to 5.25V I <sub>o</sub> = 0.0 to 3.0A		100		kHz
η	Efficiency	V <sub>i</sub> = 5.0V I <sub>o</sub> = 3.0A	77	79		%
R <sub>thc</sub>	Thermal Resistance Case to Ambient	T <sub>amb.</sub> = 25°C V <sub>i</sub> = 5.0V I <sub>o</sub> = 3.0A		8		°C/W
T <sub>c</sub>	Maximum Case Temperature				90	°C
T <sub>stg</sub>	Storage Temperature Range		- 40		+105	°C

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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