

15 W DC-DC CONVERTER FOR ECL

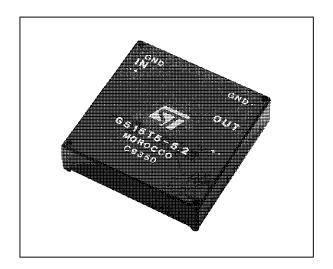
Туре	V _{in}	V _{out}	l _{out}
GS15T5-5.2	5 V	5,2 V	3 A

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 750VDC minimum. The integral heatsink allows a large power handling capability and it provides also an effective shielding to minimize EMI.

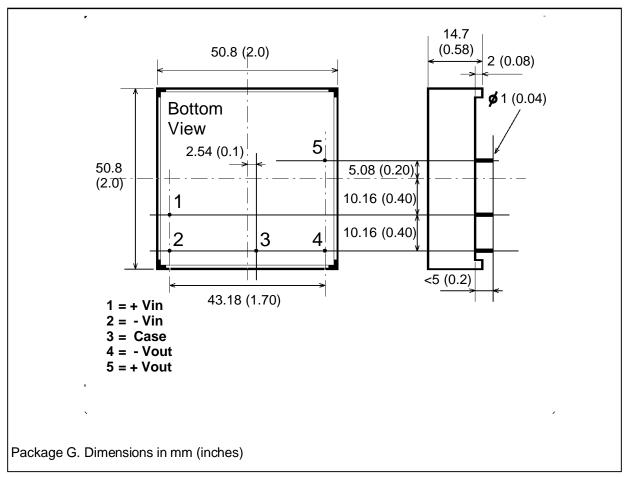


ELECTRICAL CHARACTERISTICS (T_{amb.}= 25° C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Тур	Max	Unit
Vi	Input Voltage	V ₀ = 5.2V I ₀ = 0.0 to 3.0A	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 _i = 4.75 to 5.25V I ₀ = 0.0 to 3.0A	5.04	5.2	5.36	V
lo	Output Current	Vi = 4.75 to 5.25V	0.0		3.0	Α
δVol	Line Regulation	Vi = 4.75 to 5.25V I _O = 3.0A		1	10	mV
δVoo	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	m∨pp
Vor	Output Ripple Voltage	V _i = 5.0V I _O = 3.0A		8		mVRMS
losc	Output Short-circuit Current	Vi = 5.0V			4.75	A
Vis	Isolation Voltage		750			V _{DC}
fs	Switching Frequency	V _i = 4.75 to 5.25V I ₀ = 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 _C	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_{amb}.= 40 °C and forced ventilation of 100 feet/minute.

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