B3LT1668
Marine 25 kW Limiter with STC

DESCRIPTION

X-band marine radar solid-state 25 kW high power limiter with an integral filter for protection against magnetron generated spurious signals. A triggered STC generator circuit is provided.

CHARACTERISTICS (at 20 °C ambient, see notes 1 and 6)

Frequency	9.36 to 9.46	GHz
Return loss	20	dB min
Insertion loss	1	dB max
Total peak leakage (P_o – 25 kW)	100	mW max
Recovery to -3 dB (P_o – 25 kW)	1.3	µs max
STC maximum (see note 2)	20	dB
STC response:		
at 3.0 µs (see note 3)	10.0 ± 1.5	dB
at 11 µs	1.5	dB max
Clutter saturation (see note 4)	3	dB max
STC bias voltage (see note 5)	4.25	V min

MAXIMUM AND MINIMUM RATINGS

	Min	Max	
Peak continuous operating power	-	25	kW
Mean operating power	-	25	W
Pulse duration	-	1.5	µs
Duty ratio	-	0.001	
STC circuit supply	11.5	12.5	V
STC trigger pulse	3.5	5.5	V
Storage temperature	-55	90	°C
Operating temperature (see note 6)	-40	90	°C

GENERAL (see note 7)

Outline	B3LT1668_SHT3
Overall dimensions	49 x 41 x 35 mm
Waveguide size	WG16, WR90
Connectors:	
waveguide	mates with UG39/U
STC circuit	Lumberg 2.5MBC 3
Pin 1	supply
Pin 2	trigger
Pin 3	earth
Mounting position (see note 8)	any
Net weight	0.1 kg approx.

NOTES

1. High power tests measured at 9.4 GHz, tp 0.1 µs, Du 0.001. STC tests measured at 9.4 GHz, V_S +12 V, V_P +3.5 V, tp 2 µs.
2. Attenuation level that the maximum attenuation from the STC generator circuit can be set to by variable resistor RV1.
3. Measured from the start of the STC ramp with maximum attenuation of 20 dB.
4. Change in the maximum attenuation of the STC curve due to 10 mW of incident power.
5. Voltage at the cathode of D1A then the attenuation is 20 dB. Design parameter only.
6. Maximum and minimum characteristic values may be exceeded at the temperature extremes. Contact e2v for details.
7. The components on the STC generator circuit are exposed and are static sensitive. Correct procedures for handling such components are to be adhered to.
8. The STC circuit cable must be clamped on installation to minimise damage resulting from excessive flexing. The limiter must be mounted so that the EMC effects are contained.

The design of the STC generator circuit and cable are the property of Litton Marine Systems BV and e2v technologies (uk) limited take no responsibility for the performance of this design.

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