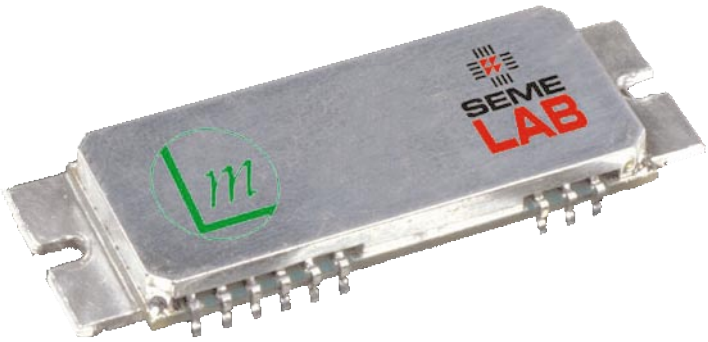
LMP1603

VHF SILICON MOSFET POWER AMPLIFIER MODULE



5.5W , 7.2V
150MHz — 162MHz

FEATURES

- **HIGH OUTPUT POWER (5.5W min.)**
- **HIGH EFFICIENCY (> 38%)**
- **LOW INTERMODULATION DISTORTION (< -25dBc)**
- **OPERATION FROM 7.2V SUPPLY**
- **INTEGRAL ENABLE / DISABLE CONTROL**
- **UNCONDITIONALLY STABLE FOR ALL LOADS UP TO 5:1 VSWR**
- **50Ω INPUT/OUTPUT IMPEDANCE**
- **RUGGED CONSTRUCTION**
- **COPPER HEATSINK FOR EXCELLENT THERMAL DISSIPATION**

APPLICATIONS

- PMR / PAMR / LMR Systems.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

Absolute Maximum Supply Voltage	10V
Maximum Heatsink Temperature [1]	100°C
Absolute Load VSWR	∞:1
Storage Temperature	–65 to 150°C

Notes

1. Output power may be reduced if the temperature rises above this figure.

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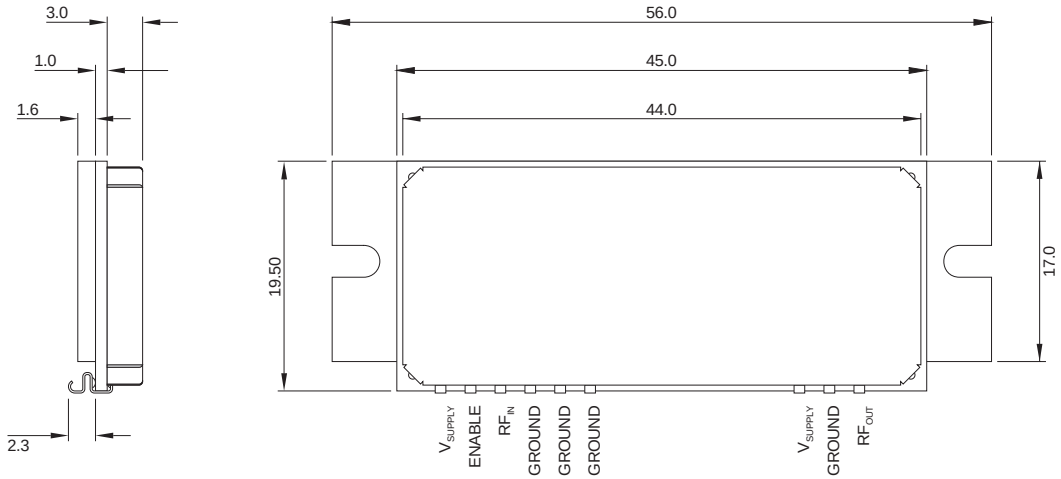
OPERATING CONDITIONS

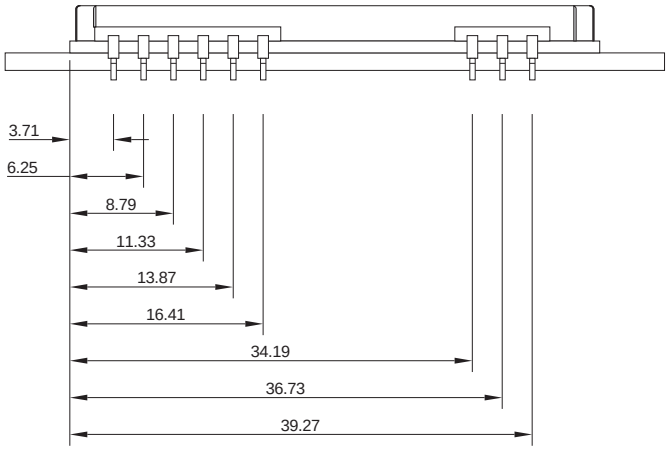
All performance characteristics that are quoted in this specification are for the following conditions.

Parameter	Min.	Typ.	Max.	Unit
Supply Voltage	6	7.2	8.4	V
Humidity	20		75	%
Heatsink Temperature			100	°C
Ambient Temperature	-30		+80	°C

MECHANICAL DATA

(Dimensions in mm)





ELECTRICAL CHARACTERISTICS (T_{amb} = -30°C to +80°C)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Frequency Range		150		162	MHz
Rated Output Power (CW)	The typical rated power of 5.5W is quoted for a supply voltage of 7.2V. Minimum rated power is for a supply voltage of 6V (See note 1)	4.4	5.5	7	W
Input Power for Rated Output CW Power		-5		0	dBm
IMD Products at Rated Output Power	See Note 2			-25	dBc
Minimum Output Power	See Note 3			0.1	W
Input Return Loss				-10	dB
'Low' Frequency Conducted Emissions	Conducted emissions below 1GHz not including harmonics of the input frequency and intermodulation distortion products.			-39	dBm
'High' Frequency Conducted Emissions	Conducted emissions between 1 - 4 GHz not including harmonics of the input frequency and intermodulation distortion products.			-33	dBm
Rejection of 2nd Harmonic (440 - 444MHz)	The harmonic level is measured relative to the power at the fundamental frequency.	25			dBc
Rejection of 3rd and higher order harmonics	The harmonic level is measured relative to the power at the fundamental frequency.	35			dBc
Disabled Output Power Reduction	With PA disabled, relative to rated output power.	80			dB
Time to Reach Disabled Output Power Reduction State	Time to switch once the control signal has come within 100mV of its final logic state.			1.0	ms
PA Enable Vih	Module enabled	2.0			V
PA Enable Vil	Module disabled			0.8	V
Supply current at rated CW output power				2	A
Standby Supply Current	No RF drive			1	mA
VSWR load mismatch tolerance	Unconditionally stable under all phases			5:1	—

Notes

1. Output power at 6V measured with maximum Input power for Rated Output CW Power.
2. All Intermodulation (IMD) specifications are quoted for a two-tone test. The tones are of equal amplitude with 600Hz frequency spacing. The amplitude of each tone is 6dB below the rated PEP to give a composite output power of 5.5W PEP. The level of IMD is measured in dBc relative to one of the two fundamental tones at the output of the power module.
3. The power delivered by the power amplifier module is controlled by varying the input drive level. The output power is continuously variable over the quoted power range, i.e. the rated output power to the specified minimum power.