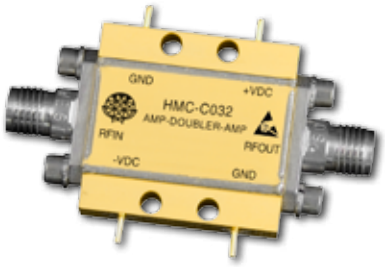
HMC-C032

v03.0711

GaAs MMIC x2 ACTIVE FREQUENCY MULTIPLIER MODULE, 18 - 29 GHz OUTPUT



Features

High Output Power: +16 dBm

Low Input Power Drive: 0 to +6 dBm

Fo Isolation: >20 dBc @ Fout= 24 GHz

100 KHz SSB Phase Noise: -132 dBc/Hz

Single Supply: +5V@ 82 mA

Hermetically Sealed Module

Field Replaceable 2.92mm Connectors

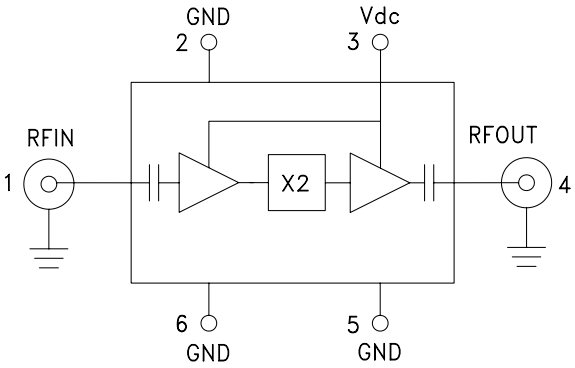
-55 °C to +85 °C Operating Temperature

Typical Applications

The HMC-C032 is suitable for:

- Clock Generation Applications: SONET OC-192 & SDH STM-64
- Point-to-Point & VSAT Radios
- Test Instrumentation
- Military & Space

Functional Diagram



General Description

The HMC-C032 is a x2 active broadband frequency multiplier utilizing GaAs PHEMT technology in a miniature hermetic module. When driven by a +3 dBm signal, the multiplier provides +16 dBm typical output power from 18 to 29 GHz. The Fo and 3Fo isolations are >20 dBc at 24 GHz. The HMC-C032 is ideal for use in LO multiplier chains for Pt to Pt & VSAT Radios yielding reduced parts count vs. traditional approaches. The low additive SSB Phase Noise of -132 dBc/Hz at 100 kHz offset helps maintain good system noise performance.

Electrical Specifications, T_A = +25° C, Vdc = +5V, 3 dBm Drive Level

Parameter	Min.	Typ.	Max.	Units
Frequency Range, Input		9 - 14.5		GHz
Frequency Range, Output		18 - 29		GHz
Output Power	11	16		dBm
Fo Isolation (with respect to output level)		20		dBc
3Fo Isolation (with respect to output level)		20		dBc
Input Return Loss		10		dB
Output Return Loss		10		dB
SSB Phase Noise (100 kHz Offset)		-132		dBc/Hz
Supply Current		82		mA

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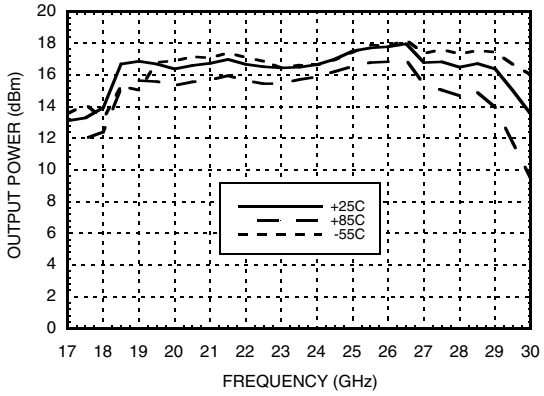
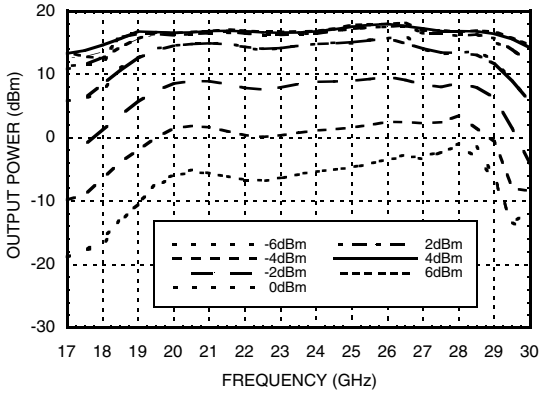
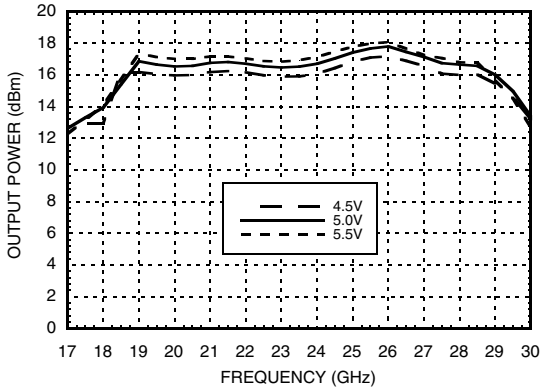
Output Power vs. Temperature @ 3 dBm Drive Level



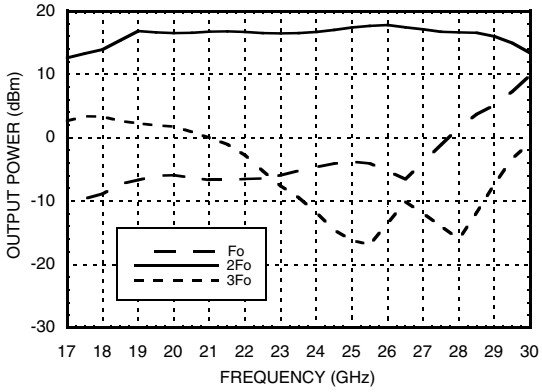
Output Power vs. Drive Level



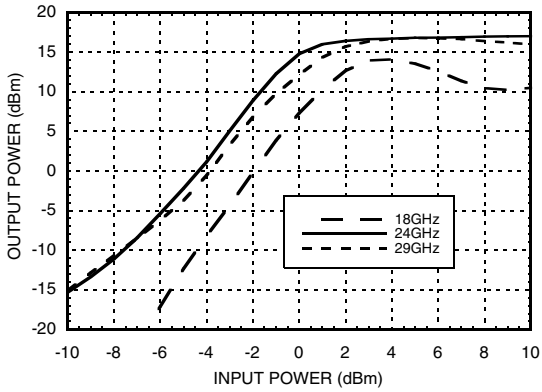
Output Power vs. Supply Voltage @ 3 dBm Drive Level



Isolation @ 3 dBm Drive Level



Output Power vs. Input Power



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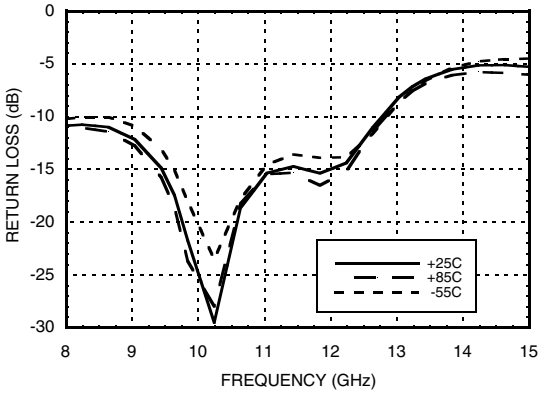
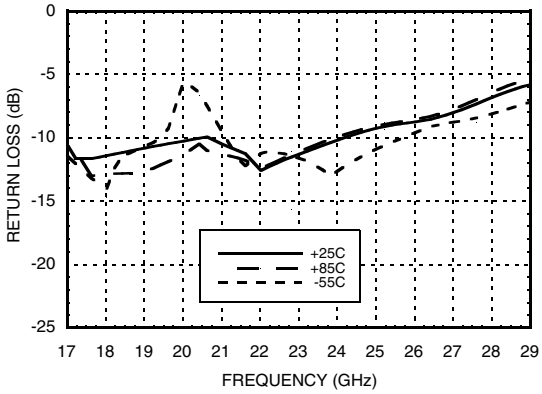
Input Return Loss vs. Temperature @ 0 dBm Drive Level



Output Return Loss vs. Temperature @ 0 dBm Drive Level



Absolute Maximum Ratings

RF Input (Vdd = +5V)	+13 dBm
Supply Voltage (Vdd)	+6 Vdc
Storage Temperature	-65 to +150 °C
Operating Temperature	-55 to +85 °C

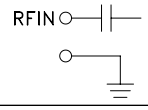
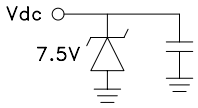
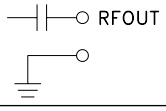
Typical Supply Current vs. Vdd

Vdd (Vdc)	Idd (mA)
4.5	82
5.0	82
5.5	83

Note:
Multiplier will operate over full voltage range shown above.

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Pin Description

Pin Number	Function	Description	Interface Schematic
1	RFIN and RF Ground	Pin is AC coupled and matched to 50 Ohms. RFIN uses a female 2.92mm field replaceable connector.	
2, 5, 6	GND	One of these pins must be connected to power supply ground.	
3	Vdc	Power supply voltage for the amplifier includes 7.5V zener diode for over voltage and negative voltage protection	
4	RFOUT and RF Ground	Pin is AC coupled and matched to 50 Ohms. RFIN uses a female 2.92mm field replaceable connector.	

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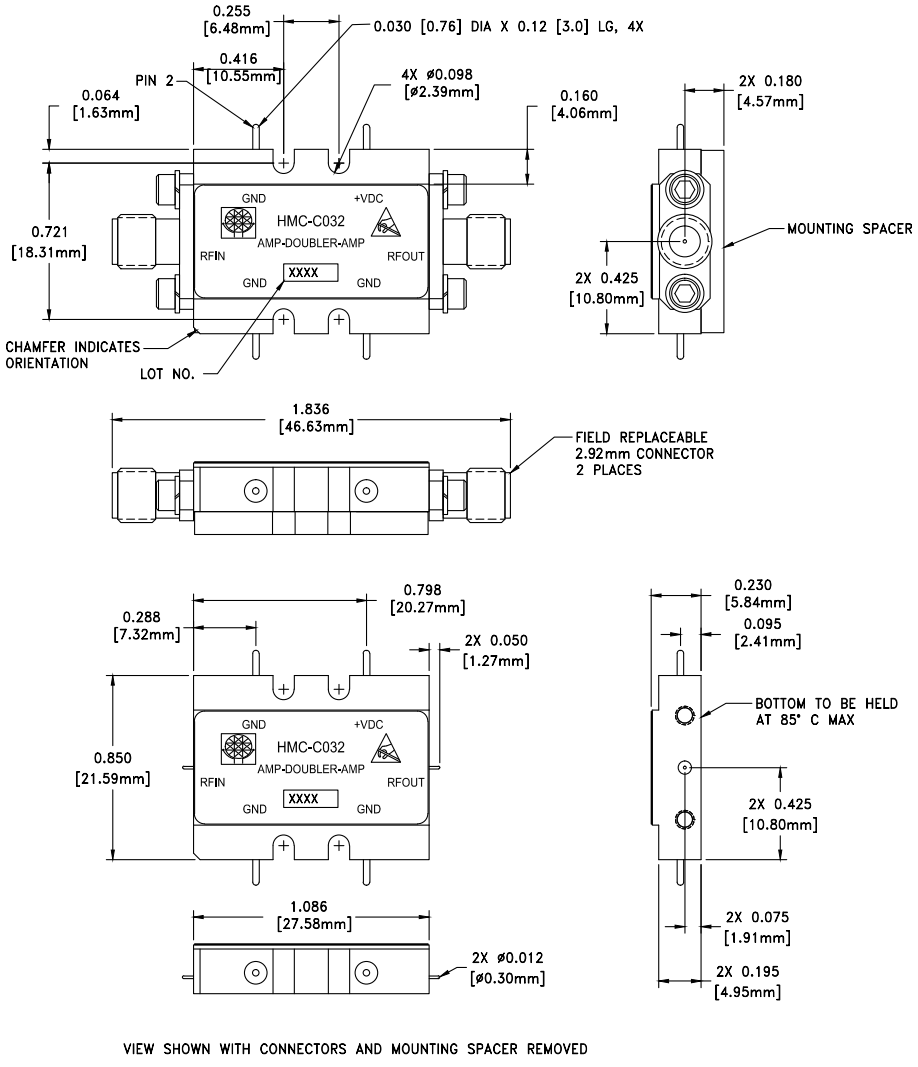
Outline Drawing



VIEW SHOWN WITH CONNECTORS AND MOUNTING SPACER REMOVED

Package Information

Package Type	C-10
Package Weight [1]	18.7 gms [2]
Spacer Weight	3.3 gms [2]

[1] Includes the connectors

[2] ±1 gms Tolerance

NOTES:

1. PACKAGE, LEADS, COVER MATERIAL: KOVAR™
2. FINISH: GOLD PLATE OVER NICKEL PLATE
3. ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]
4. TOLERANCES:
   - 4.1 .XX = ±0.02
   - 4.2 .XXX = ±0.010
5. FIELD REPLACEABLE 2.92mm CONNECTORS TENSOLITE 231CCSF OR EQUIVALENT

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