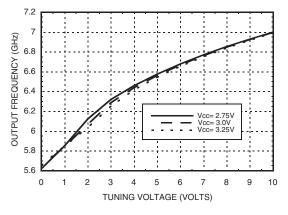


MMIC VCO w/ BUFFER AMPLIFIER, 5.8 - 6.8 GHz

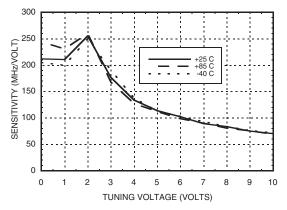


Frequency vs. Tuning Voltage, T= 25°C

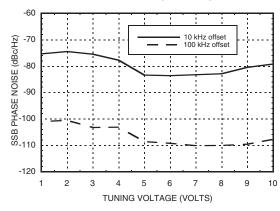
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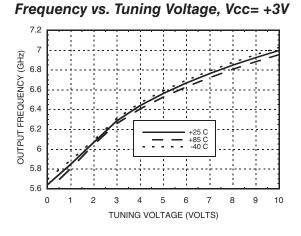


Sensitivity vs. Tuning Voltage, Vcc= +3V

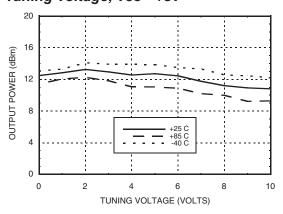


Phase Noise vs. Tuning Voltage

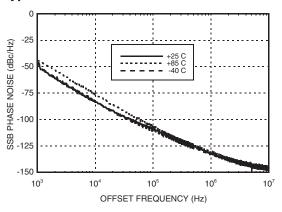




Output Power vs. Tuning Voltage, Vcc= +3V



Typical SSB Phase Noise @ Vtune= +5V



VCOs & PLOs - SMT

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Absolute Maximum Ratings

Vcc	3.5 Vdc
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C
Vtune	0 to 11V
ESD Sensitivity (HBM)	Class 1A



Outline Drawing

ELECTROSTATIC SENSITIVE DEVICE OBSERVE HANDLING PRECAUTIONS

Typical Supply Current vs. Vcc

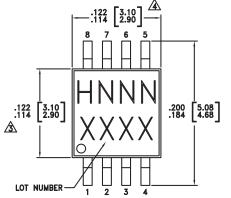
HMC358MS8G / 358MS8GE

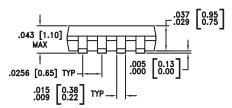
MMIC VCO w/ BUFFER

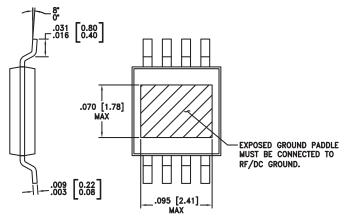
AMPLIFIER, 5.8 - 6.8 GHz

Vcc (V)	Icc (mA)
2.75	80
3.0	100
3.25	115

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







NOTES:

1. LEADFRAME MATERIAL: COPPER ALLOY

2. DIMENSIONS ARE IN INCHES [MILLIMETERS]

DIMENSION DOES NOT INCLUDE MOLDFLASH OF 0.15mm PER SIDE.

A DIMENSION DOES NOT INCLUDE MOLDFLASH OF 0.25mm PER SIDE.

5. ALL GROUND LEADS AND GROUND PADDLE MUST BE SOLDERED TO PCB RF GROUND.

Package Information

Part Number	Package Body Material	Lead Finish	MSL Rating	Package Marking [3]
HMC358MS8G	Low Stress Injection Molded Plastic	Sn/Pb Solder	MSL1 ^[1]	H358 XXXX
HMC358MS8GE	RoHS-compliant Low Stress Injection Molded Plastic	100% matte Sn	MSL1 ^[2]	<u>H358</u> XXXX

[1] Max peak reflow temperature of 235 °C

[2] Max peak reflow temperature of 260 °C

[3] 4-Digit lot number XXXX

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MMIC VCO w/ BUFFER AMPLIFIER, 5.8 - 6.8 GHz



Pin Descriptions

Pin Number	Function	Description	Interface Schematic
1	Vcc	Supply Voltage Vcc= 3V	VccO = 26pF
2, 6, 7	N/C	No Connection	
3	VTUNE	Control Voltage Input. Modulation port bandwidth dependent on drive source impedance.	7.5nH 1500 VTUNEO 2.4pF 2.4pF 3.6pF
4, 5	GND	Package bottom has an exposed metal paddle that must be RF & DC grounded.	
8	RFOUT	RF output (AC coupled).	

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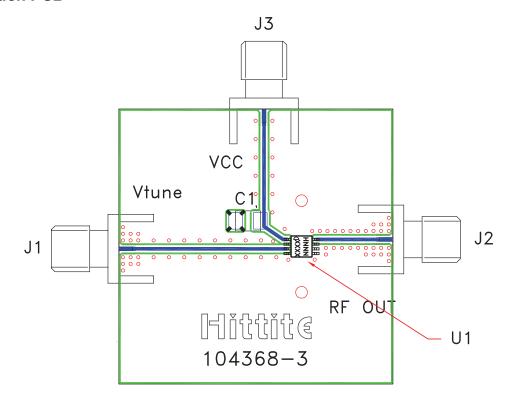
MMIC VCO w/ BUFFER

AMPLIFIER, 5.8 - 6.8 GHz

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Evaluation PCB



List of Materials for Evaluation PCB 104713^[1]

Item	Description
J1 - J3	PCB Mount SMA RF Connector
C1	10 µF Tantalum Capacitor
U1	HMC358MS8G / HMC358MS8GE VCO
PCB [2]	104368 Eval Board

[1] Reference this number when ordering complete evaluation PCB [2] Circuit Board Material: Rogers 4350

The circuit board used in the final application should use RF circuit design techniques. Signal lines should have 50 ohm impedance while the package ground leads and backside ground slug should be connected directly to the ground plane similar to that shown. A sufficient number of via holes should be used to connect the top and bottom ground planes. The evaluation circuit board shown is available from Hittite upon request.

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Notes:

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