



RF-LAMBDA

The power beyond expectations

R48M06GSA

Low Noise Amplifier 4.8-6.0GHz NF: 1.5dB



- WiMAX/C-band radio
- fixed Wireless
- Tower Mounted Amplifiers
- Public Safety Infrastructure
- Telematics & DsrC
- Noise Figure: 1.5 dB
- Output IP₃: +26 dBm
- Gain: 15 dB
- Integrated Low Loss 1 NA Bypass path
- Single Supply: +3V or +5V
- 50 Ohm Matched Output/ Input
- 16 Lead 3x3mm QFN Package: 9 mm²

Electrical Specifications, $T_A = +25^\circ \text{C}$

Parameter	Vdd = +3V						Vdd = +5V						Units
	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Frequency Range	4.8 - 6.0						4.8 - 6.0						GHz
Gain	10	12.5		-3	-2		13	15		-3	-2		dB
Gain Variation Over Temperature		0.026			0.002			0.026			0.002		dB / ° C
Noise Figure		1.6	2.1		2			1.5	2		2		dB
Input Return Loss		14			20			12			20		dB
Output Return Loss		15			20			14			20		dB
Reverse Isolation		28			-			30			-		dB
Power for 1dB Compression (P1dB)*		10			24			14			24		dBm
Saturated Output Power (Psat)		10.5			25			14.5			25		dBm
Third Order Intercept (IP3)* (-20 dBm Input Power per tone, 1 MHz tone spacing)		21			23			26			23		dBm
Supply Current (Idd)		17	25		0.01			42	55		0.01		mA
Switching Speed	LNA Mode to Bypass Mode						Bypass Mode to LNA Mode						ns
		7						6					ns
					50						150		ns

Absolute Maximum Ratings

Drain Bias Voltage (Vdd)	+8 Vdc
RF Input Power (RFIN)	+15 dBm
(Vdd = +5.0 Vdc)	Bypass Mode +30 dBm
Channel Temperature	150 ° C
Continuous Pdiss (T = 85 ° C)	850 mW
(derate 13 mW/° C above 85 ° C)	
Thermal Resistance (channel to ground paddle)	76.9 ° C/W
Storage Temperature	-65 to +150 ° C
Operating Temperature	-40 to +85 ° C

Typical Supply Current vs. Vdd

Vdd (Vdc)	Idd (mA)
+2.7	13
+3.0	17
+3.3	21
+4.5	37
+5.0	42
+5.5	46



ATTENTION
STATIC SENSITIVE DEVICES
 HANDLE ONLY AT
 STATIC SAFE WORK STATIONS

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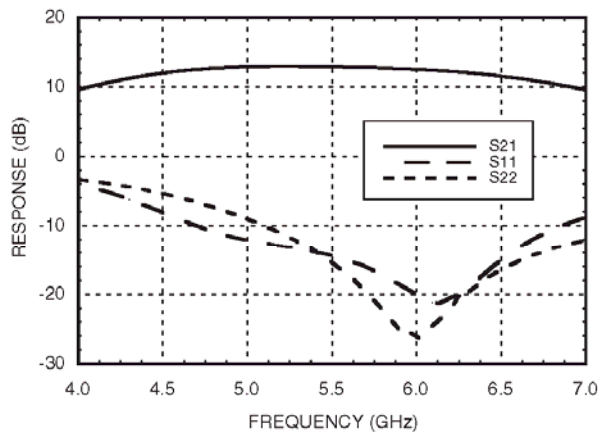
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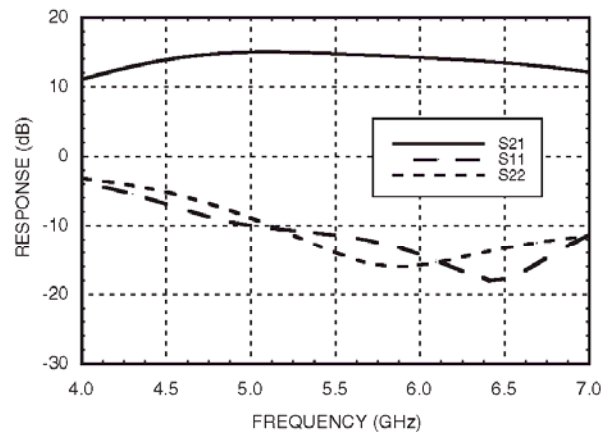
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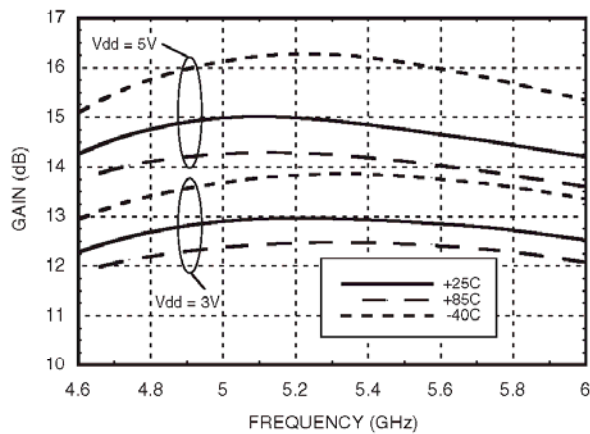
LNA Broadband Gain & Return Loss @ Vdd= 3V



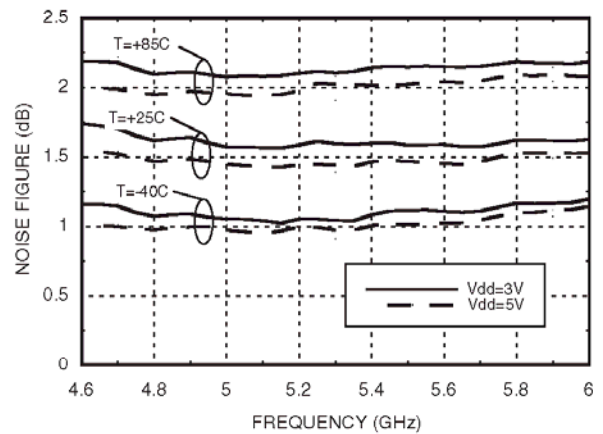
LNA Broadband Gain & Return Loss @ Vdd= 5V



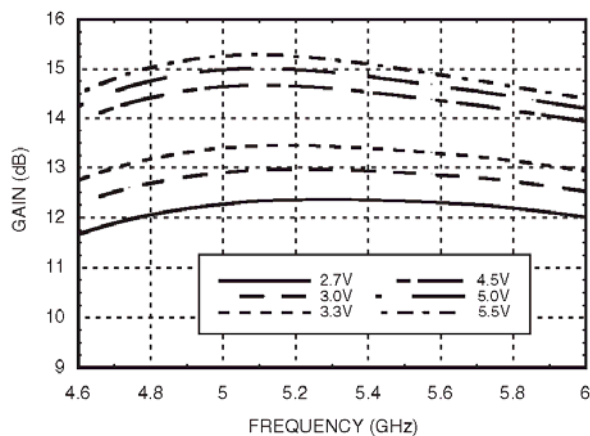
LNA Gain vs. Temperature



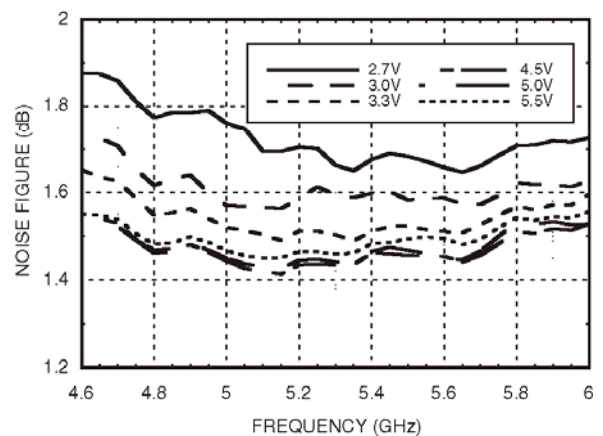
LNA Noise Figure vs. Temperature



LNA Gain vs. Vdd

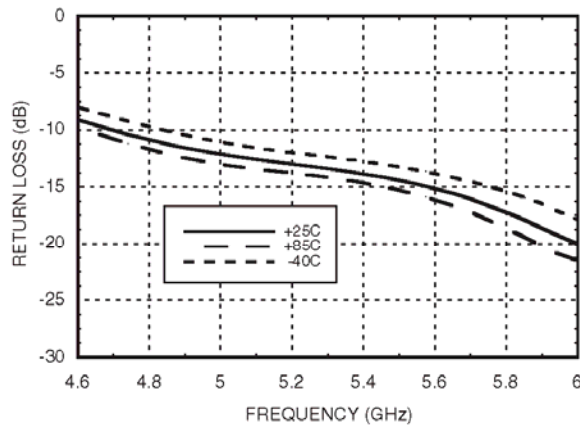


LNA Noise Figure vs. Vdd

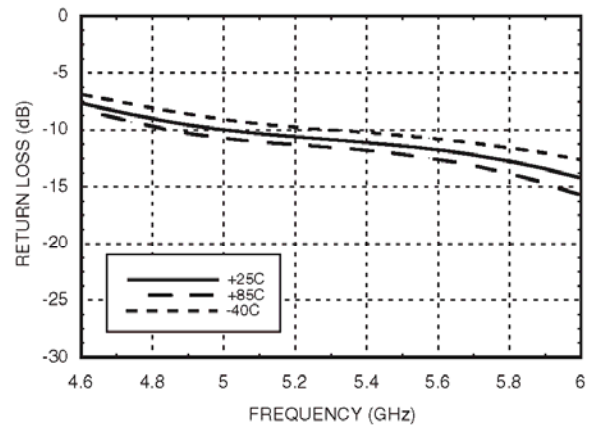




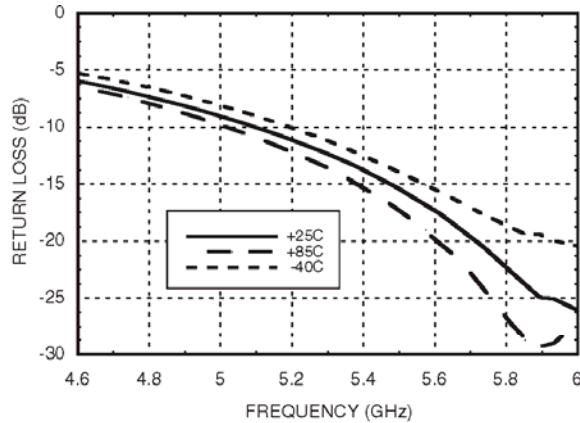
**LNA Input Return Loss
vs. Temperature @ Vdd= 3V**



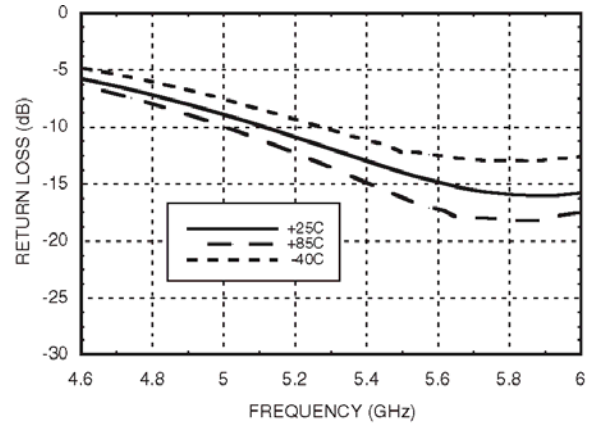
**LNA Input Return Loss
vs. Temperature @ Vdd= 5V**



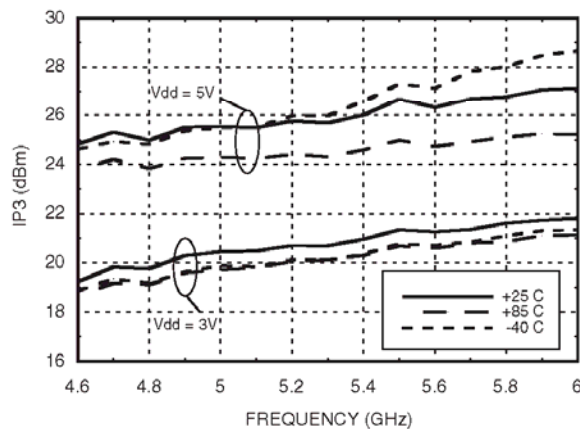
**LNA Output Return Loss
vs. Temperature @ Vdd= 3V**



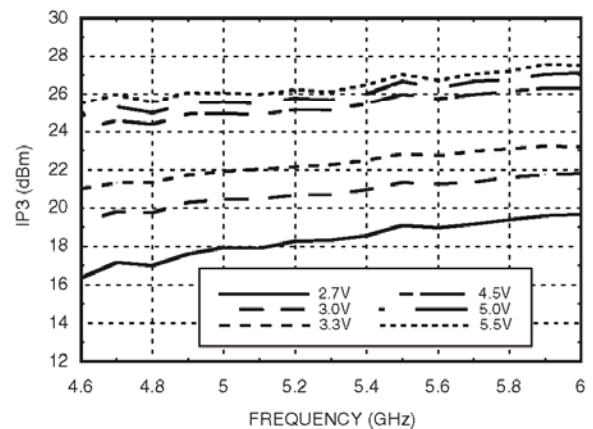
**LNA Output Return Loss
vs. Temperature @ Vdd= 5V**



LNA Output IP3 vs. Temperature

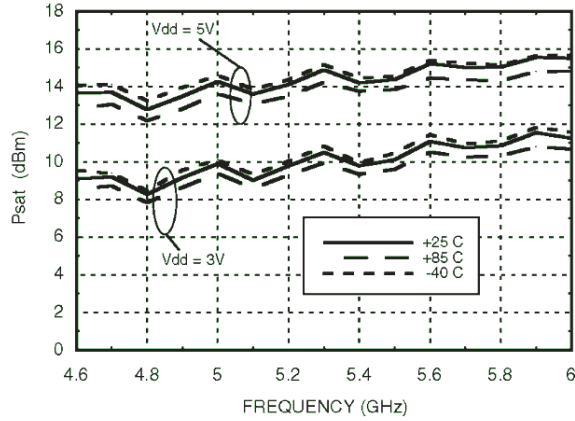


LNA Output IP3 vs. Vdd

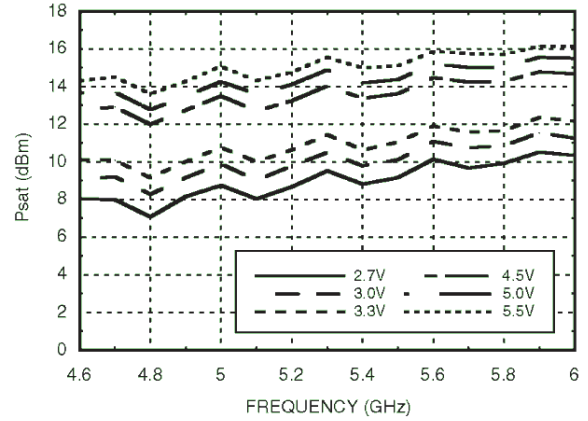




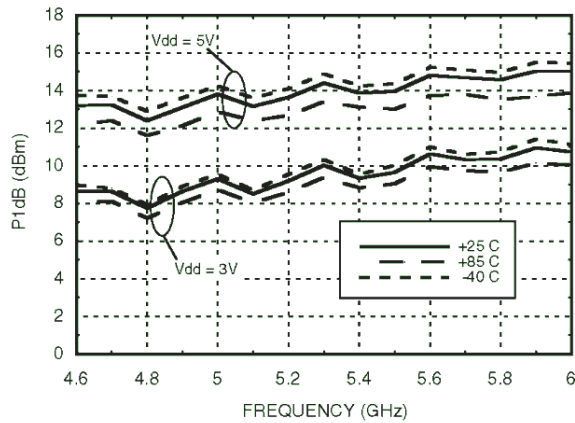
LNA Psat vs. Temperature



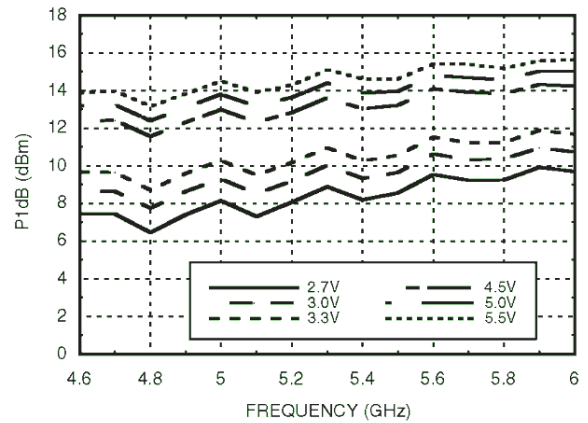
LNA Psat vs. Vdd



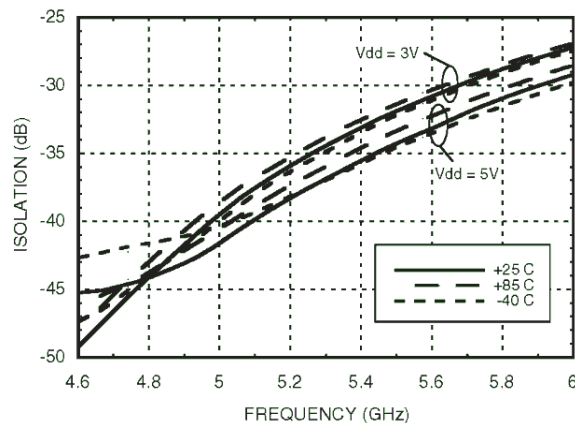
LNA Output P1dB vs. Temperature



LNA Output P1dB vs. Vdd



LNA Reverse Isolation vs. Temperature





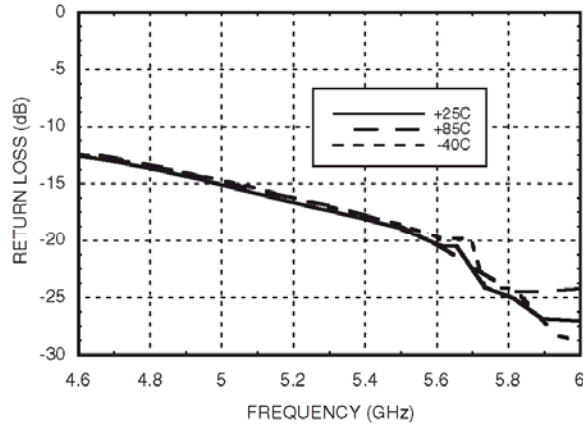
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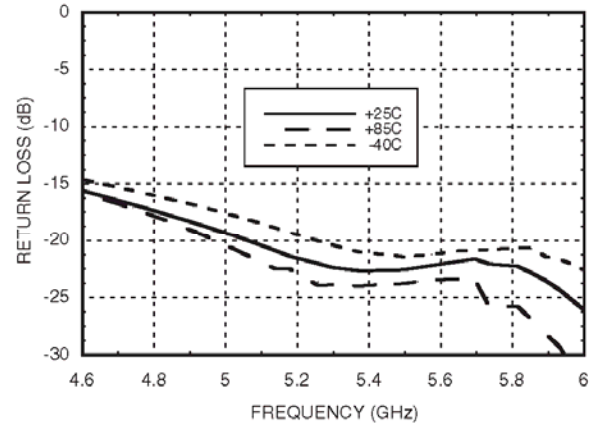
Bypass Mode

Input Return Loss vs. Temperature [1]



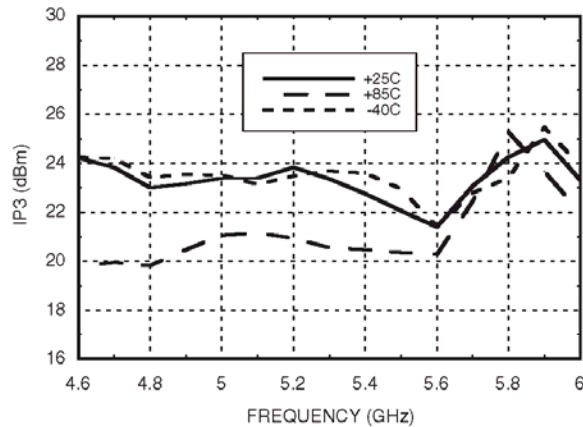
Bypass Mode

Output Return Loss vs. Temperature [1]



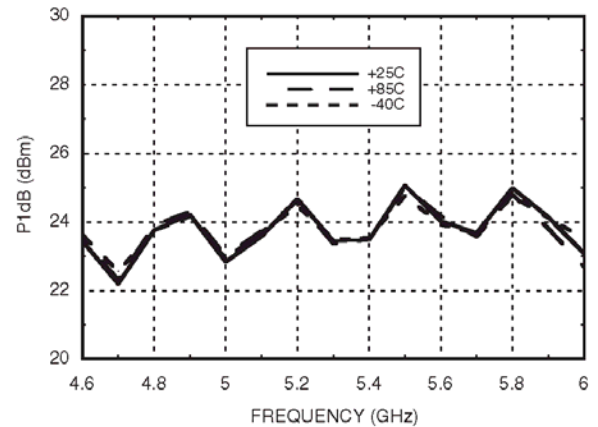
Bypass Mode

Output IP3 vs. Temperature [1]



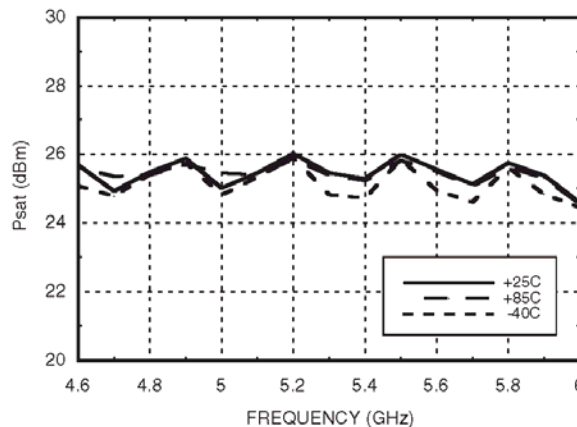
Bypass Mode

Output P1dB vs. Temperature [1]



Bypass Mode

Psat vs. Temperature [1]



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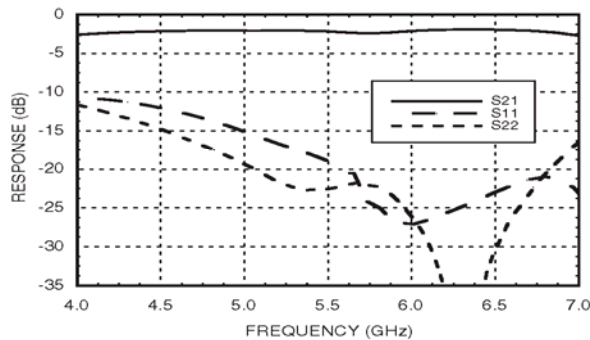


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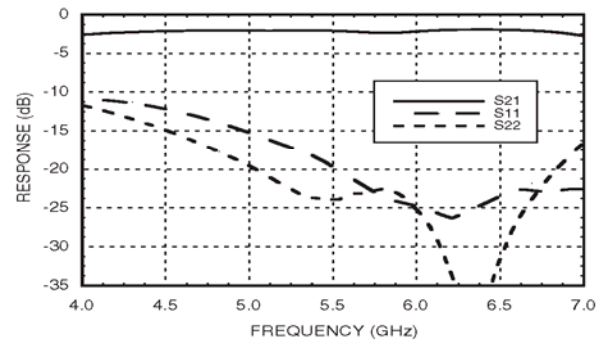
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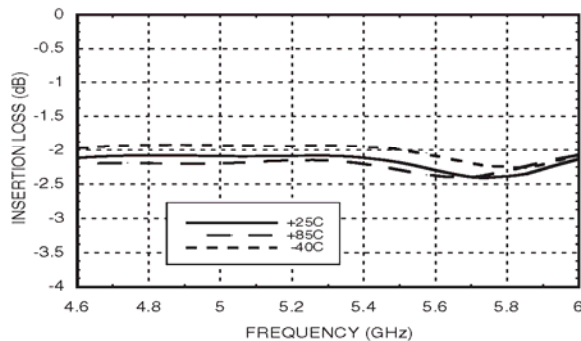
**Bypass Mode
Broadband Gain & Return Loss [1]**



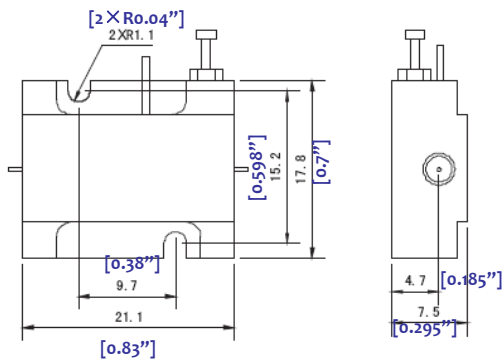
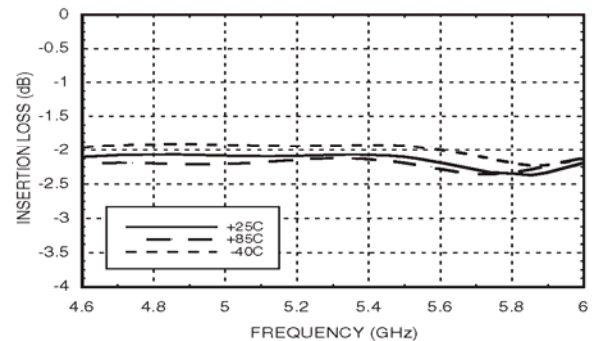
**Bypass Mode
Broadband Gain & Return Loss [2]**



**Bypass Mode
Insertion Loss vs. Temperature [1]**



**Bypass Mode
Insertion Loss vs. Temperature [2]**



Heat Sink required during operation. (Heat Sink sold separately)

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