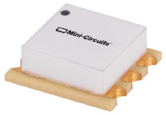
MSiP® *Mini-Circuits System In Package*

Ultra High IP3 Amplifier Module HXG-122+

50Ω 0.5 to 1.2 GHz

The Big Deal

- Industry leading High IP3, 47 dBm typ.
- Integrated optimization circuits
- Linearity with low current consumption



Ceramic Package

☛ *LTE Performance*

Product Overview

The HXG-122+ (RoHS compliant) is an advanced amplifier module combining high dynamic range MMIC technology and optimization circuits to provide industry leading linearity over a focused frequency range. It is packaged in a Mini-Circuits System in Package (MSiP) module (6.4mm x 7.0mm x 2.4mm) using a sealed ceramic cover and having gold over Ni for excellent solderability.

Key Features

Feature	Advantages
Optimized Frequency Range: 500 to 1200 MHz	Covering primary wireless communications bands: LTE, cellular and GSM
Extremely High IP3: 47 dBm typ at 700 MHz versus DC Power Consumption of 146mA	The HXG-122+ offers industry leading IP3 performance relative to device size and power consumption. The combination of the design and E-PHEMT provides enhanced linearity over a broad frequency range as evidence in the IP3. This feature makes this amplifier ideal for use in: • Driver amplifiers for complex waveform up converter paths • Drivers in linearized transmit systems • Secondary amplifiers in ultra High Dynamic range receivers
No External Matching Components Required	Unlike competing products, Mini-Circuits HXG-122+ provides Input and Output Return Loss of 10 dB up to 0.9 GHz without the need for any external matching components
Low Noise Figure: 2.2dB typ.	A unique feature of the HXG-122+ which separates this design from all competitors is the low noise figure performance in combination with the high dynamic range.

MSiP® *Mini-Circuits System In Package*

Ultra High IP3 Amplifier Module 0.5-1.2GHz

Product Features

- Ultra High IP3, +47 dBm typ.
- Gain, 15.3 dB typ. at 900 MHz
- High Pout, P1dB +23 dBm typ. at 900 MHz
- Low noise figure, 2.2 dB at 900 MHz
- Internally matched for optimized IP3 performance
- No external matching components required

Generic photo used for illustration purposes only

HXG-122+

CASE STYLE: LZ1671

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Typical Applications

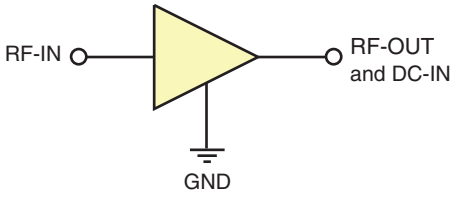
- LTE
- Base station infrastructure
- Portable Wireless

☛ *LTE Performance*

General Description

The HXG-122+ (RoHS compliant) is an advanced amplifier module in a Mini-Circuits System in Package (MSiP) which includes internal matching networks to offer extremely high dynamic range module. It is housed in a ceramic package 6.4mm x 7.0mm x 2.4mm.

simplified schematic and pin description



Function	Pin Number	Description
RF IN	2	RF input pin. This pin requires the use of an external DC blocking capacitor chosen for the frequency of operation.
RF-OUT and DC-IN	5	RF output and bias pin. DC voltage is present on this pin; therefore a DC blocking capacitor is necessary for proper operation. An RF choke is needed to feed DC bias without loss of RF signal due to the bias connection, as shown in "Recommended Application Circuit", Fig. 2
GND	1,3,4,6, Paddle	Connections to ground. Use via holes as shown in "Suggested Layout for PCB Design" to reduce ground path inductance for best performance.

Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

Electrical Specifications[1] at 25°C and 5V, unless noted

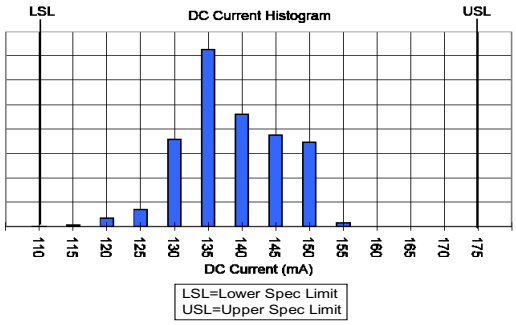
Parameter	Condition (GHz)	Min.	Typ.	Max.	Units
Frequency Range		0.5		1.2	GHz
Gain	0.5	—	16.0	—	dB
	0.7	—	15.7	—	
	0.9	13.9	15.3	17.0	
	1.2	—	14.5	—	
Input Return Loss	0.5		18.7		dB
	0.7		15.9		
	0.9		13.2		
	1.2		9.4		
Output Return Loss	0.5		14.2		dB
	0.7		12.1		
	0.9		10.3		
	1.2		8.0		
Reverse Isolation	0.9		21.0		dB
Output Power @1 dB compression	0.5		22.9		dBm
	0.7		23.0		
	0.9		23.3		
	1.2		23.0		
Output IP3	0.5	—	43.8	—	dBm
	0.7	—	47.0	—	
	0.9	42.0	46.0	—	
	1.2	—	40.8	—	
Noise Figure	0.5		2.1		dB
	0.7		2.2		
	0.9		2.2		
	1.2		2.2		
Device Operating Voltage (V_d)		4.8	5.0	5.2	V
Device Operating Current		110	146	180	mA
Device Current Variation vs. Temperature[2]			+14		µA/°C
Device Current Variation vs Voltage			0.05		mA/mV
Thermal Resistance, junction-to-ground lead			85		°C/W

[1] Measured on Mini-Circuits Characterization test board TB-640+. See Characterization Test Circuit (Fig. 1)
[2] Current at 85°C — Current at -45°C)/130

Absolute Maximum Ratings

Parameter	Ratings
Operating Temperature (ground lead)	-40°C to 85°C
Storage Temperature	-65°C to 150°C
Operating Current at 5V	210 mA
Power Dissipation	1 W
Input Power (CW)	24 dBm
DC Voltage on Pin 3	6 V

Note:
Permanent damage may occur if any of these limits are exceeded.
Electrical maximum ratings are not intended for continuous normal operation.



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Characterization Test Circuit

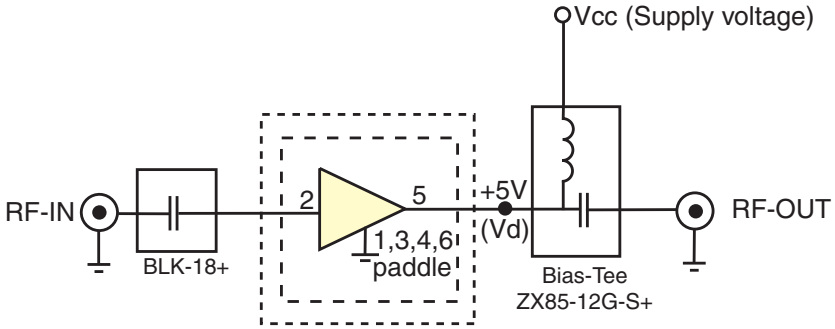


Fig 1. Block Diagram of Test Circuit used for characterization. (DUT soldered on Mini-Circuits Characterization test board TB-640+)
Gain, Return loss, Output power at 1dB compression (P1 dB) , output IP3 (OIP3) and noise figure measured using Agilent's N5242A PNA-X microwave network analyzer.

Conditions:
1. Gain and Return loss: Pin= -25dBm
2. Output IP3 (OIP3): Two tones, spaced 1 MHz apart, 5 dBm/tone at output.

Recommended Application Circuit

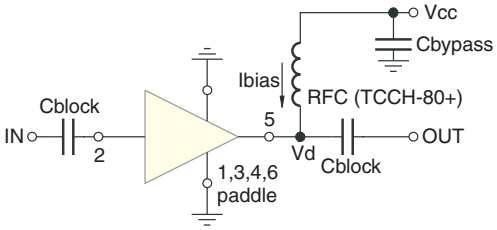
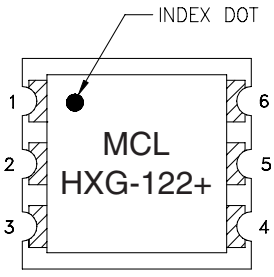


Fig 2. Test Board includes case, connectors, and components soldered to PCB

Product Marking



Markings in addition to model number designation may appear for internal quality control purposes.

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Additional Detailed Technical Information *additional information is available on our dash board. To access this information click here*	
Performance Data	Data Table
	Swept Graphs
	S-Parameter (S2P Files) Data Set (.zip file)
Case Style	LZ1671 *Ceramic package, exposed paddle, lead finish: gold plating over nickel*
Tape & Reel **Standard quantities available on reel**	F78 *7" reels with 20, 50, 100, 200 and 13" with 500, or 1K devices.*
Suggested Layout for PCB Design	PL-350
Evaluation Board	TB-641-122+
Environmental Ratings	ENV-59

ESD Rating

Human Body Model (HBM): Class 1A (250 to <500V) in accordance with ANSI/ESD STM 5.1-2001

Machine Model (MM): Class M1 (<100V) in accordance with ANSI/ESD STM 5.2-1999 passes 25V

Typical Performance Data

NOTE: Use PDF Bookmarks to view DATA at required conditions

Definitions:
Input Return Loss = -S11 (dB)
Gain(Power Gain) = S21 (dB)
Reverse Isolation = -S12 (dB)
Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 5.00V, Id = 149.98mA @ Temperature = +25degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
200.0	16.41	20.81	21.04	17.97	1.10	0.64	41.38	22.62	1.86
250.0	16.34	20.78	21.69	17.59	1.11	0.64	41.22	22.42	1.92
300.0	16.28	20.78	21.82	17.05	1.11	0.64	42.50	22.86	2.00
350.0	16.23	20.76	21.55	16.43	1.11	0.64	42.40	22.78	1.91
400.0	16.18	20.73	21.22	15.83	1.11	0.63	43.08	22.74	1.91
450.0	16.12	20.78	20.70	15.19	1.11	0.64	44.15	22.89	1.94
500.0	16.06	20.77	20.05	14.60	1.11	0.64	45.93	22.98	1.95
525.0	16.03	20.78	19.71	14.31	1.11	0.64	44.77	22.69	1.95
550.0	16.00	20.79	19.32	14.01	1.11	0.64	45.04	22.73	1.95
575.0	15.96	20.80	19.02	13.70	1.11	0.64	46.98	22.99	1.98
600.0	15.93	20.82	18.62	13.41	1.11	0.64	46.87	22.88	1.98
625.0	15.90	20.78	18.26	13.14	1.11	0.64	46.44	22.85	1.93
650.0	15.86	20.79	17.88	12.85	1.11	0.64	57.32	23.08	2.03
675.0	15.82	20.82	17.52	12.61	1.11	0.64	51.40	23.04	2.04
700.0	15.78	20.81	17.08	12.32	1.11	0.64	49.13	23.12	1.95
725.0	15.74	20.81	16.70	12.10	1.11	0.64	48.25	23.21	2.05
750.0	15.69	20.82	16.31	11.86	1.11	0.64	46.68	23.15	2.04
775.0	15.65	20.82	15.95	11.60	1.11	0.64	46.71	23.29	2.01
800.0	15.60	20.81	15.54	11.35	1.11	0.64	45.78	23.38	2.06
825.0	15.56	20.82	15.17	11.15	1.11	0.64	46.52	23.22	2.03
850.0	15.51	20.83	14.80	10.92	1.11	0.64	46.00	23.36	2.02
875.0	15.46	20.84	14.40	10.71	1.11	0.64	44.14	23.51	2.06
900.0	15.41	20.84	14.04	10.50	1.11	0.64	45.96	23.32	2.06
925.0	15.36	20.83	13.66	10.28	1.11	0.63	43.62	23.49	2.02
950.0	15.31	20.84	13.30	10.08	1.11	0.63	42.31	23.61	2.09
975.0	15.26	20.85	12.91	9.88	1.10	0.63	43.89	23.42	2.09
1000.0	15.20	20.88	12.56	9.66	1.11	0.63	40.83	23.75	2.09
1025.0	15.14	20.90	12.18	9.46	1.10	0.63	42.45	23.79	2.10
1050.0	15.09	20.90	11.84	9.24	1.10	0.63	41.96	23.80	2.10
1075.0	15.02	20.94	11.48	9.04	1.10	0.63	42.08	23.74	2.12
1100.0	14.96	20.94	11.14	8.84	1.10	0.63	41.26	23.69	2.12
1125.0	14.90	20.96	10.79	8.64	1.10	0.63	41.83	23.61	2.13
1150.0	14.83	20.98	10.44	8.44	1.10	0.63	40.59	23.54	2.11
1175.0	14.76	21.00	10.12	8.25	1.10	0.63	40.76	23.46	2.14
1200.0	14.69	21.01	9.78	8.06	1.10	0.63	40.65	23.42	2.14
1300.0	14.38	21.11	8.50	7.31	1.10	0.62	40.05	23.13	2.13
1400.0	14.03	21.27	7.30	6.57	1.09	0.61	40.16	22.86	2.22
1500.0	13.63	21.44	6.20	5.84	1.09	0.59	39.48	22.37	2.24

Typical Performance Data

Definitions:
Input Return Loss = -S11 (dB)
Gain(Power Gain) = S21 (dB)
Reverse Isolation = -S12 (dB)
Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 4.75V, Id = 137.69mA @ Temperature = +25degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
200.0	16.31	20.73	21.27	17.82	1.10	0.64	42.41	22.11	1.83
250.0	16.24	20.70	21.97	17.45	1.11	0.64	42.03	21.92	1.86
300.0	16.18	20.74	22.16	16.94	1.11	0.64	44.47	22.34	1.98
350.0	16.13	20.70	21.96	16.37	1.11	0.64	44.03	22.26	1.90
400.0	16.08	20.70	21.60	15.74	1.11	0.64	45.75	22.22	1.90
450.0	16.02	20.71	21.02	15.14	1.11	0.64	47.61	22.38	1.93
500.0	15.96	20.72	20.42	14.54	1.11	0.64	52.28	22.45	1.94
525.0	15.93	20.69	20.07	14.27	1.11	0.64	46.99	22.18	1.97
550.0	15.90	20.70	19.70	13.98	1.11	0.64	47.92	22.21	1.98
575.0	15.86	20.70	19.37	13.68	1.11	0.64	49.73	22.44	1.98
600.0	15.83	20.69	18.96	13.40	1.11	0.64	49.97	22.33	1.98
625.0	15.80	20.72	18.56	13.13	1.11	0.64	46.26	22.34	1.90
650.0	15.76	20.72	18.20	12.85	1.11	0.64	44.85	22.55	2.03
675.0	15.72	20.75	17.80	12.61	1.11	0.64	43.94	22.51	2.03
700.0	15.68	20.73	17.38	12.34	1.11	0.64	44.14	22.59	1.91
725.0	15.64	20.74	16.98	12.11	1.11	0.64	42.83	22.67	2.01
750.0	15.60	20.76	16.58	11.87	1.11	0.64	42.61	22.61	2.01
775.0	15.55	20.74	16.23	11.63	1.11	0.64	42.93	22.74	1.99
800.0	15.51	20.74	15.78	11.39	1.11	0.64	42.60	22.83	1.98
825.0	15.47	20.75	15.39	11.20	1.11	0.64	42.73	22.66	2.00
850.0	15.42	20.77	15.05	10.96	1.11	0.64	42.71	22.80	1.99
875.0	15.37	20.76	14.62	10.75	1.11	0.64	41.78	22.94	2.04
900.0	15.32	20.74	14.25	10.56	1.11	0.64	42.43	22.76	2.03
925.0	15.27	20.79	13.87	10.35	1.11	0.64	41.01	22.92	2.00
950.0	15.22	20.78	13.49	10.15	1.11	0.64	40.32	23.01	2.07
975.0	15.17	20.77	13.09	9.94	1.11	0.64	41.17	22.84	2.08
1000.0	15.11	20.79	12.73	9.74	1.11	0.64	39.60	23.11	2.05
1025.0	15.06	20.80	12.35	9.54	1.10	0.64	40.75	23.17	2.06
1050.0	15.00	20.80	11.99	9.33	1.10	0.63	40.48	23.17	2.09
1075.0	14.94	20.82	11.63	9.14	1.10	0.64	40.54	23.11	2.13
1100.0	14.88	20.84	11.28	8.94	1.10	0.63	39.81	23.03	2.06
1125.0	14.81	20.86	10.92	8.74	1.10	0.63	40.22	22.96	2.10
1150.0	14.75	20.86	10.57	8.55	1.10	0.63	39.25	22.86	2.06
1175.0	14.68	20.89	10.24	8.36	1.10	0.63	39.33	22.80	2.12
1200.0	14.61	20.87	9.90	8.17	1.10	0.63	39.33	22.75	2.08
1300.0	14.31	20.99	8.58	7.43	1.10	0.62	38.50	22.40	2.10
1400.0	13.97	21.11	7.36	6.68	1.09	0.61	39.14	22.12	2.21
1500.0	13.57	21.29	6.23	5.94	1.09	0.60	38.31	21.69	2.19

Typical Performance Data

Definitions:
Input Return Loss = -S11 (dB)
Gain(Power Gain) = S21 (dB)
Reverse Isolation = -S12 (dB)
Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 5.25V, Id = 163.33mA @ Temperature = +25degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
200.0	16.49	20.89	20.75	18.13	1.10	0.64	41.00	23.07	1.90
250.0	16.43	20.87	21.30	17.67	1.11	0.64	40.40	22.88	1.91
300.0	16.37	20.85	21.36	17.11	1.11	0.64	41.83	23.33	2.02
350.0	16.32	20.84	21.14	16.48	1.11	0.64	41.54	23.26	1.94
400.0	16.26	20.86	20.78	15.85	1.11	0.64	42.54	23.21	1.94
450.0	16.20	20.80	20.24	15.21	1.11	0.63	42.65	23.37	1.96
500.0	16.14	20.84	19.66	14.57	1.11	0.64	43.99	23.47	1.95
525.0	16.11	20.86	19.31	14.31	1.11	0.64	42.54	23.17	1.99
550.0	16.08	20.86	18.97	13.98	1.11	0.64	42.65	23.20	1.95
575.0	16.05	20.85	18.62	13.67	1.11	0.64	44.13	23.45	2.05
600.0	16.01	20.85	18.28	13.39	1.11	0.64	44.71	23.34	2.07
625.0	15.98	20.88	17.91	13.09	1.11	0.64	43.92	23.34	1.96
650.0	15.94	20.87	17.57	12.80	1.11	0.64	48.72	23.59	2.07
675.0	15.90	20.86	17.19	12.55	1.11	0.64	46.01	23.55	2.11
700.0	15.86	20.89	16.80	12.28	1.11	0.64	49.71	23.62	2.01
725.0	15.82	20.88	16.42	12.04	1.11	0.64	49.78	23.73	2.07
750.0	15.77	20.90	16.06	11.77	1.11	0.64	50.55	23.66	2.10
775.0	15.73	20.91	15.68	11.53	1.11	0.64	48.56	23.80	2.03
800.0	15.68	20.88	15.28	11.28	1.11	0.63	46.95	23.91	2.05
825.0	15.64	20.92	14.92	11.07	1.11	0.64	48.74	23.77	2.06
850.0	15.59	20.93	14.57	10.85	1.11	0.64	46.53	23.88	2.08
875.0	15.54	20.94	14.18	10.63	1.11	0.64	48.62	24.05	2.12
900.0	15.49	20.93	13.81	10.42	1.11	0.63	46.91	23.85	2.10
925.0	15.44	20.94	13.46	10.20	1.11	0.63	46.40	24.04	2.05
950.0	15.38	20.95	13.10	9.99	1.11	0.63	44.69	24.16	2.09
975.0	15.33	20.95	12.72	9.79	1.11	0.63	45.62	23.95	2.14
1000.0	15.27	20.97	12.38	9.57	1.11	0.63	42.50	24.34	2.12
1025.0	15.21	20.95	12.01	9.36	1.10	0.63	43.32	24.34	2.14
1050.0	15.16	21.02	11.67	9.15	1.10	0.63	43.02	24.38	2.14
1075.0	15.09	21.02	11.33	8.96	1.10	0.63	43.56	24.31	2.17
1100.0	15.03	21.02	10.99	8.75	1.10	0.63	42.69	24.28	2.14
1125.0	14.96	21.08	10.65	8.55	1.10	0.63	42.60	24.19	2.20
1150.0	14.89	21.06	10.31	8.35	1.10	0.63	41.93	24.15	2.14
1175.0	14.82	21.05	10.00	8.16	1.10	0.62	41.98	24.05	2.20
1200.0	14.75	21.11	9.66	7.97	1.10	0.62	41.53	24.03	2.16
1300.0	14.44	21.22	8.39	7.22	1.10	0.62	40.57	23.76	2.16
1400.0	14.08	21.36	7.22	6.48	1.09	0.60	41.13	23.50	2.28
1500.0	13.68	21.54	6.14	5.76	1.09	0.59	40.26	23.04	2.31

Typical Performance Data

Definitions:
Input Return Loss = -S11 (dB)
Gain(Power Gain) = S21 (dB)
Reverse Isolation = -S12 (dB)
Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 5.00V, Id = 152.03mA @ Temperature = -45degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
200.0	15.94	20.35	24.53	16.89	1.10	0.63	38.24	22.73	1.60
250.0	15.87	20.28	27.07	16.84	1.11	0.63	37.89	22.58	1.65
300.0	15.82	20.28	29.25	16.59	1.11	0.63	39.00	22.94	1.72
350.0	15.78	20.26	31.03	16.30	1.11	0.63	38.94	22.86	1.64
400.0	15.74	20.28	31.57	15.96	1.11	0.63	39.11	22.81	1.63
450.0	15.69	20.22	30.66	15.56	1.11	0.62	39.40	22.96	1.65
500.0	15.65	20.28	28.90	15.20	1.12	0.63	40.54	23.02	1.69
525.0	15.63	20.25	27.96	15.02	1.12	0.63	39.57	22.80	1.73
550.0	15.60	20.25	26.99	14.82	1.11	0.63	39.35	22.81	1.73
575.0	15.58	20.25	26.10	14.61	1.12	0.63	40.62	23.01	1.71
600.0	15.56	20.27	25.24	14.40	1.12	0.63	40.56	22.91	1.76
625.0	15.53	20.27	24.38	14.21	1.12	0.63	40.19	22.93	1.67
650.0	15.51	20.24	23.64	13.98	1.11	0.63	41.95	23.12	1.76
675.0	15.48	20.29	22.95	13.77	1.12	0.63	41.85	23.08	1.79
700.0	15.45	20.27	22.22	13.56	1.12	0.63	42.47	23.15	1.70
725.0	15.42	20.27	21.58	13.35	1.12	0.63	42.79	23.24	1.75
750.0	15.38	20.29	20.95	13.13	1.12	0.63	43.99	23.17	1.72
775.0	15.35	20.26	20.36	12.89	1.12	0.63	43.37	23.30	1.72
800.0	15.32	20.27	19.73	12.66	1.12	0.63	44.11	23.39	1.75
825.0	15.28	20.28	19.14	12.47	1.12	0.63	43.82	23.24	1.74
850.0	15.24	20.28	18.62	12.23	1.12	0.63	44.39	23.37	1.77
875.0	15.21	20.30	18.02	12.01	1.12	0.63	46.87	23.49	1.82
900.0	15.17	20.30	17.44	11.78	1.12	0.63	44.25	23.34	1.80
925.0	15.12	20.32	16.86	11.54	1.12	0.63	47.11	23.47	1.73
950.0	15.08	20.30	16.32	11.31	1.12	0.63	51.02	23.55	1.81
975.0	15.04	20.30	15.74	11.08	1.11	0.63	46.52	23.43	1.82
1000.0	14.99	20.35	15.22	10.84	1.12	0.63	44.33	23.65	1.77
1025.0	14.94	20.33	14.70	10.60	1.11	0.63	47.87	23.75	1.80
1050.0	14.90	20.35	14.19	10.36	1.11	0.63	46.39	23.73	1.84
1075.0	14.84	20.38	13.70	10.12	1.11	0.63	47.64	23.66	1.87
1100.0	14.79	20.38	13.24	9.89	1.11	0.62	45.10	23.59	1.86
1125.0	14.73	20.39	12.78	9.66	1.11	0.62	46.52	23.54	1.86
1150.0	14.68	20.43	12.34	9.42	1.11	0.62	44.12	23.40	1.82
1175.0	14.62	20.45	11.92	9.20	1.11	0.62	44.02	23.38	1.92
1200.0	14.55	20.47	11.50	8.96	1.11	0.62	43.85	23.33	1.87
1300.0	14.27	20.58	9.89	8.01	1.11	0.61	42.09	22.96	1.86
1400.0	13.92	20.77	8.40	7.03	1.11	0.59	42.11	22.67	1.94
1500.0	13.51	21.04	7.08	6.10	1.11	0.57	41.24	22.22	1.92

Typical Performance Data

Definitions:
Input Return Loss = -S11 (dB)
Gain(Power Gain) = S21 (dB)
Reverse Isolation = -S12 (dB)
Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 4.75V, Id = 140.19mA @ Temperature = -45degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
200.0	15.87	20.31	24.36	16.80	1.10	0.63	39.12	22.18	1.63
250.0	15.81	20.28	26.81	16.69	1.11	0.63	38.64	22.04	1.65
300.0	15.75	20.26	28.99	16.48	1.11	0.63	39.79	22.38	1.69
350.0	15.71	20.26	30.61	16.15	1.11	0.63	39.76	22.31	1.65
400.0	15.67	20.23	31.12	15.81	1.11	0.63	40.03	22.27	1.62
450.0	15.62	20.24	30.38	15.40	1.12	0.63	40.41	22.41	1.64
500.0	15.58	20.23	28.81	15.03	1.12	0.63	41.62	22.47	1.74
525.0	15.55	20.22	27.96	14.86	1.12	0.63	40.21	22.26	1.66
550.0	15.53	20.22	26.89	14.67	1.12	0.63	40.25	22.28	1.72
575.0	15.51	20.22	26.10	14.44	1.12	0.63	41.92	22.47	1.68
600.0	15.49	20.21	25.20	14.24	1.12	0.63	41.59	22.36	1.72
625.0	15.46	20.22	24.37	14.06	1.12	0.63	41.43	22.38	1.67
650.0	15.43	20.23	23.63	13.83	1.12	0.63	44.34	22.56	1.76
675.0	15.40	20.25	22.90	13.64	1.12	0.63	43.64	22.53	1.76
700.0	15.37	20.23	22.19	13.42	1.12	0.63	44.81	22.59	1.68
725.0	15.34	20.23	21.58	13.23	1.12	0.63	45.03	22.68	1.74
750.0	15.31	20.23	20.98	13.01	1.12	0.63	45.77	22.62	1.73
775.0	15.28	20.20	20.39	12.79	1.11	0.63	48.16	22.73	1.73
800.0	15.24	20.23	19.75	12.55	1.12	0.63	47.77	22.81	1.73
825.0	15.21	20.21	19.14	12.37	1.11	0.63	47.00	22.67	1.74
850.0	15.17	20.21	18.63	12.14	1.11	0.63	50.01	22.79	1.73
875.0	15.13	20.24	18.04	11.92	1.12	0.63	46.67	22.89	1.81
900.0	15.09	20.24	17.46	11.71	1.12	0.63	47.65	22.76	1.76
925.0	15.05	20.24	16.87	11.48	1.11	0.63	45.08	22.87	1.72
950.0	15.00	20.26	16.34	11.26	1.11	0.63	44.12	22.93	1.79
975.0	14.96	20.27	15.75	11.04	1.11	0.63	46.94	22.82	1.78
1000.0	14.91	20.26	15.23	10.81	1.11	0.63	42.19	22.97	1.77
1025.0	14.87	20.27	14.69	10.58	1.11	0.63	45.15	23.10	1.79
1050.0	14.82	20.27	14.19	10.35	1.11	0.63	43.41	23.05	1.81
1075.0	14.77	20.30	13.71	10.13	1.11	0.63	43.64	23.00	1.84
1100.0	14.71	20.32	13.24	9.90	1.11	0.63	42.06	22.88	1.81
1125.0	14.66	20.33	12.77	9.68	1.11	0.63	42.94	22.85	1.83
1150.0	14.60	20.34	12.33	9.45	1.11	0.63	41.26	22.67	1.79
1175.0	14.55	20.37	11.92	9.23	1.11	0.62	41.50	22.69	1.86
1200.0	14.48	20.37	11.50	9.02	1.11	0.62	41.36	22.62	1.87
1300.0	14.20	20.48	9.87	8.09	1.11	0.61	40.13	22.18	1.85
1400.0	13.86	20.66	8.37	7.12	1.11	0.60	40.34	21.86	1.92
1500.0	13.46	20.87	7.04	6.19	1.10	0.58	39.89	21.42	1.88

Typical Performance Data

Definitions:
Input Return Loss = -S11 (dB)
Gain(Power Gain) = S21 (dB)
Reverse Isolation = -S12 (dB)
Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 5.25V, Id = 166.55mA @ Temperature = -45degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
200.0	16.00	20.39	24.61	16.93	1.10	0.63	38.12	23.26	1.64
250.0	15.93	20.33	27.14	16.88	1.11	0.63	37.68	23.11	1.68
300.0	15.88	20.30	29.33	16.62	1.11	0.62	38.43	23.47	1.71
350.0	15.84	20.32	30.81	16.35	1.11	0.63	38.46	23.40	1.70
400.0	15.79	20.30	31.35	16.00	1.11	0.63	38.81	23.36	1.66
450.0	15.75	20.31	30.33	15.62	1.11	0.63	39.01	23.50	1.68
500.0	15.71	20.32	28.71	15.26	1.12	0.63	39.61	23.56	1.73
525.0	15.69	20.30	27.85	15.07	1.11	0.63	38.58	23.33	1.73
550.0	15.66	20.32	26.94	14.86	1.12	0.63	38.79	23.35	1.74
575.0	15.64	20.31	26.04	14.66	1.12	0.63	39.94	23.55	1.72
600.0	15.62	20.31	25.15	14.45	1.12	0.63	39.83	23.44	1.76
625.0	15.59	20.34	24.33	14.25	1.12	0.63	39.52	23.45	1.67
650.0	15.56	20.34	23.58	14.00	1.12	0.63	40.93	23.67	1.80
675.0	15.54	20.33	22.88	13.79	1.12	0.63	40.80	23.62	1.80
700.0	15.51	20.31	22.09	13.58	1.12	0.63	41.13	23.70	1.71
725.0	15.48	20.30	21.49	13.39	1.12	0.63	41.91	23.79	1.78
750.0	15.44	20.32	20.83	13.16	1.12	0.63	42.21	23.72	1.80
775.0	15.41	20.31	20.30	12.91	1.12	0.63	41.99	23.86	1.76
800.0	15.38	20.31	19.62	12.68	1.11	0.63	42.65	23.95	1.78
825.0	15.34	20.31	19.07	12.50	1.11	0.63	41.99	23.80	1.78
850.0	15.30	20.36	18.55	12.25	1.12	0.63	42.36	23.93	1.80
875.0	15.27	20.33	17.94	12.03	1.12	0.63	43.62	24.08	1.80
900.0	15.23	20.34	17.38	11.80	1.12	0.63	42.06	23.92	1.81
925.0	15.19	20.36	16.81	11.57	1.12	0.63	44.51	24.07	1.76
950.0	15.14	20.36	16.28	11.33	1.12	0.63	46.41	24.17	1.84
975.0	15.10	20.37	15.68	11.10	1.12	0.63	43.34	24.01	1.84
1000.0	15.05	20.39	15.18	10.86	1.12	0.63	44.73	24.30	1.81
1025.0	15.00	20.38	14.65	10.61	1.11	0.63	44.16	24.37	1.85
1050.0	14.95	20.43	14.17	10.36	1.12	0.63	44.36	24.38	1.86
1075.0	14.90	20.41	13.66	10.13	1.11	0.63	45.39	24.32	1.87
1100.0	14.85	20.44	13.22	9.88	1.11	0.62	47.28	24.26	1.89
1125.0	14.79	20.45	12.76	9.65	1.11	0.62	44.84	24.20	1.87
1150.0	14.73	20.49	12.31	9.42	1.11	0.62	44.62	24.11	1.84
1175.0	14.67	20.50	11.89	9.19	1.11	0.62	44.45	24.06	1.89
1200.0	14.61	20.51	11.47	8.95	1.11	0.62	43.54	24.02	1.90
1300.0	14.32	20.63	9.86	7.98	1.11	0.61	42.66	23.70	1.89
1400.0	13.97	20.83	8.39	7.01	1.11	0.59	42.88	23.42	1.96
1500.0	13.56	21.06	7.08	6.07	1.11	0.57	41.45	22.99	1.96

Typical Performance Data

Definitions:
Input Return Loss = -S11 (dB)
Gain(Power Gain) = S21 (dB)
Reverse Isolation = -S12 (dB)
Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 5.00V, Id = 153.89mA @ Temperature = +85degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
200.0	16.69	21.14	18.26	18.17	1.10	0.65	43.31	22.55	2.08
250.0	16.62	21.11	18.49	17.50	1.11	0.65	42.21	22.36	2.09
300.0	16.56	21.16	18.32	16.74	1.11	0.65	45.50	22.82	2.19
350.0	16.50	21.12	18.01	15.95	1.11	0.65	45.61	22.74	2.14
400.0	16.43	21.16	17.61	15.17	1.11	0.65	44.88	22.71	2.12
450.0	16.36	21.15	17.12	14.45	1.11	0.65	46.56	22.86	2.17
500.0	16.29	21.13	16.68	13.79	1.11	0.65	48.43	22.96	2.15
525.0	16.25	21.12	16.47	13.49	1.11	0.65	46.10	22.67	2.21
550.0	16.21	21.13	16.22	13.15	1.11	0.65	48.47	22.72	2.16
575.0	16.17	21.17	16.00	12.83	1.11	0.65	47.19	22.95	2.26
600.0	16.14	21.19	15.75	12.54	1.11	0.65	49.56	22.84	2.26
625.0	16.09	21.16	15.49	12.25	1.11	0.64	48.26	22.83	2.15
650.0	16.05	21.17	15.25	11.93	1.11	0.65	45.99	23.08	2.26
675.0	16.00	21.17	14.98	11.68	1.11	0.64	45.54	23.04	2.30
700.0	15.95	21.16	14.68	11.41	1.10	0.64	44.44	23.11	2.21
725.0	15.90	21.16	14.41	11.16	1.10	0.64	44.10	23.21	2.28
750.0	15.85	21.20	14.09	10.91	1.11	0.64	43.64	23.16	2.24
775.0	15.80	21.20	13.80	10.67	1.10	0.64	43.26	23.28	2.25
800.0	15.75	21.23	13.45	10.44	1.10	0.64	43.28	23.40	2.26
825.0	15.69	21.21	13.15	10.24	1.10	0.64	43.40	23.22	2.24
850.0	15.64	21.21	12.87	10.02	1.10	0.64	43.03	23.36	2.29
875.0	15.58	21.22	12.55	9.83	1.10	0.64	41.89	23.52	2.29
900.0	15.52	21.21	12.24	9.64	1.10	0.64	42.90	23.31	2.32
925.0	15.47	21.24	11.93	9.44	1.10	0.64	41.63	23.50	2.27
950.0	15.41	21.25	11.65	9.25	1.10	0.64	41.27	23.60	2.36
975.0	15.35	21.25	11.32	9.08	1.10	0.64	42.00	23.40	2.32
1000.0	15.28	21.26	11.04	8.89	1.10	0.64	40.07	23.75	2.35
1025.0	15.22	21.26	10.73	8.70	1.09	0.64	40.70	23.75	2.34
1050.0	15.16	21.31	10.45	8.51	1.09	0.64	40.55	23.76	2.36
1075.0	15.09	21.30	10.16	8.34	1.09	0.64	40.78	23.69	2.38
1100.0	15.02	21.31	9.88	8.17	1.09	0.64	40.31	23.64	2.38
1125.0	14.95	21.33	9.60	8.00	1.09	0.64	40.55	23.54	2.41
1150.0	14.89	21.34	9.32	7.83	1.09	0.63	39.91	23.47	2.36
1175.0	14.81	21.34	9.04	7.66	1.09	0.63	39.83	23.38	2.51
1200.0	14.74	21.39	8.76	7.50	1.09	0.63	39.59	23.34	2.39
1300.0	14.42	21.45	7.65	6.86	1.08	0.62	39.14	23.02	2.42
1400.0	14.06	21.59	6.60	6.24	1.08	0.62	39.28	22.76	2.49
1500.0	13.67	21.74	5.62	5.63	1.07	0.61	38.83	22.35	2.53

Typical Performance Data

Definitions:
Input Return Loss = -S11 (dB)
Gain(Power Gain) = S21 (dB)
Reverse Isolation = -S12 (dB)
Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 4.75V, Id = 140.44mA @ Temperature = +85degC

FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
200.0	16.59	21.08	18.65	18.11	1.11	0.65	43.22	22.06	2.02
250.0	16.52	21.05	18.91	17.46	1.11	0.65	43.56	21.88	2.09
300.0	16.45	21.04	18.74	16.71	1.11	0.65	49.93	22.31	2.16
350.0	16.39	21.04	18.45	15.97	1.11	0.65	47.31	22.23	2.08
400.0	16.33	21.04	18.06	15.22	1.11	0.65	47.51	22.20	2.08
450.0	16.26	21.08	17.58	14.50	1.11	0.65	52.18	22.39	2.10
500.0	16.19	21.06	17.11	13.85	1.11	0.65	46.59	22.45	2.11
525.0	16.15	21.03	16.88	13.56	1.11	0.65	48.78	22.16	2.17
550.0	16.12	21.04	16.63	13.23	1.11	0.65	51.16	22.20	2.17
575.0	16.08	21.05	16.38	12.93	1.11	0.65	44.87	22.44	2.21
600.0	16.04	21.05	16.13	12.62	1.11	0.65	45.99	22.32	2.19
625.0	16.00	21.10	15.85	12.33	1.11	0.65	45.93	22.32	2.11
650.0	15.95	21.08	15.63	12.04	1.11	0.65	43.26	22.55	2.24
675.0	15.91	21.06	15.33	11.78	1.11	0.64	43.47	22.51	2.23
700.0	15.86	21.09	15.02	11.51	1.11	0.65	42.54	22.58	2.10
725.0	15.81	21.09	14.72	11.27	1.11	0.65	42.25	22.68	2.21
750.0	15.76	21.09	14.41	11.02	1.11	0.65	41.62	22.62	2.23
775.0	15.71	21.07	14.11	10.78	1.10	0.64	41.56	22.74	2.20
800.0	15.66	21.06	13.77	10.57	1.10	0.64	41.62	22.84	2.20
825.0	15.60	21.09	13.44	10.36	1.10	0.64	41.36	22.68	2.24
850.0	15.55	21.10	13.16	10.16	1.10	0.64	41.35	22.82	2.24
875.0	15.49	21.15	12.81	9.96	1.10	0.65	40.78	22.96	2.22
900.0	15.44	21.16	12.50	9.77	1.10	0.65	41.37	22.77	2.25
925.0	15.38	21.13	12.18	9.57	1.10	0.64	40.43	22.94	2.23
950.0	15.33	21.13	11.89	9.39	1.10	0.64	39.63	23.03	2.33
975.0	15.27	21.13	11.55	9.20	1.10	0.64	40.68	22.84	2.28
1000.0	15.20	21.15	11.27	9.02	1.10	0.64	38.76	23.16	2.26
1025.0	15.14	21.16	10.95	8.84	1.10	0.64	39.80	23.18	2.30
1050.0	15.08	21.17	10.66	8.65	1.09	0.64	39.82	23.18	2.30
1075.0	15.02	21.16	10.36	8.48	1.09	0.64	39.66	23.11	2.37
1100.0	14.95	21.18	10.07	8.30	1.09	0.64	39.12	23.04	2.29
1125.0	14.88	21.20	9.78	8.13	1.09	0.64	39.57	22.96	2.33
1150.0	14.81	21.22	9.49	7.97	1.09	0.64	38.76	22.87	2.30
1175.0	14.74	21.22	9.21	7.80	1.09	0.63	38.83	22.78	2.34
1200.0	14.67	21.23	8.92	7.63	1.09	0.63	38.69	22.73	2.34
1300.0	14.36	21.29	7.78	6.99	1.08	0.63	38.33	22.40	2.34
1400.0	14.01	21.43	6.70	6.36	1.08	0.62	38.48	22.14	2.46
1500.0	13.62	21.58	5.69	5.75	1.07	0.61	37.92	21.71	2.46

Typical Performance Data

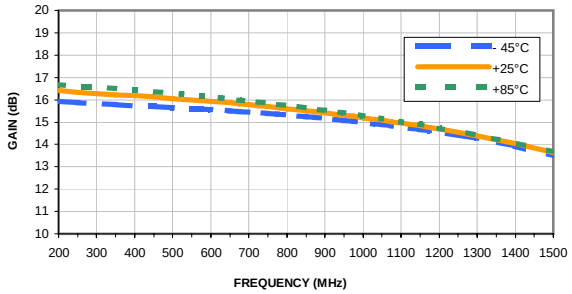
Definitions:
Input Return Loss = -S11 (dB)
Gain(Power Gain) = S21 (dB)
Reverse Isolation = -S12 (dB)
Output Return Loss = -S22 (dB)

TEST CONDITIONS: Vd = 5.25V, Id = 167.36mA @ Temperature = +85degC

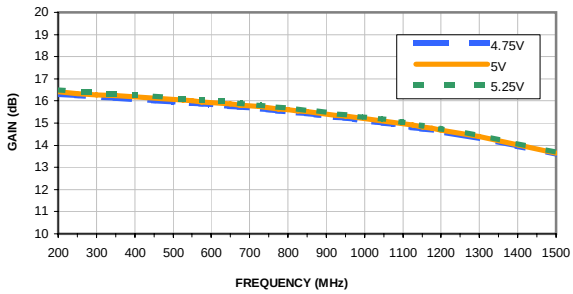
FREQ	Gain	Isolation	Input Return Loss	Output Return Loss	Stability		IP-3 Output	1dB Comp. Output	Noise Figure
(MHz)	(dB)	(dB)	(dB)	(dB)	K	Measure	(dBm)	(dBm)	(dB)
200.0	16.77	21.21	17.88	18.19	1.10	0.65	42.70	23.00	2.16
250.0	16.70	21.15	18.04	17.50	1.10	0.64	42.13	22.79	2.18
300.0	16.63	21.20	17.93	16.68	1.11	0.65	43.43	23.28	2.26
350.0	16.58	21.21	17.59	15.90	1.11	0.65	44.50	23.20	2.21
400.0	16.51	21.17	17.20	15.11	1.11	0.65	44.14	23.15	2.21
450.0	16.44	21.21	16.78	14.37	1.11	0.65	45.49	23.32	2.23
500.0	16.36	21.22	16.33	13.70	1.11	0.65	45.69	23.43	2.26
525.0	16.33	21.26	16.09	13.38	1.11	0.65	44.67	23.14	2.25
550.0	16.29	21.24	15.87	13.05	1.11	0.65	44.83	23.16	2.27
575.0	16.25	21.22	15.66	12.72	1.11	0.64	47.30	23.41	2.31
600.0	16.21	21.23	15.41	12.43	1.11	0.64	46.74	23.34	2.31
625.0	16.16	21.28	15.15	12.14	1.11	0.65	46.75	23.33	2.21
650.0	16.12	21.27	14.92	11.84	1.11	0.65	46.99	23.58	2.34
675.0	16.07	21.23	14.67	11.57	1.10	0.64	46.22	23.52	2.38
700.0	16.02	21.29	14.38	11.30	1.11	0.64	45.60	23.61	2.28
725.0	15.97	21.29	14.09	11.05	1.11	0.64	45.60	23.71	2.31
750.0	15.92	21.27	13.80	10.81	1.10	0.64	44.48	23.65	2.33
775.0	15.86	21.29	13.51	10.57	1.10	0.64	44.34	23.78	2.30
800.0	15.81	21.31	13.20	10.32	1.10	0.64	43.49	23.88	2.30
825.0	15.76	21.32	12.90	10.13	1.10	0.64	44.56	23.71	2.35
850.0	15.70	21.32	12.63	9.91	1.10	0.64	43.19	23.86	2.32
875.0	15.64	21.32	12.30	9.70	1.10	0.64	43.28	24.02	2.40
900.0	15.58	21.34	12.00	9.51	1.10	0.64	43.73	23.81	2.38
925.0	15.53	21.35	11.70	9.31	1.10	0.64	42.55	24.00	2.32
950.0	15.47	21.36	11.43	9.13	1.10	0.64	41.99	24.11	2.41
975.0	15.40	21.37	11.12	8.95	1.10	0.64	42.51	23.89	2.39
1000.0	15.34	21.38	10.84	8.77	1.10	0.64	40.68	24.26	2.39
1025.0	15.28	21.36	10.54	8.57	1.09	0.64	41.42	24.24	2.41
1050.0	15.21	21.43	10.27	8.39	1.10	0.64	41.37	24.26	2.45
1075.0	15.14	21.41	9.98	8.22	1.09	0.64	40.90	24.19	2.45
1100.0	15.08	21.41	9.72	8.05	1.09	0.63	40.90	24.15	2.46
1125.0	15.00	21.42	9.44	7.88	1.09	0.63	40.88	24.05	2.47
1150.0	14.93	21.46	9.16	7.71	1.09	0.63	40.51	23.99	2.40
1175.0	14.86	21.46	8.90	7.54	1.09	0.63	40.71	23.89	2.50
1200.0	14.78	21.46	8.63	7.38	1.09	0.63	39.99	23.85	2.44
1300.0	14.45	21.56	7.54	6.74	1.08	0.62	39.68	23.55	2.51
1400.0	14.09	21.73	6.51	6.13	1.08	0.62	39.73	23.28	2.61
1500.0	13.70	21.86	5.55	5.53	1.07	0.60	39.04	22.82	2.60

Typical Performance Curves

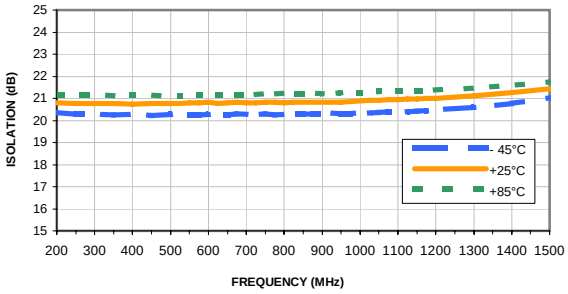
GAIN vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25dBm, Vd = 5.00V



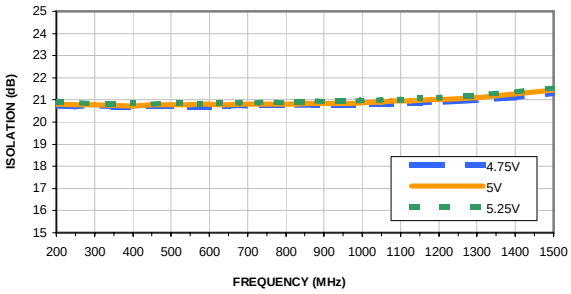
GAIN vs. FREQUENCY & DEVICE VOLTAGE
INPUT POWER = -25dBm, Temperature = +25°C



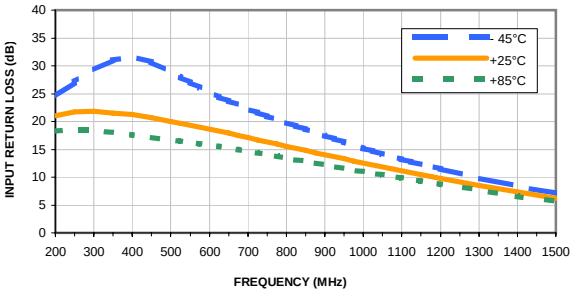
ISOLATION vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25dBm, Vd = 5.00V



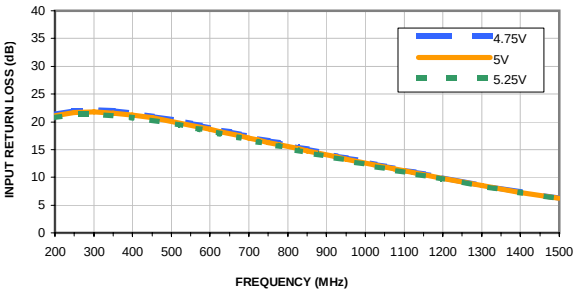
ISOLATION vs. FREQUENCY & DEVICE VOLTAGE
INPUT POWER = -25dBm, Temperature = +25°C



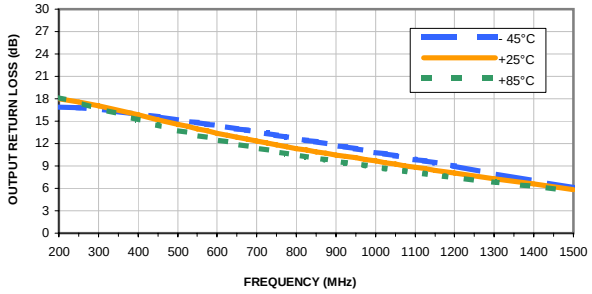
INPUT RETURN LOSS vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25dBm, Vd = 5.00V



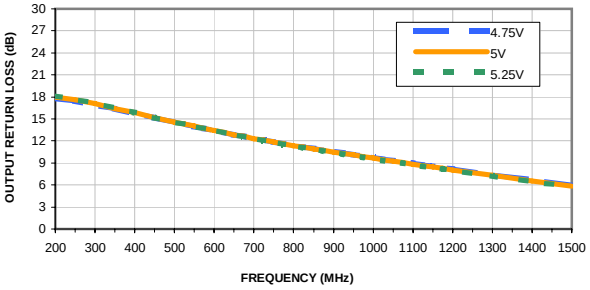
INPUT RETURN LOSS vs. FREQUENCY & DEVICE VOLTAGE
INPUT POWER = -25dBm, Temperature = +25°C



OUTPUT RETURN LOSS vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25dBm, Vd = 5.00V

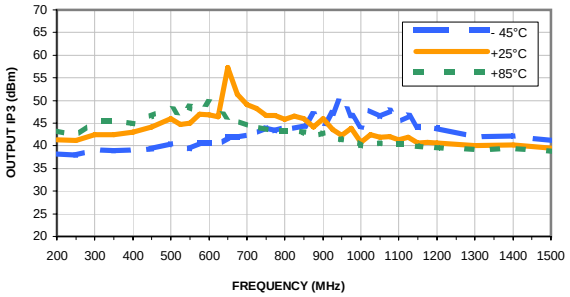


OUTPUT RETURN LOSS vs. FREQUENCY & DEVICE VOLTAGE
INPUT POWER = -25dBm, Temperature = +25°C

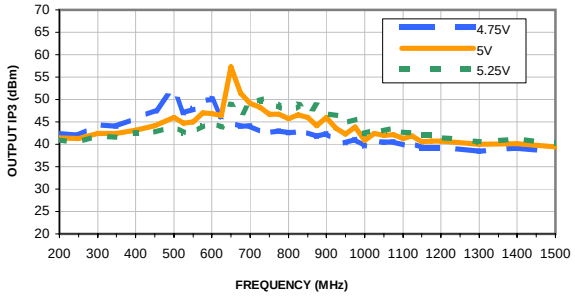


Typical Performance Curves

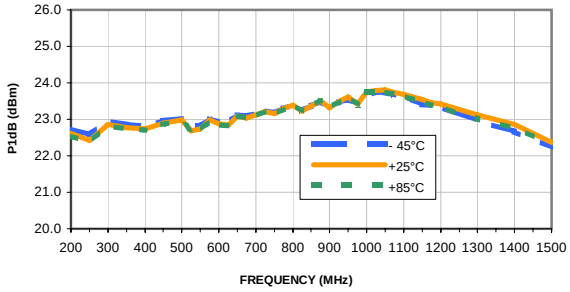
OUTPUT IP3 vs. FREQUENCY & TEMPERATURE
OUTPUT POWER = 5 dBm/tone, Vd = 5.00V



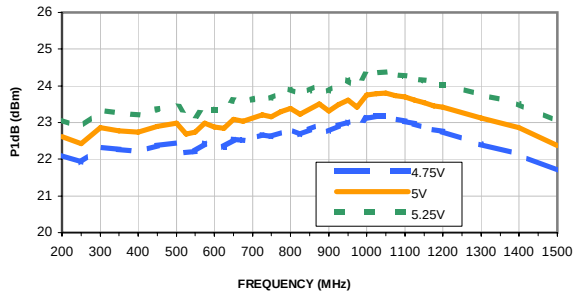
OUTPUT IP3 vs. FREQUENCY & DEVICE VOLTAGE
OUTPUT POWER = 5 dBm/tone, Temperature = +25°C



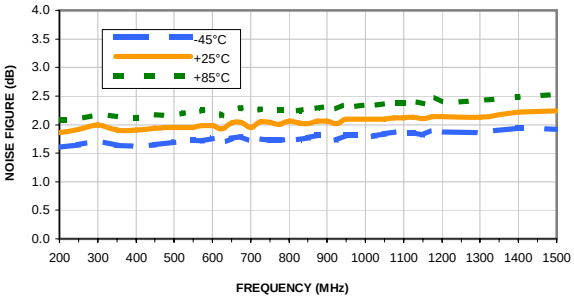
P1dB vs. FREQUENCY & TEMPERATURE
Vd = 5.00V



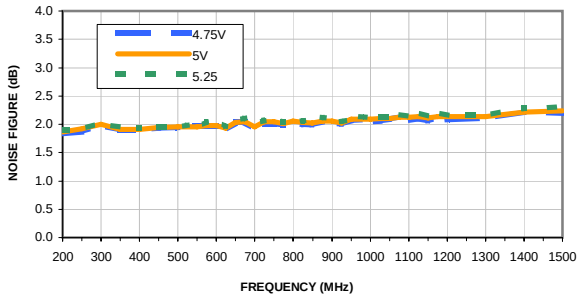
P1dB vs. FREQUENCY & DEVICE VOLTAGE
Temperature = +25°C



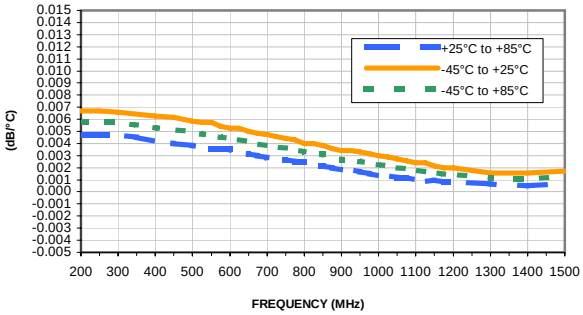
NOISE FIGURE vs. FREQUENCY & TEMPERATURE
Vd = 5.00V



NOISE FIGURE vs. FREQUENCY & DEVICE VOLTAGE
Temperature = +25°C



GAIN VARIATION vs. FREQUENCY & TEMPERATURE
INPUT POWER = -25dBm, Vd = 5.00V

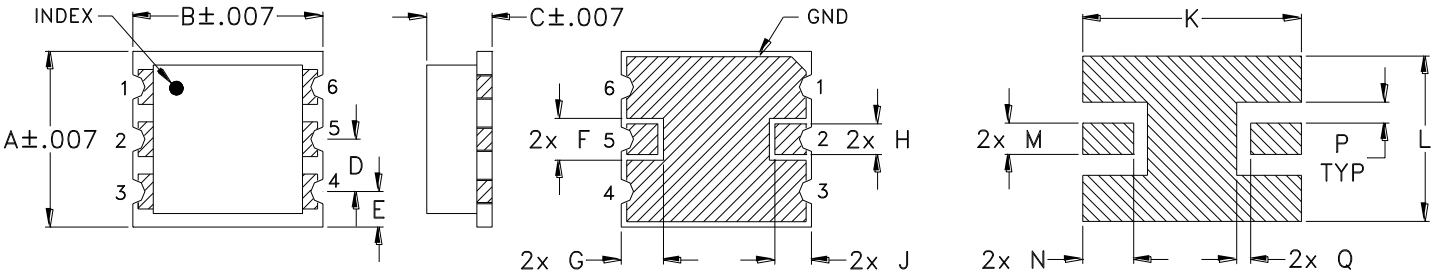


Case Style LZ

Outline Dimensions

LZ1671

PCB Land Pattern



Suggested Layout
Pattern to be within ∀ .002

CASE #	A	B	C	D	E	F	G	H	J	K	L	M
LZ1671	.252 (6.40)	.274 (6.96)	.094 (2.40)	.075 (1.91)	.051 (1.30)	.060 (1.53)	.061 (1.55)	.044 (1.12)	.053 (1.35)	.290 (7.37)	.237 (6.02)	.045 (1.14)

CASE #	N	P	Q	R	WT. GRAM
LZ1671	.060 (1.52)	.030 (.76)	.020 (.51)	- -	0.20

Dimensions are in inches (mm). Tolerances: 3 Pl. ± .003 unless otherwise specified

Notes:

1. Case material: Ceramic.
2. Base material: 20 mil thk laminate.
3. Termination finish: 3-5 µinch (0.075-0.125 microns) gold plating over 120-240 µinch (3-6 microns) low stress electroless nickel.

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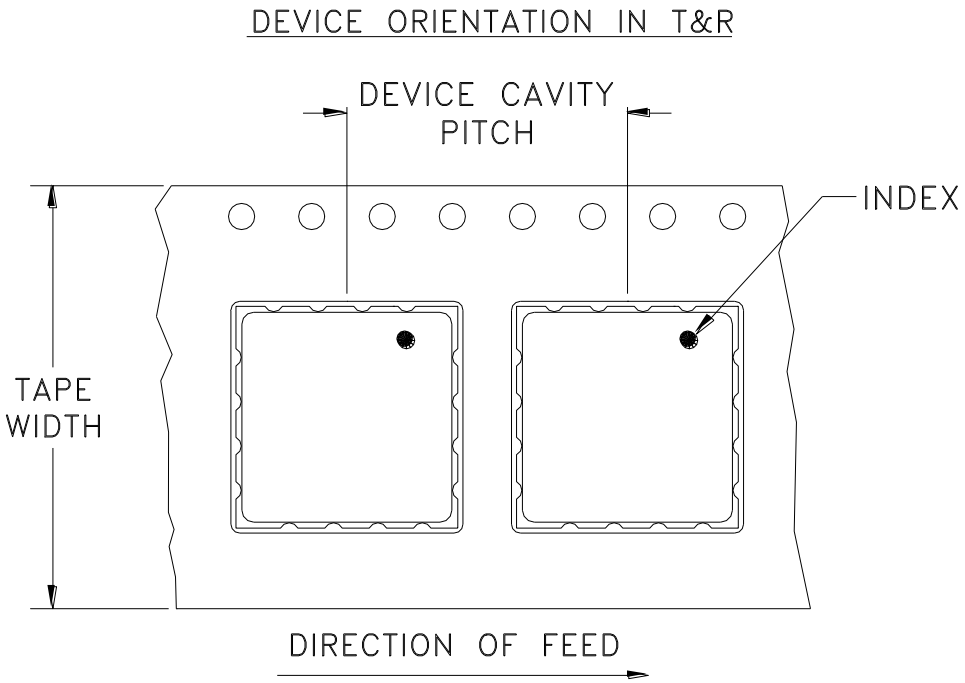
Tape & Reel Packaging TR-F78



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel see note
16	12	7	10
			20
			50
			100
		13	200
			500, 1000

Note: Please consult individual model data sheet to determine device per reel availability.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

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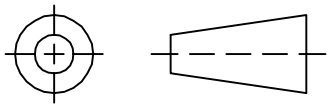
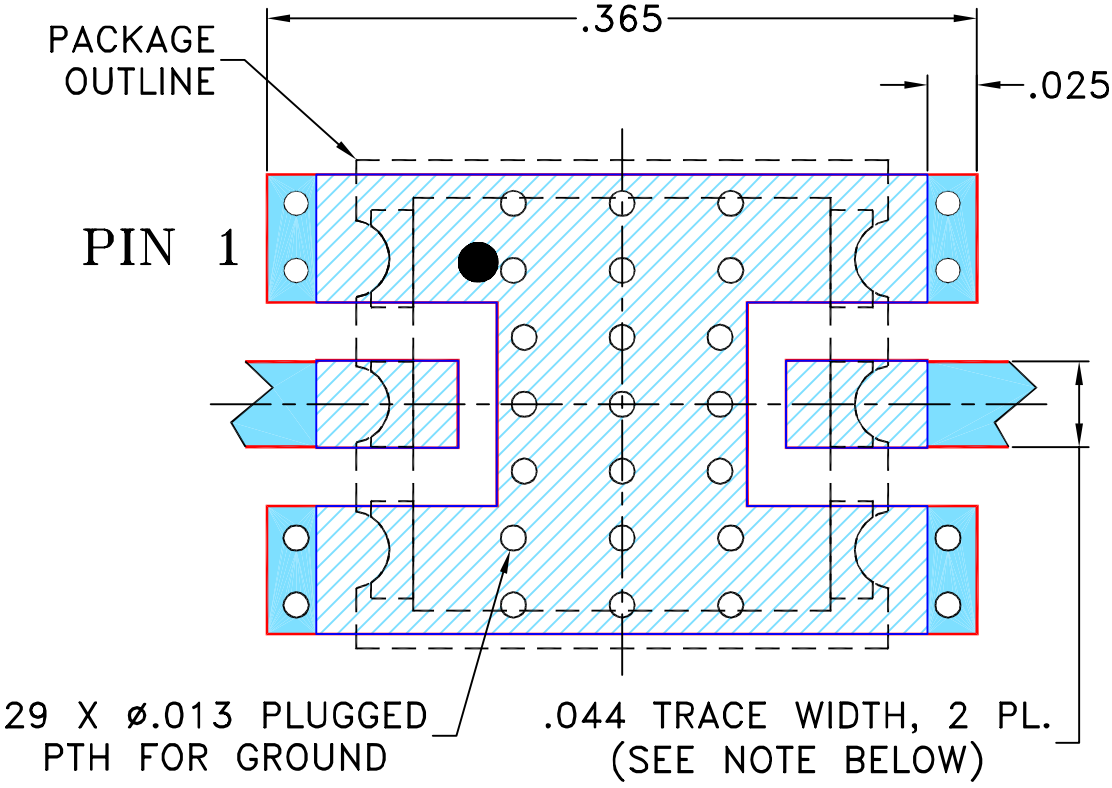
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M133067	NEW RELEASE	10/31/11	IL	DJ

SUGGESTED MOUNTING CONFIGURATION FOR LZ1671 CASE STYLE, "06AM03" PIN CODE



NOTES:

1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	IL	08/04/11
TOLERANCES ON:	CHECKED	AV	10/31/11
2 PL DECIMALS ±	APPROVED	DJ	10/31/11
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

ASHEETA1.DWG REV:A DATE:01/12/95

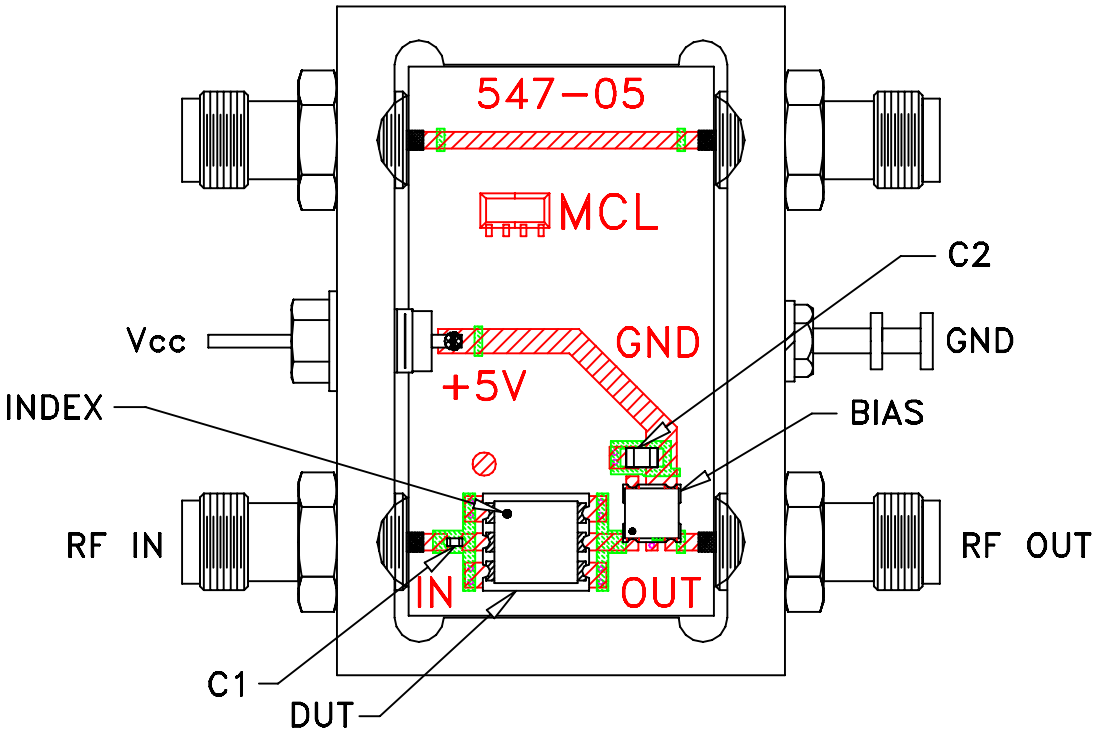
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

PL, 06AM03, LZ1671, TB-641+

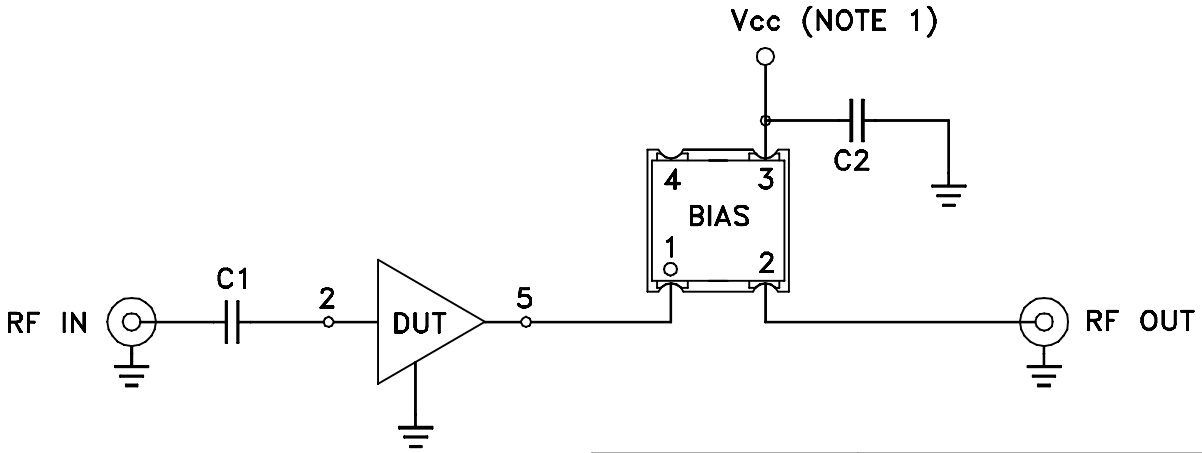
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-350	OR

FILE:	SCALE:	SHEET:
98PL350	10:1	1 OF 1

Evaluation Board and Circuit



TB-641-122+



COMPONENT	DESCRIPTION
DUT	HXG-122+
C1	0.001 uF
C2	0.01 uF
BIAS TEE	Mini-Circuits TCBT-14+

Schematic Diagram

NOTES:

1. Vcc voltage: +5V.
2. SMA Female connectors.
3. PCB material: Rogers RO4350 or equivalent, dielectric constant=3.5, dielectric thickness=.020 inch.

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Environmental Specifications ENV59

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-40° to 85°C	Individual Model Data Sheet
Storage Temperature	-65° to 150° C Ambient Environment	Individual Model Data Sheet
HTOL	1000 hours at 85°C	MIL-STD-883, Method 1005, Condition B
Temperature Cycling	-65° to 150°C, 500 cycles	JESD22-A104, condition C
Autoclave	121°C, 100% RH, 15 PSIG, 96 hours	JESD22-A102, Condition C
High Temp Storage	150°C 168 hours	JESD22-A103, condition B
Solderability, SMT Method	Steam Aging: 8 hours. Solder Reflow for SnAgCu: 245°C+5°C, SnPb: 225°C+5°C	JESD22-B102, Method 2
Marking Resistance to Solvents	Solution A, B, C. Continue with reflow at Tmax: 260°C	JESD22-B017D