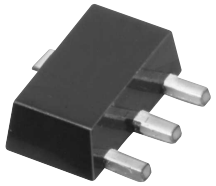
Surface Mount

Monolithic Amplifier

NEW! Gali 74

50Ω, High dynamic range, DC to 1 GHz



SOT-89
(DF 782)

Features

- InGaP HBT IF and RF amplifier
- frequency range, DC to 1 GHz, usable to 4 GHz
- high gain, 25.1 dB typ. at 100 MHz
- up to +19.2 dBm typ. output power at 100 MHz
- high IP3, +38 dBm at 100 MHz
- low noise figure, 2.7 dB typ.
- unconditionally stable
- low thermal resistance
- transient protected
- patent pending
- low cost $1.85 (qty. 1000)

Applications

- cellular
- broadband
- communication receivers & transmitters

Electrical Specifications @ 25°C

MODEL NO.	FREQ.* (GHz)	GAIN, dB Typical						MAXIMUM POWER (dBm)					DYNAMIC RANGE				VSWR (:1) Typ.		MAXIMUM RATING**		DC OPERATING POWER @ Pin 3***				THERMAL RESIS-TANCE	PRICE $
		over frequency, GHz						Output (1 dB Comp.) Typ.					NF	IP3 (dBm) Typ.							Cur-	Volt			θjc,	
	f_L-f_U	0.1	1	2	3	4	Min.@ 1GHz	0.1 GHz	0.5 GHz	1.0 GHz	Min.@ 0.1GHz	Input (no dmg.)	(dB) Typ.	0.1 GHz	0.5 GHz	1.0 GHz	In	Out	I mA	P mW	rent (mA)	Typ	Min	Max	typ. °C/W	Qty. (25)
Gali 74	DC-1	25.1	21.8	18	15.3	13.4	20	19.2	19	18.3	18	10	2.7	38	37	33	1.2	1.6	130	700	80	4.8	4.3	5.3	120	2.35

* Low frequency cutoff determined by external coupling capacitors.
** Permanent damage may occur if any of these limits are exceeded. These ratings are not intended for continuous normal operation.
***Reliability predictions and normal operating conditions are applicable at current specified.

Maximum Ratings

Operating Temperature	-45°C to 85°C
Storage Temperature	-65°C to 150°C

Model Identification

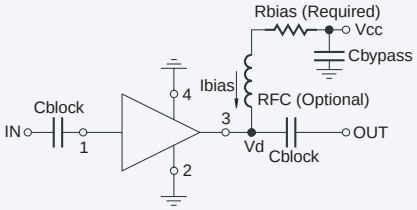
Model	Marking‡
GALI-74	74

‡Prefix letter (optional) designates assembly location. Suffix letters (optional) are for wafer identification.

Pin Configuration

RF IN	1
RF OUT	3
DC	3
GND EXT.	2,4

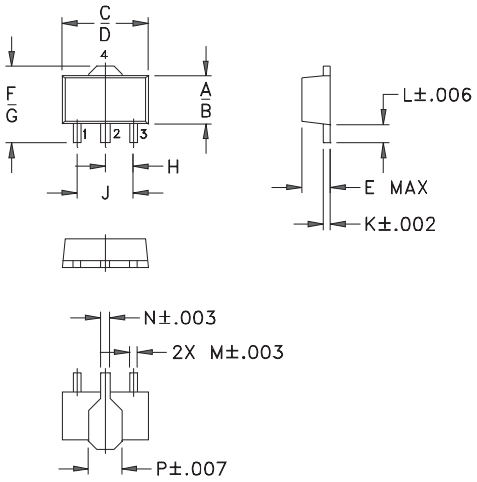
Typical Biasing Configuration



R BIAS
"1%" Resistor Values

Vcc	GALI-74
7	28.7
8	41.2
9	53.6
10	66.5
11	78.7
12	90.9
13	102
14	115
15	127

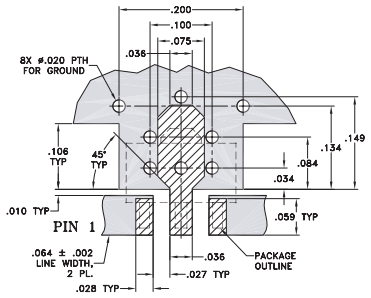
Outline Drawing (DF782)



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	wt.
.102	.090	.181	.173	.063	.167	.155	.059	.118	.015	.041	.016	.019	.065	grams
2.59	2.29	4.60	4.39	1.60	4.24	3.94	1.50	3.00	0.38	1.04	0.41	0.48	1.65	.2

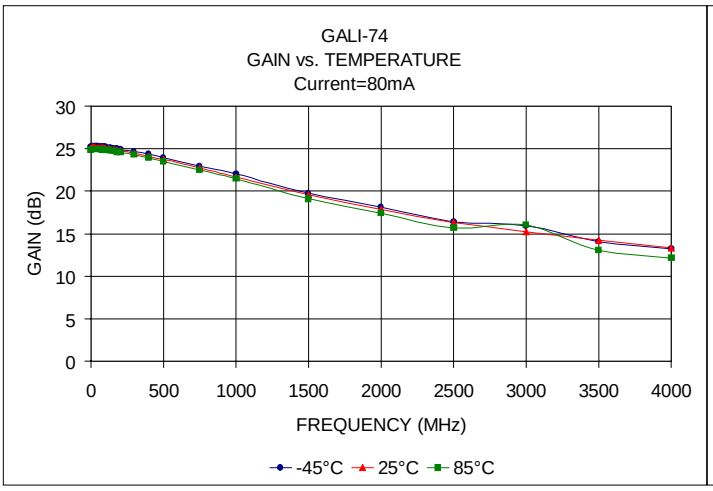
Suggested PCB Layout (PL-019)

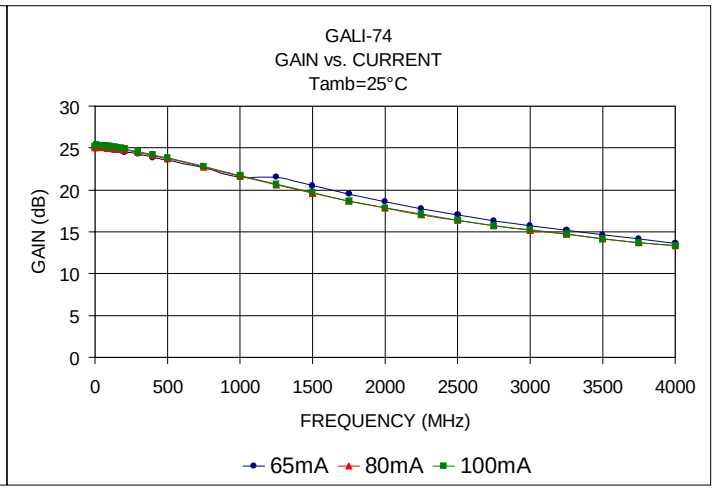


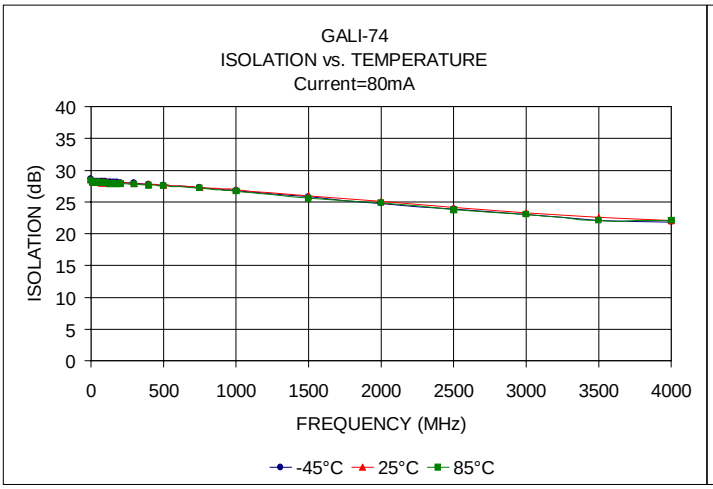
NOTE: TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS .030" ± .002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

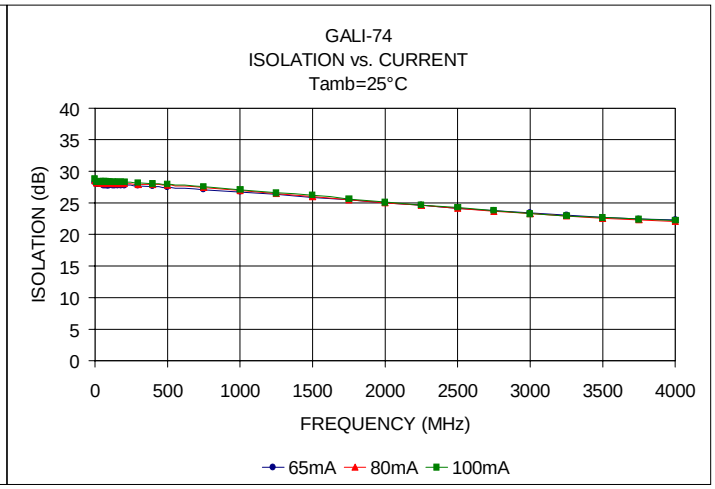
DENOTES PCB COPPER LAYOUT

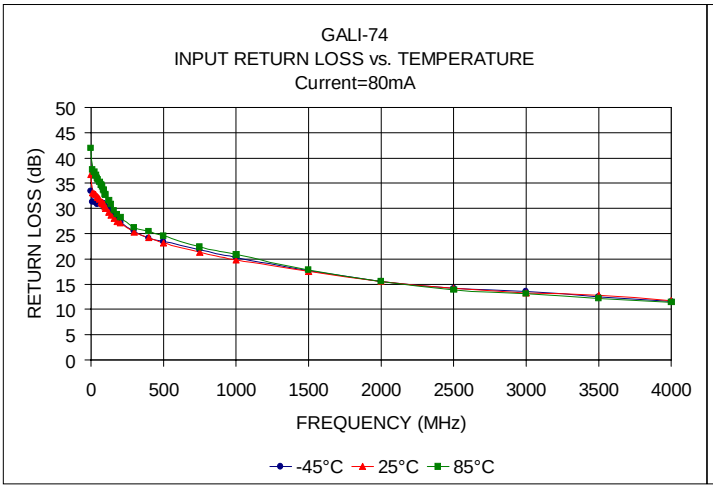
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

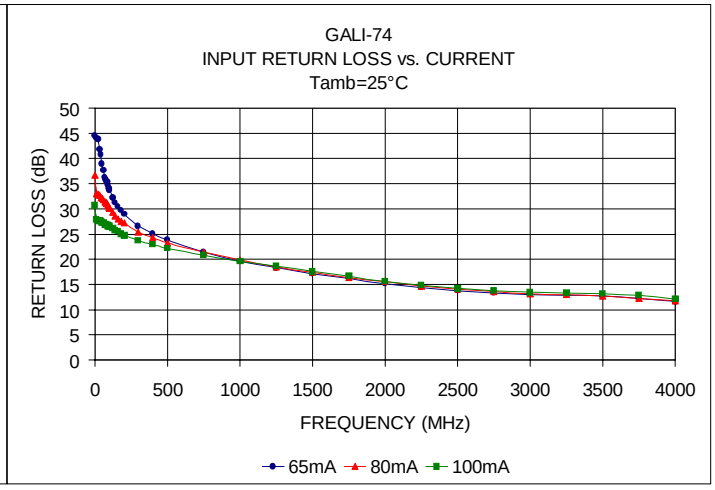

GALI-74
GAIN vs. TEMPERATURE
Current=80mA
GAIN (dB)
FREQUENCY (MHz)
-45°C
25°C
85°C


GALI-74
GAIN vs. CURRENT
Tamb=25°C
GAIN (dB)
FREQUENCY (MHz)
65mA
80mA
100mA

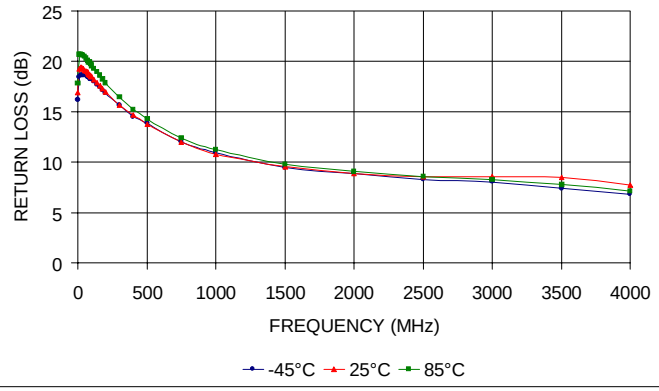

GALI-74
ISOLATION vs. TEMPERATURE
Current=80mA
ISOLATION (dB)
FREQUENCY (MHz)
-45°C
25°C
85°C


GALI-74
ISOLATION vs. CURRENT
Tamb=25°C
ISOLATION (dB)
FREQUENCY (MHz)
65mA
80mA
100mA

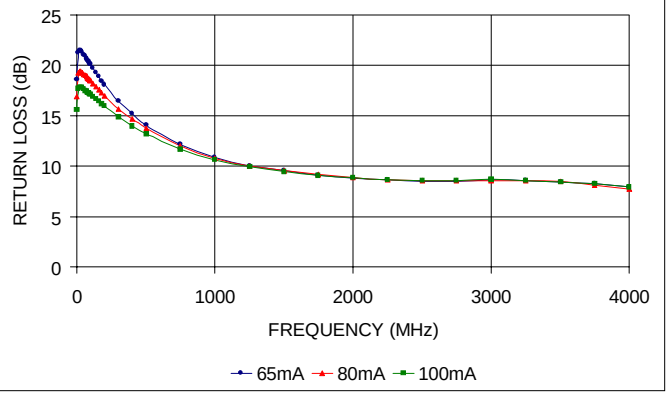

GALI-74
INPUT RETURN LOSS vs. TEMPERATURE
Current=80mA
RETURN LOSS (dB)
FREQUENCY (MHz)
-45°C
25°C
85°C


GALI-74
INPUT RETURN LOSS vs. CURRENT
Tamb=25°C
RETURN LOSS (dB)
FREQUENCY (MHz)
65mA
80mA
100mA

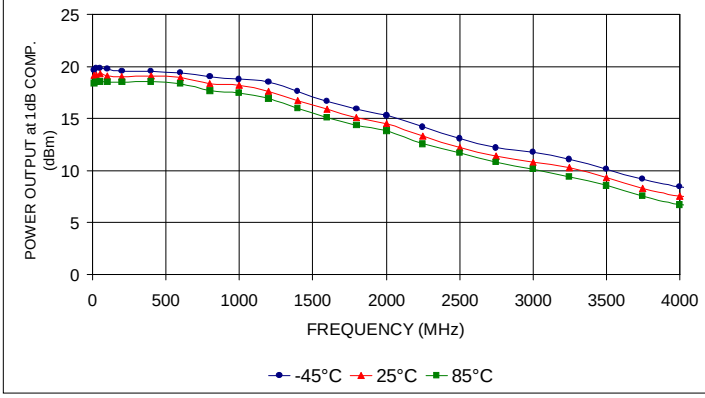
GALI-74
OUTPUT RETURN LOSS vs. TEMPERATURE
Current=80 mA



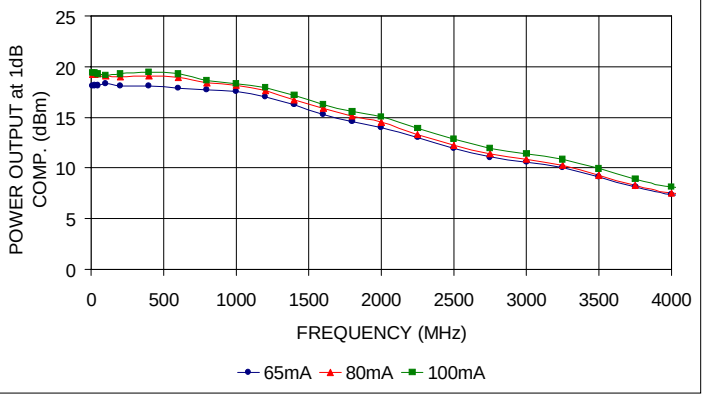
GALI-74
OUTPUT RETURN LOSS vs. CURRENT
Tamb=25°C



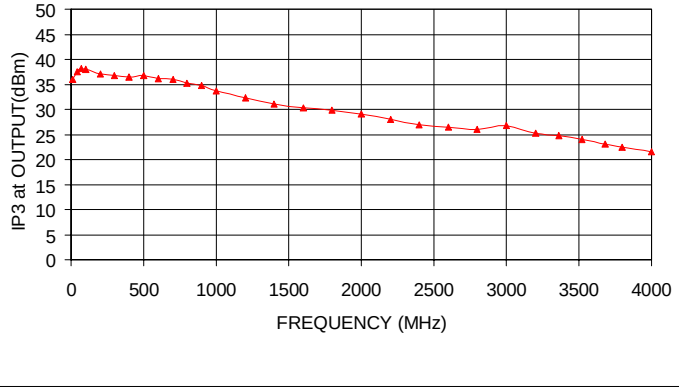
GALI-74
1dB COMPRESSION vs. TEMPERATURE
Current=80mA



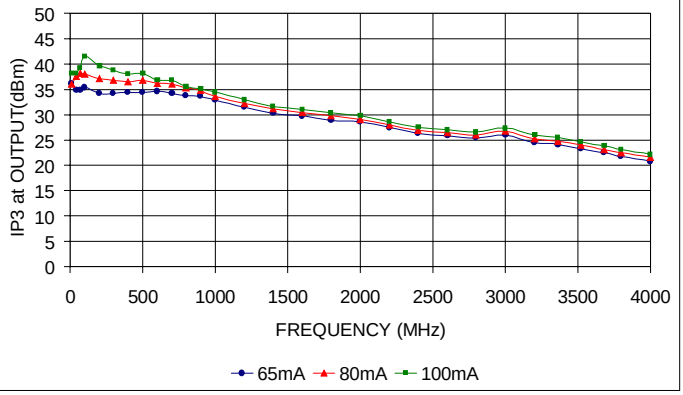
GALI-74
1dB COMPRESSION vs. CURRENT
Tamb=25°C



GALI-74
IP3 at 25°C
Current=80mA



GALI-74
IP3 vs. CURRENT
Tamb=25°C



Performance Curves