

Monolithic Amplifiers

Gali-19(+) Gali-29(+) Gali-39(+)
Gali-49(+) Gali-59(+)

50Ω, Broadband, DC to 7 GHz



CASE STYLE : DF782

Features

- miniature SOT-89 package
- frequency range, DC to 7 GHz
- up to 17.6 dBm typ. output power
- excellent package for heat dissipation, exposed metal bottom
- protected by US patent, 6,943,629

Applications

- cellular
- PCS
- communication receivers & transmitters

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

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

Electrical Specifications @ 25°C

MODEL NO.	FREQ. [▲] (GHz)	GAIN, dB Typical									MAXIMUM POWER, dBm at 7 GHz* Output (1 dB Comp.)			DYNAMIC RANGE at 2 GHz* NF IP3		VSWR (:1) Typ.				MAXIMUM CURRENT RATING** I mA	DC OPERATING POWER @ Pin 3*** Current (mA) Device Volt				THERMAL RESISTANCE θ _{jc} , typ. °C/W	PRICE \$ Qty. (25)
		over frequency, GHz									Typ.	Min.	Input (no dmg.)	Typ.	Typ.	In DC-3 GHz	3-f _U GHz	Out DC-3 GHz	3-f _U GHz		Typ	Min	Max			
		f _L - f _U	0.1	1	2	3	4	5	7	10														Min. @ 2 GHz		
Gali-19(+)	DC-7	12.1	11.7	11.6	10.7	10.8	10.1	11.0	14.5	9.6	10.6	9.0	15	6.5	23.7	1.6	1.7	1.5	2.3	55	40	3.6	3.2	4.0	311	1.19
Gali-29(+)	DC-7	15.4	15.1	14.7	13.7	13.6	12.9	14.2	12.5	12.7	11.2	10.0	15	6.0	24.7	1.5	1.6	1.5	2.3	55	40	3.6	3.2	4.0	340	1.19
Gali-39(+)	DC-7	20.8	21.1	19.7	17.7	17.0	16.1	17.6	9.8	17.7	10.5	9.0	13	4.9	22.9	1.6	1.8	1.5	2.3	55	35	3.5	3.1	3.9	350	1.19
Gali-49(+)	DC-5	14.0	13.7	13.6	13.7	13.3	13.1	10.7	—	11.5	16.4	15.0	20	5.5	33.3	1.7	1.2	1.5	1.4	85	65	5.0	4.5	5.4	171	1.79
Gali-59(+)	DC-5	20.6	19.7	18.3	16.7	15.4	14.0	10.2	—	16.3	17.6	16.5	13.0	4.3	33.3	1.6	1.5	1.5	1.7	85	65	4.8	4.3	5.2	209	1.79

- ▲ Low frequency cutoff determined by external coupling capacitors.
- * For Pout @ 1dB compression, Gali-49(+),-59(+)
For IP3, Gali-49(+),-59(+)
For IP3, Gali-49(+),-59(+)
- ** 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.

f_U is the upper frequency limit for each model as shown in the table.

Maximum Ratings

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

Pin Configuration

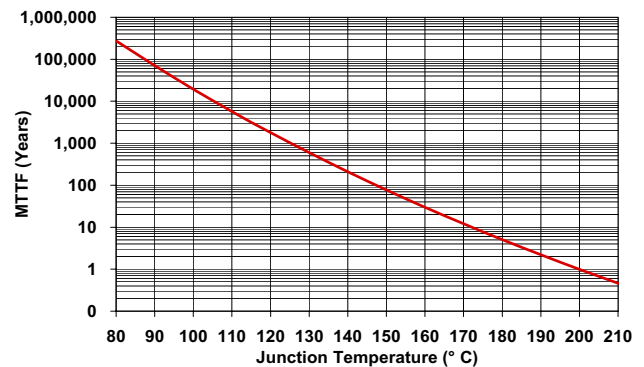
RF IN	1
RF OUT	3
DC	3
GROUND	2

Model Identification

Model	Marking [†]
Gali-19(+)	19
Gali-29(+)	29
Gali-39(+)	39
Gali-49(+)	49
Gali-59(+)	59

[†] Prefix letter (optional) designates assembly location. Suffix letters (optional) are for wafer identification.

MTTF vs. Junction Temp.



REV. D
M102713
D60-1117.DOC
Gali-19 Q0201030
Gali-29 Q0201031
Gali-39 Q0201032
Gali-49 EC-938110
Gali-59 EC-938111
RS/TD/CP
060222
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INTERNET <http://www.minicircuits.com>

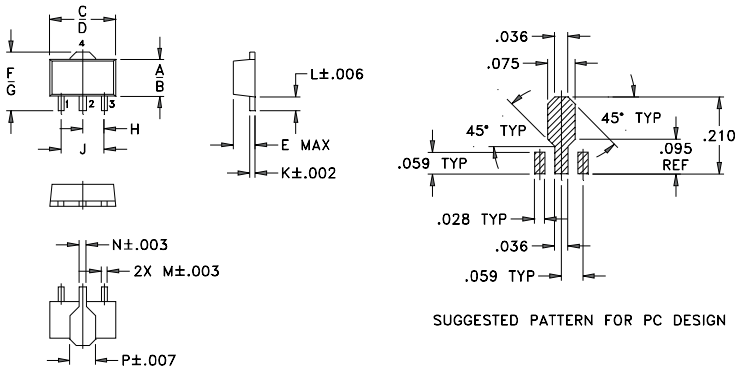
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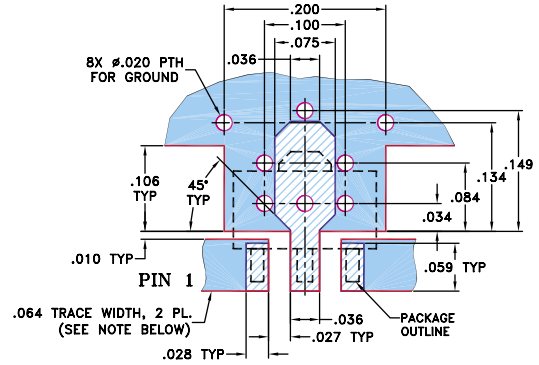
Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
.102	.090	.181	.173	.063	.167	.155	.059
2.59	2.29	4.60	4.39	1.60	4.24	3.94	1.50
J	K	L	M	N	P		wt
.118	.015	.041	.016	.019	.065		grams
3.00	0.38	1.04	0.41	0.48	1.65		0.2

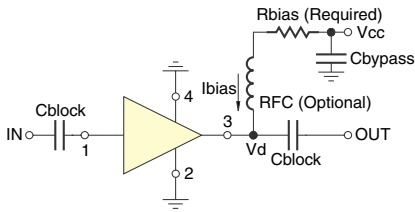
Demo Board MCL PIN: Gali-TB
Suggested PCB Layout (PL-019)



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; 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

Typical Biasing Configuration



R BIAS

"1%" Resistor Values (ohms) for Optimum Biasing of Gali Models

Vcc	Gali-19(+)	Gali-29(+)	Gali-39(+)	Gali-49(+)	Gali-59(+)
7	88.7	88.7	107	34.0	36.5
8	113	113	133	48.7	51.1
9	137	137	162	64.9	64.9
10	162	162	191	80.6	80.6
11	187	187	221	95.3	97.6
12	215	215	249	110	113
13	237	237	280	127	127
14	261	261	309	143	143
15	287	287	340	158	158
16	309	316	365	174	174
17	332	340	392	187	191
18	357	365	422	205	205
19	383	392	453	221	221
20	412	412	475	237	237

