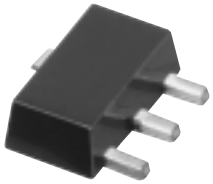
Surface Mount

Monolithic Amplifiers

NEW!

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

Applications

- cellular
- PCS
- communication receivers & transmitters

Electrical Specifications @ 25°C

	MODEL NO.	FREQ.▲ (GHz)	GAIN, dB Typical									MAXIMUM POWER, dBm at 7 GHz*			DYNAMIC RANGE at 2 GHz*		VSWR (:1) Typ.				MAXIMUM CURRENT RATING**	DC OPERATING POWER @ Pin 3***				THERMAL RESISTANCE	PRICE $
			over frequency, GHz								Min. @ 2 GHz	Output (1 dB Comp.)		Input (no dmg.)	NF	IP3	In		Out			Current	Device Voltage			θjc, typ.	
		f_L - f_U	0.1	1	2	3	4	5	7	10		Typ.	Min.		dB Typ.	dBm Typ.	DC-3 GHz	3-f_U GHz	DC-3 GHz	3-f_U GHz	I mA	(mA)	Typ	Min	Max	°C/W	Qty. (25)
LOW POWER	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
MEDIUM POWER	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 at 2 GHz.
For IP3, Gali-49,-59 at 1 GHz.

** 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

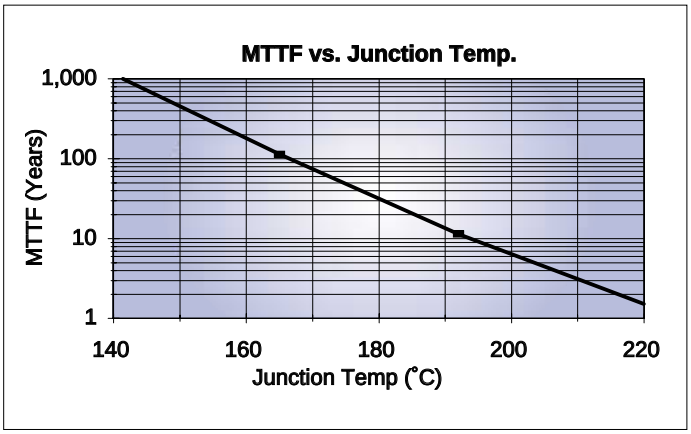
Pin Configuration

RF IN	1
RF OUT	3
DC	3
GND EXT.	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.



REV. B
M89969
D60-1117.DOC
Gali-19 Q0201030
Gali-29 Q0201031
Gali-39 Q0201032
Gali-49 EC-9381/10
Gali-59 EC-9381/11
RS/TD/CP
031202

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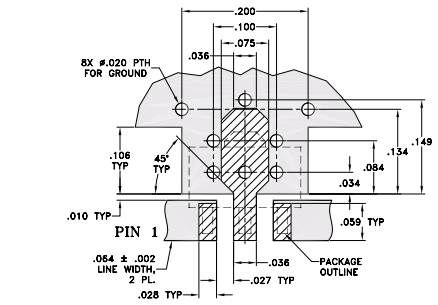
Suggested Layout for PCB Pattern

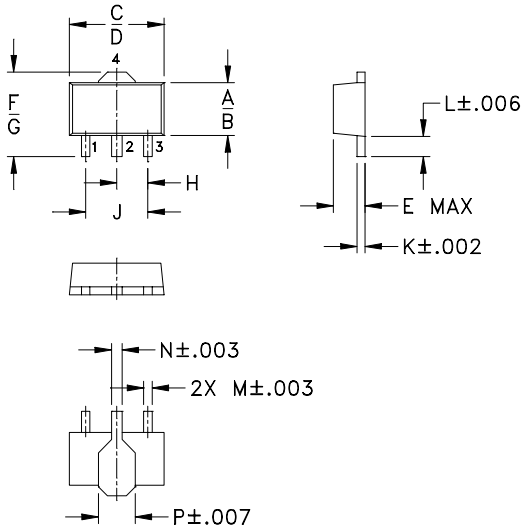


NOTE: TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS .030" ± .002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

DENOTES PCB COPPER LAYOUT

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Outline Drawing

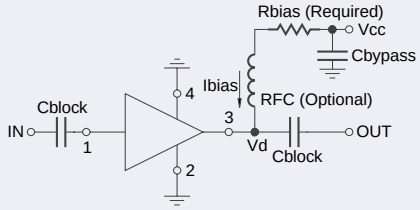


Outline Dimensions (inch / mm)

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	.2

Typical Biasing Configuration



Test Board includes case, connectors, and components (in bold) soldered to PCB

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