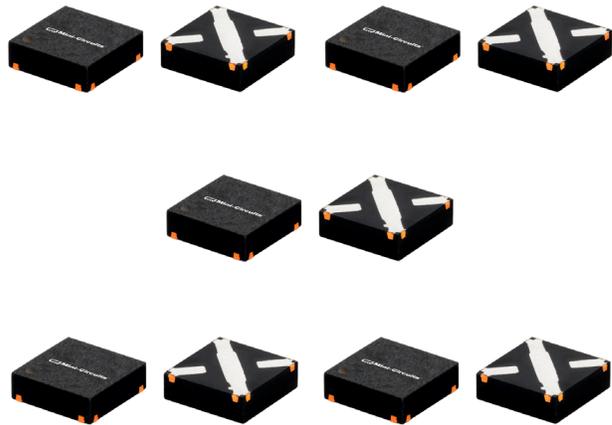




# Wideband Amplifiers

50Ω DC to 8 GHz



## FEATURES

- Wideband, 50Ω
- Up to +17.3 dBm typ. output power
- Flat output power
- Usability to 10 GHz (Models LEE-19+, -29+, -39+)
- High IP3 up to +33 dBm typ.
- MCLP™ (Mini-Circuits Leadless Package) (L) 3.0 x (W) 3.0 x (H) 0.89mm plastic case
- Exposed metal bottom
- Package excellent for heat dissipation
- Low thermal resistance for high reliability



Evaluation boards available.  
See individual model data sheets.



## K2-LEE+ ELECTRICAL SPECIFICATIONS

(kit includes 5 models, 10 of each, 50 total)

Model	Freq. <sup>1</sup> (GHz)	Gain (dB) Typical								Maximum Power (dBm)			Dynamic Range		VSWR (:1) Typ.				Max. Rat- ing <sup>2</sup> I (mA)	DC <sup>3</sup> Operating Power @ pin 3				Therm. Resist. θjc Typ. °C/W	Evaluation Board
		Over frequency, GHz								Output (1dB Compr.) 2 GHz	Input <sup>2</sup> f <sub>u</sub>	NF (dB) Typ.	IP3 (dBm) Typ.	In DC-3 GHz	In 3-f <sub>u</sub> GHz	Out DC-3 GHz	Out 3-f <sub>u</sub> GHz	Current (mA)		Device Volt.					
		f <sub>c</sub> -f <sub>u</sub>	0.1	1	2	4	5	8	10											Min @ 2 GHz	Typ.	Min.	Typ.		
LEE-19+	DC-8	12.1	12.0	12.1	12.0	11.6	10.6	9.0	9.6	10.2	11.3	15	6.5	24.5	1.5	1.2	1.4	1.8	55	40	3.6	3.2	4.0	322	TB-413-19
LEE-29+	DC-8	15.5	15.4	15.4	14.9	14.1	12.5	10.6	13.3	10.9	11.3	15	5.5	25.5	1.4	1.3	1.3	1.6	55	40	3.6	3.2	4.0	334	TB-413-29
LEE-39+	DC-8	21.9	21.4	20.8	18.3	16.6	13.5	-	18.5	10.4	11.3	13	2.4	23.4	1.3	1.4	1.3	1.6	55	35	3.5	3.1	3.9	321	TB-413-39
LEE-49+	DC-5	14.0	13.9	14.3	14.0	13.1	7.8	-	12.0	16.4	10.8	15	5.5	33.0	1.6	1.2	1.4	1.4	85	65	4.9	4.5	5.3	229	TB-413-49
LEE-59+	DC-5	20.6	20.3	19.7	15.8	13.8	7.6	-	17.8	17.3	11.7	13	4.5	33.0	1.5	1.5	1.5	1.6	85	65	4.8	4.3	5.2	244	TB-413-59

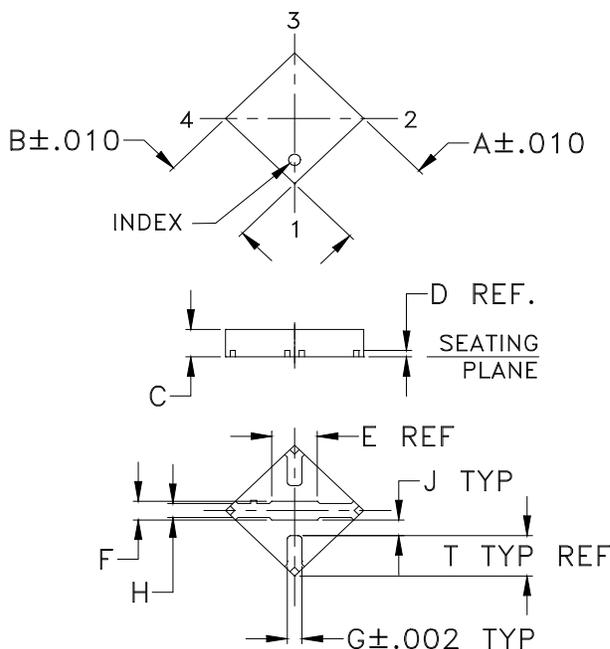
Protected under U.S. Patent 6,943,629

1. Low frequency cutoff determined by external coupling capacitors. f<sub>u</sub> is the upper frequency limit for each model.

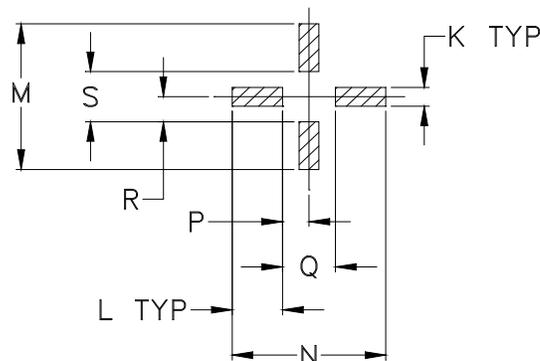
2. Permanent damage may occur if any of these limits are exceeded. These ratings are not intended for continuous normal operation.

3. Supply voltage must be connected to pin 3 through a bias resistor in order to prevent damage. Reliability predictions are applicable at specified current and normal operating conditions.

### Outline Dimensions



### PCB Land Pattern



Suggested Layout,  
Tolerance to be within  $\pm.002$

CASE #	A	B	C	D	E	F	G	H	J	K	L	M	N	P
FG873	.118 (3.00)	.118 (3.00)	.035 (0.89)	.008 (0.20)	.07 (1.78)	.024 (0.60)	.017 (0.43)	.018 (0.46)	.021 (0.52)	.024 (0.61)	.061 (1.55)	.186 (4.72)	.186 (4.72)	.032 (0.81)

CASE #	Q	R	S	T	WT. GRAM
FG873	.064 (1.63)	.032 (0.81)	.064 (1.63)	.050 (1.27)	.02

Dimensions are in inches (mm). Tolerances: 2 Pl.  $\pm .01$ ; 3Pl.  $\pm .004$

#### Notes:

- Case material: Plastic.
- Termination finish:  
For RoHS Case Styles: Tin-Silver alloy plate over Nickel barrier or Matte-Tin per Data Sheet.  
All models, (+) suffix.  
For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site

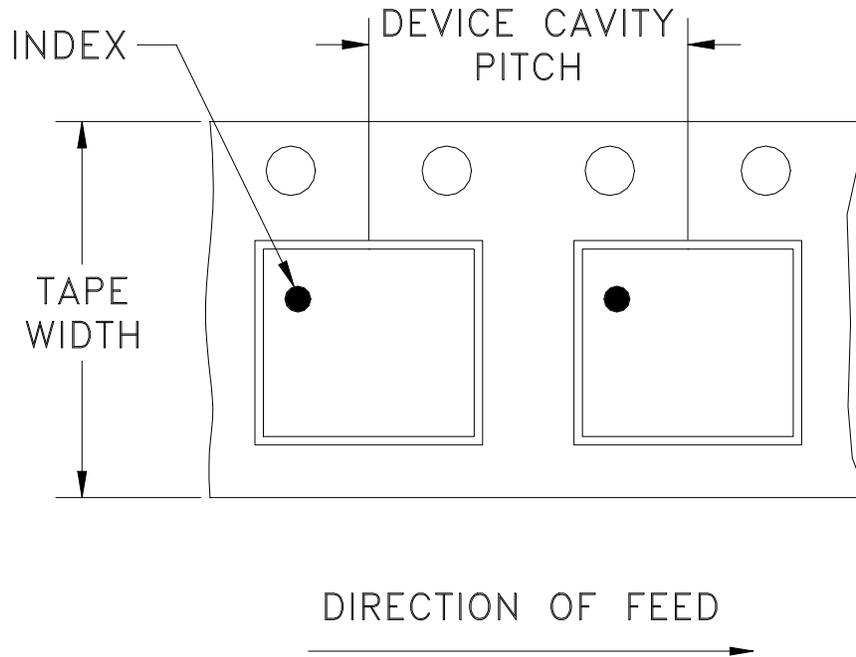


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RF/IF MICROWAVE COMPONENTS

# Tape & Reel Packaging TR-F68

## DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel see note	
12	8	7	Small quantity standard	20
				50
				100
				200
				500
		7	Standard	1000
		13	Standard	2000
				3000
				4000

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](http://www.minicircuits.com/pages/pdfs/tape.pdf)



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