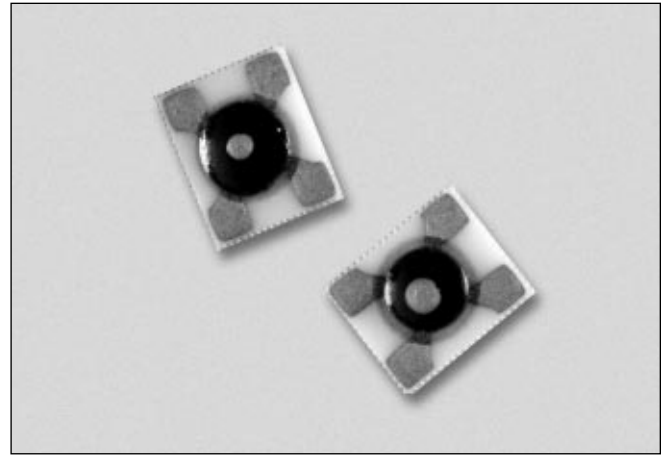


Features

- High Volume Automatic Assembly
- For Microwave MIC Assembly and Automated High Volume Manufacturing
- Mechanically Rugged Design
- 100% DC Tested
- Three Barrier Heights for Customized Mixer Performance

Description

Alpha's ceramic Chip on Board (COB) mixer quads are designed for high performance RF and microwave receiver applications. These devices utilize Alpha's advanced silicon beamless Schottky technology, combined with precision ceramic COB assembly techniques, to achieve a high degree of device reliability in commercial applications. Performance to 10 GHz is available with the ring quads in the 106 package, which employs via hole technology resulting in metalized contacts on the bottom side and eliminating the need for wire bonds to topside contacts.



Absolute Maximum Ratings

Characteristic	Value
Maximum Current (I_{MAX})	50 mA
Power Dissipation (P_D) CW	75 mW/Junction
Storage Temperature (T_{ST})	-65°C to +175°C
Operating Temperature (T_{OP})	-65°C to +150°C
ESD Human Body Model	Class 1B

Electrical Specifications at 25°C

Part Number	Barrier	V _F @ 1 mA (mV)		(Δ) V _F @ 1 mA ¹ (mV)	C _J @ 0V (pF)		(Δ) C _T @ 0V ² (pF)	R _T @ 10 mA (Ω)	Outline Drawing
		Min.	Max.	Max.	Min.	Max.	Max.	Max.	
Ring Quad (to 6 GHz)									
DMF3926-101	Low	200	260	15	0.3	0.5	0.07	8	101
DME3927-101	Medium	300	400	15	0.3	0.5	0.07	8	101
DMJ3928-101	High	525	625	15	0.3	0.5	0.07	8	101
Ring Quad (to 10 GHz)									
DMF3948-106	Low	250	310	15	0.05	0.15	0.07	15	106
DME3949-106	Medium	350	450	15	0.05	0.15	0.07	15	106
DMJ3950-106	High	575	675	15	0.05	0.15	0.07	15	106
Crossover Ring Quad (to 6 GHz)									
DMF3926-100	Low	200	260	15	0.3	0.5	0.07	8	100
DME3927-100	Medium	300	400	15	0.3	0.5	0.07	8	100
DMJ3928-100	High	525	625	15	0.3	0.5	0.07	8	100
Back-to-Back Crossover Quad (to 6 GHz)									
DMF3945-103	Low	200	260	15	0.3	0.5	0.07	8	103
DME3946-103	Medium	300	400	15	0.3	0.5	0.07	8	103
DMJ3947-103	High	525	625	15	0.3	0.5	0.07	8	103

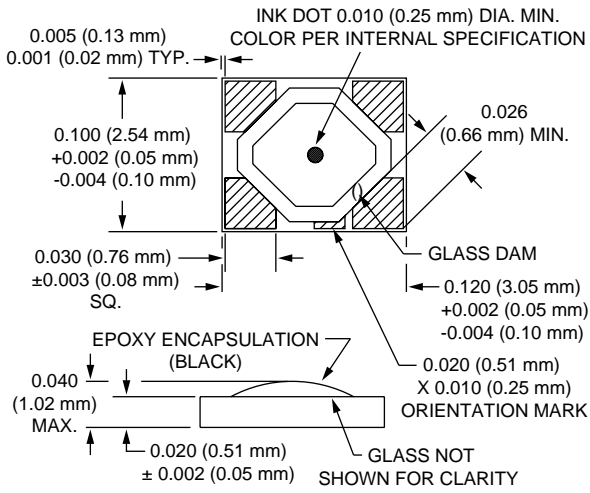
Part Number	Barrier	V _F @ 1 mA (mV)		(Δ) V _F @ 1 mA ¹ (mV)	C _J @ 0V (pF)		(Δ) C _T @ 0V ² (pF)	R _T @ 10 mA (Ω)	V _B @ 10 μA (V)	Outline Drawing
		Min.	Max.	Max.	Min.	Max.	Max.	Max.	Min.	
Bridge Quad (to 6 GHz)										
DMF3929-102	Low	200	260	15	0.3	0.5	0.07	8	2	102
DME3930-102	Medium	300	400	15	0.3	0.5	0.07	8	3	102
DMJ3931-102	High	525	625	15	0.3	0.5	0.07	8	4	102

1. Forward voltage difference between package electrodes.
2. Capacitance difference between package electrodes.

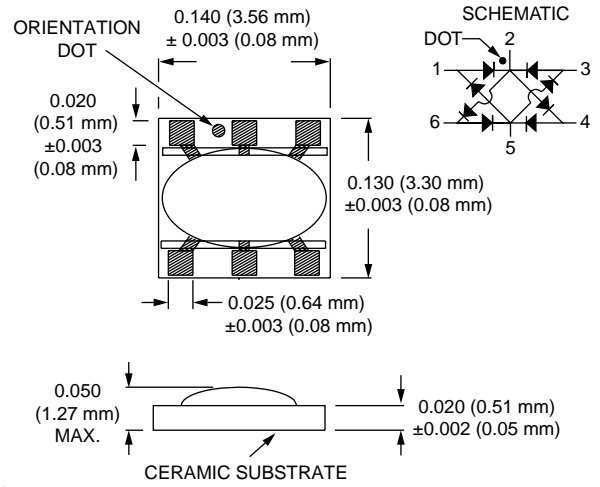
SPICE Model Parameters (Per Junction)

Parameter	Unit	DMF3926 DMF3929 DMF3945	DME3927 DME3930 DME3946	DMJ3928 DMJ3931 DMJ3947	DMF3948	DME3949	DMJ3950
IS	A	2.5E-07	1.3E-09	9.0E-13	4.4E-08	9.3E-10	3.3E-13
R _S	Ω	4	4	4	9	9	9
N		1.04	1.04	1.04	1.04	1.04	1.04
TT	s	1E-11	1E-11	1E-11	1E-11	1E-11	1E-11
C _{J0}	pF	0.42	0.39	0.39	0.11	0.10	0.10
M		0.32	0.37	0.42	0.32	0.37	0.42
E _G	eV	0.69	0.69	0.69	0.69	0.69	0.69
XTI		2	2	2	2	2	2
F _C		0.5	0.5	0.5	0.5	0.5	0.5
B _V	V	2	3	4	3	4	5
I _{BV}	A	1.0E-05	1.0E-05	1.0E-05	1.0E-05	1.0E-05	1.0E-05
V _J	V	0.495	0.595	0.800	0.495	0.595	0.800

100, 101, 102



103



Notes:

1. Bottom side is free of metalization.
2. The minimum specified area of the contact pads (0.017 x 0.022) shall be free of epoxy.

106

