

**DATA SHEET**

# Chip On Board Mixer Quads

## 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
- Available lead (Pb)-free, RoHS-compliant, and Green

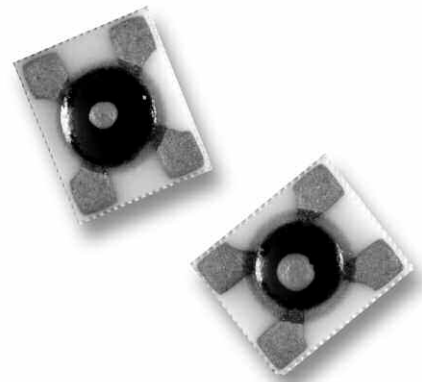
## Description

Skyworks ceramic Chip on Board (COB) mixer quads are designed for high-performance RF and microwave receiver applications. These devices utilize Skyworks advanced silicon beamless Schottky technology, combined with precision ceramic COB assembly techniques, to achieve a high degree of device reliability in commercial applications.

**NEW**



Skyworks Green products are lead (Pb)-free, RoHS (Restriction of Hazardous Substances)-compliant, conform to the EIA/EICTA/JEITA Joint Industry Guide (JIG) Level A guidelines, and are free from antimony trioxide and brominated flame retardants.



## 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
Electrostatic Discharge (ESD) Human Body Model (HBM)	Class 0

Performance is guaranteed only under the conditions listed in the specifications table and is not guaranteed under the full range(s) described by the Absolute Maximum specifications. Exceeding any of the absolute maximum/minimum specifications may result in permanent damage to the device and will void the warranty.

**CAUTION:** Although this device is designed to be as robust as possible, ESD (Electrostatic Discharge) can damage this device. This device must be protected at all times from ESD. Static charges may easily produce potentials of several kilovolts on the human body or equipment, which can discharge without detection. Industry-standard ESD precautions must be employed at all times.

**Electrical Specifications at 25 °C**

Part Number	Barrier	V <sub>F</sub> @ 1 mA (mV)		(Δ) V <sub>F</sub> @ 1 mA <sup>1</sup> (mV)	C <sub>J</sub> @ 0 V (pF)		(Δ) C <sub>T</sub> @ 0 V <sup>2</sup> (pF)	R <sub>T</sub> @ 10 mA (Ω)	Outline Drawing
		Min.	Max.	Max.	Min.	Max.	Max.	Max.	
<b>Ring Quad (to 6 GHz)</b>									
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
<b>Crossover Ring Quad (to 6 GHz)</b>									
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
<b>Back-to-Back Crossover Quad (to 6 GHz)</b>									
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

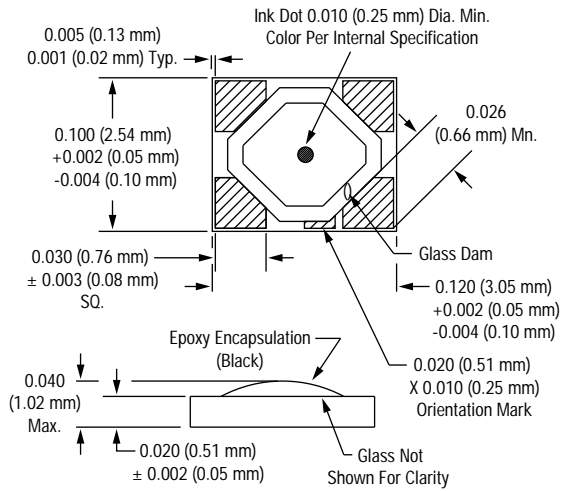
Part Number	Barrier	V <sub>F</sub> @ 1 mA (mV)		(Δ) V <sub>F</sub> @ 1 mA <sup>1</sup> (mV)	C <sub>J</sub> @ 0 V (pF)		(Δ) C <sub>T</sub> @ 0 V <sup>2</sup> (pF)	R <sub>T</sub> @ 10 mA (Ω)	V <sub>B</sub> @ 10 μA (V)	Outline Drawing
		Min.	Max.	Max.	Min.	Max.	Max.	Max.	Min.	
<b>Bridge Quad (to 6 GHz)</b>										
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.

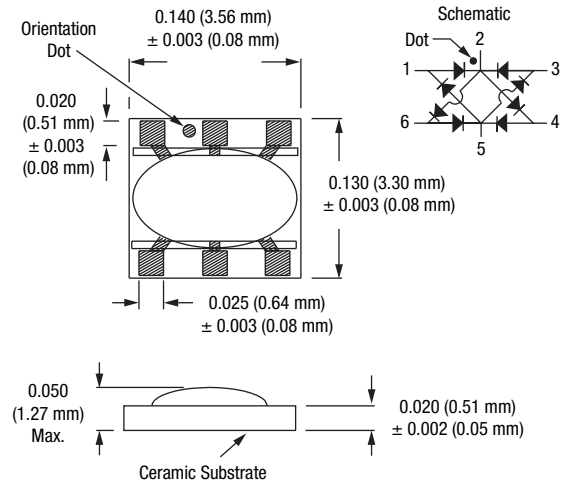
**SPICE Model Parameters (Per Junction)**

Parameter	Unit	DMF3926 DMF3929 DMF3945	DME3927 DME3930 DME3946	DMJ3928 DMJ3931 DMJ3947
I <sub>S</sub>	A	2.5E-07	1.3E-09	9.0E-13
R <sub>S</sub>	Ω	4	4	4
N		1.04	1.04	1.04
T <sub>T</sub>	s	1E-11	1E-11	1E-11
C <sub>J0</sub>	pF	0.42	0.39	0.39
M		0.32	0.37	0.42
E <sub>G</sub>	eV	0.69	0.69	0.69
X <sub>TI</sub>		2	2	2
F <sub>C</sub>		0.5	0.5	0.5
B <sub>V</sub>	V	2	3	4
I <sub>BV</sub>	A	1E-05	1E-05	1E-05
V <sub>J</sub>	V	0.495	0.595	0.8

**100, 101, 102**



**103**



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

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