DATA SHEET

Chip On Board Mixer Quads

Features

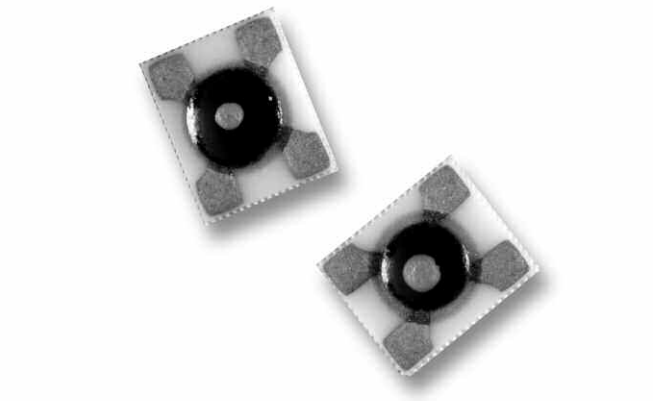
- High-volume automatic assembly
- For microwave MIC assembly and automated high-volume manufacturing
- Mechanically rugged design
- 100% DC tested
- Three barrier heights for customized mixer performance
- Available lead (Pb)-free, RoHS-compliant, and Green

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_F @ 1 mA (mV)		(Δ) V_F @ 1 mA[1] (mV)	C_J @ 0 V (pF)		(Δ) C_T @ 0 V[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
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

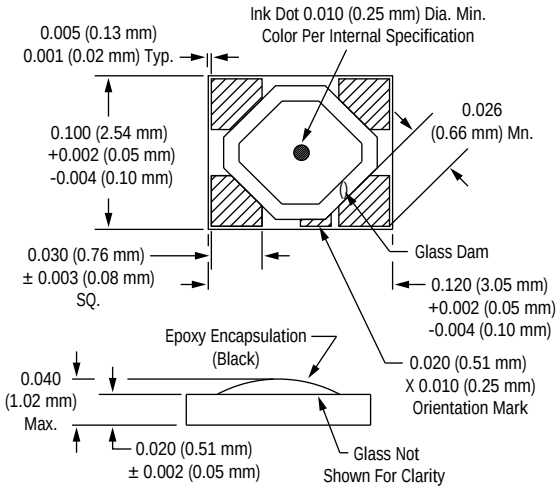
Part Number	Barrier	V_F @ 1 mA (mV)		(Δ) V_F @ 1 mA[1] (mV)	C_J @ 0 V (pF)		(Δ) C_T @ 0 V[2] (pF)	R_T @ 10 mA (Ω)	V_B @ 10 µA (V)	Outline Drawing
		Min.	Max.	Max.	Min.	Max.	Max.	Max.	Min.	
Bridge Quad (to 6 GHz)										
DMF3929-102	Low	200	260	15	0.3	0.5	0.07	8	2	102
DME3930-102	Medium	300	400	15	0.3	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.

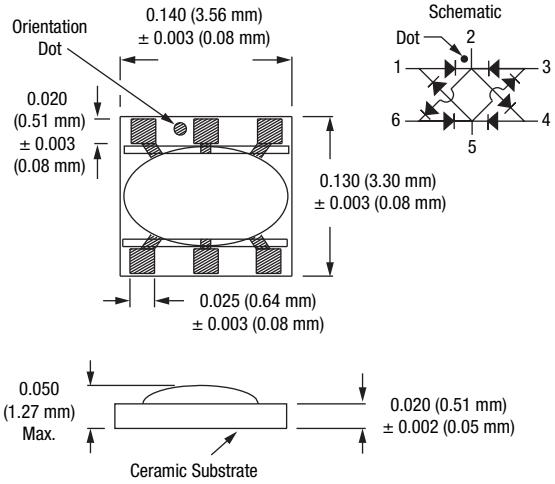
SPICE Model Parameters (Per Junction)

Parameter	Unit	DMF3926 DMF3929 DMF3945	DME3927 DME3930 DME3946	DMJ3928 DMJ3931 DMJ3947
IS	A	2.5E–07	1.3E–09	9.0E–13
R_S	Ω	4	4	4
N		1.04	1.04	1.04
TT	s	1E–11	1E–11	1E–11
C_{J0}	pF	0.42	0.39	0.39
M		0.32	0.37	0.42
E_G	eV	0.69	0.69	0.69
XTI		2	2	2
F_C		0.5	0.5	0.5
B_V	V	2	3	4
I_{BV}	A	1E–05	1E–05	1E–05
V_J	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.

Copyright © 2002, 2003, 2004, 2005, 2006, 2007, Skyworks Solutions, Inc. All Rights Reserved.

Information in this document is provided in connection with Skyworks Solutions, Inc. ("Skyworks") products or services. These materials, including the information contained herein, are provided by Skyworks as a service to its customers and may be used for informational purposes only by the customer. Skyworks assumes no responsibility for errors or omissions in these materials or the information contained herein. Skyworks may change its documentation, products, services, specifications or product descriptions at any time, without notice. Skyworks makes no commitment to update the materials or information and shall have no responsibility whatsoever for conflicts, incompatibilities, or other difficulties arising from any future changes.

No license, whether express, implied, by estoppel or otherwise, is granted to any intellectual property rights by this document. Skyworks assumes no liability for any materials, products or information provided hereunder, including the sale, distribution, reproduction or use of Skyworks products, information or materials, except as may be provided in Skyworks Terms and Conditions of Sale.

THE MATERIALS, PRODUCTS AND INFORMATION ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE, INCLUDING FITNESS FOR A PARTICULAR PURPOSE OR USE, MERCHANTABILITY, PERFORMANCE, QUALITY OR NON-INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHT; ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED. SKYWORKS DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. SKYWORKS SHALL NOT BE LIABLE FOR ANY DAMAGES, INCLUDING BUT NOT LIMITED TO ANY SPECIAL, INDIRECT, INCIDENTAL, STATUTORY, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS THAT MAY RESULT FROM THE USE OF THE MATERIALS OR INFORMATION, WHETHER OR NOT THE RECIPIENT OF MATERIALS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Skyworks products are not intended for use in medical, lifesaving or life-sustaining applications, or other equipment in which the failure of the Skyworks products could lead to personal injury, death, physical or environmental damage. Skyworks customers using or selling Skyworks products for use in such applications do so at their own risk and agree to fully indemnify Skyworks for any damages resulting from such improper use or sale.

Customers are responsible for their products and applications using Skyworks products, which may deviate from published specifications as a result of design defects, errors, or operation of products outside of published parameters or design specifications. Customers should include design and operating safeguards to minimize these and other risks. Skyworks assumes no liability for applications assistance, customer product design, or damage to any equipment resulting from the use of Skyworks products outside of stated published specifications or parameters.

Skyworks, the Skyworks symbol, and "Breakthrough Simplicity" are trademarks or registered trademarks of Skyworks Solutions, Inc., in the United States and other countries. Third-party brands and names are for identification purposes only, and are the property of their respective owners. Additional information, including relevant terms and conditions, posted at www.skyworksinc.com, are incorporated by reference.