

DATA SHEET

DMF3926-116, DME3927-116, DMJ3928-116: Surface Mount Hermetic Silicon Schottky Crossover Ring Quads

Applications

- Double-balanced mixers

Features

- Surface mount crossover ring quads
- Low, medium and high barrier devices
- Suitable for use up to 4 GHz
- Low parasitic impedance
- Miniature hermetic ceramic package
- Lead (Pb)-free, RoHS-compliant, and Green™, MSL-1 @ 260 °C per JEDEC J-STD-020
- ESD Class 0, Human Body Model

Description

This family of crossover ring quads comprised of silicon Schottky diodes is offered with one of three barrier heights. DMF3926-116 contains low barrier diodes, DME3927-116 contains medium barrier diodes and DMJ3928-116 contains high barrier diodes. Each of these parts is packaged in a surface mount, 1.7 x 2 x 1.1 mm hermetic ceramic package.

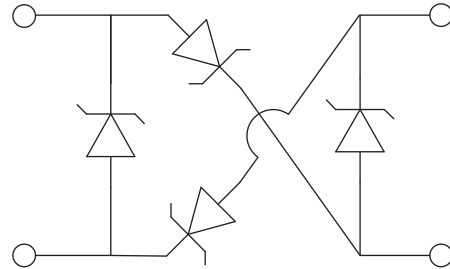
These ring quads are fabricated as single dice that contain all four junctions and the crossover connection, thereby inherently matching electrical characteristics including capacitance, forward voltage and series resistance.

This package meets fine and gross leak test requirements per MIL-STD-750. It is lead (Pb)-free and fully complies with current RoHS requirements. It also meets Skyworks definition of Green: it contains no halogens or antimony (Sb).

SPICE parameters are provided.

These ring quads can operate over the temperature range of -40 °C to +85 °C.

Functional Diagram



NEW Skyworks Green™ products are RoHS (Restriction of Hazardous Substances)-compliant, conform to the EIA/EICTA/JEITA Joint Industry Guide (JIG) Level A guidelines, are halogen free according to IEC-61249-2-21, and contain <1,000 ppm antimony trioxide in polymeric materials.



Electrical Specifications

T = 25 °C, per junction, unless otherwise noted

Part Number	Breakdown Voltage @ $I_R = 10 \mu A^1$ (V)	Total Capacitance @ $V_R = 0 V^2$ (pF)	Forward Voltage @ $I_F = 5 mA$ (mV)		Forward Voltage @ $I_F = 10 mA$ (mV)		Forward Voltage Difference per Pair @ $I_F = 5 mA$ (mV)	Forward Voltage Difference per Pair @ $I_F = 10 mA$ (mV)	Total Resistance @ $I_F = 5 mA$ (Ω)
	Min.	Max.	Min.	Max.	Min.	Max.	Max.	Max.	Max.
DMF3926-116	2	0.55	260	330			10	10	10
DME3927-116	3	0.55			435	520		10	12
DMJ3928-116	5	0.55			610	700		10	10

1. It is not possible to measure breakdown voltage on any junction in a ring quad.
2. In a ring quad the capacitance at 0 V bias measured across any single diode is 4/3 the actual diode capacitance.

Absolute Maximum Ratings

Characteristic	Value
Forward current—steady state	50 mA
Forward current—1 ms pulse	1 A
Dissipated power at 25 °C	250 mW
Operating temperature range	-40 °C to +150 °C
Storage temperature range	-65 °C to +200 °C
Junction temperature	150 °C

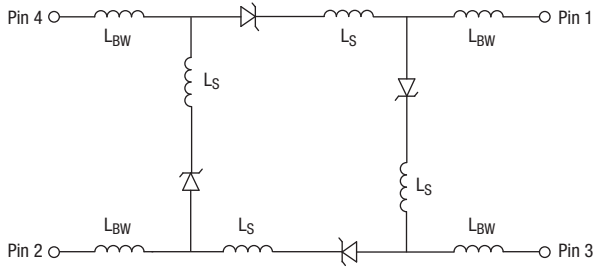
Performance is guaranteed only under the conditions listed in the specifications table and is not guaranteed under the full range(s) described by the Absolute Maximum Ratings. Exceeding any of the absolute maximum/minimum specifications may result in permanent damage to the device and will void the warranty.

CAUTION: Although these devices are designed to be robust, ESD (Electrostatic Discharge) can cause permanent damage. 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.

SPICE Model Parameters (Per Junction)

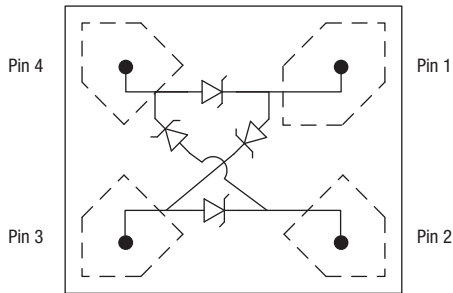
Parameter	Unit	DMF3926	DME3927	DMJ3928
I_S	A	2.5e-7	1.5e-9	9e-13
R_S	Ω	9	10	9
N		1.05	1.05	1.05
TT	s	1e-11	1e-11	1e-11
C_{JO}	pF	0.375	0.375	0.375
M		0.3	0.36	0.41
E_G	eV	0.69	0.69	0.69
XTI		2	2	2
F_C		0.5	0.5	0.5
B_V	V	2.5	4	6
I_{BV}	A	1e-5	1e-6	1e-6
V_J	V	0.495	0.595	0.75

Equivalent Circuit

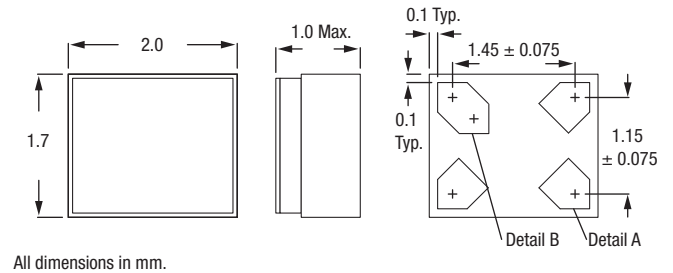


Parameter	Value	Unit
L_{BW}	0.3	nH
L_S	0.15	nH

Pin Out



Outline Drawing



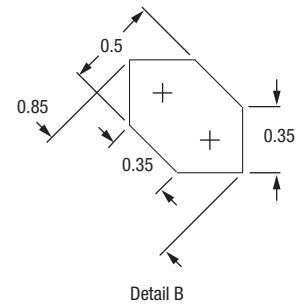
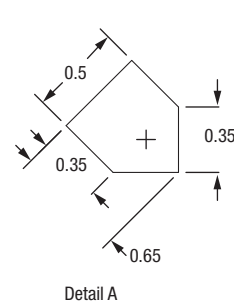
All dimensions in mm.

Recommended Solder Reflow Profiles

Refer to the [“Recommended Solder Reflow Profile”](#) Application Note.

Tape and Reel Information

Refer to the [“Discrete Devices and IC Switch/Attenuators Tape and Reel Package Orientation”](#) Application Note.



All dimensions in mm ± 0.075 .

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