

Features

- Designed for High Volume, Low Cost
- Closely Matched Junctions
- High Reliability and Mechanically Rugged
- Usable to X-Band
- Available in Wafer Form
- RoHS* Compliant

Applications

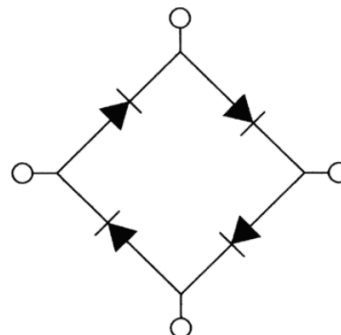
- X-Band Industrial & Commercial

Description

The MADS-011068-1440WR ring quad is a high performance silicon Schottky device offered in a low barrier height.

This ring quad is fabricated using monolithic silicon diode technology that features gold metallization and IC passivation for increased performance and reliability. The closely matched junctions minimize variation in capacitance, forward voltage, and series resistance between the four diodes which make up this ring quad.

Diode Schematic



Ordering Information³

Part Number	Package
MADS-011068-1440WR	Wafer Form

3. Reference Application Note M513 for reel size information.

Electrical Specifications¹: T_A = +25°C

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Recommended Frequency Range	—	GHz	—	—	10
Forward Voltage	5 mA	mV	260	—	330
Delta Forward Voltage	5 mA	Ω	—	—	12
Junction Capacitance	0 V, 1 MHz ²	pF	—	0.4	0.6
Delta Junction Capacitance	0 V	pF	—	—	0.05
Rd Slope Resistance	(V _{F1} - V _{F2}) / (5.5 mA - 4.5 mA)	Ω	—	—	10

1. Matching criteria between devices in the quad.

2. C_j is measured between non-adjacent bond pads.

* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

Silicon Schottky Ring Quad Chip

Low Barrier



MADS-011068-1440WR

Rev. V1

Handling Procedures

Epoxy die attach is recommended. To obtain a consistently strong attachment when using epoxy, use the vendor recommended cleanliness, epoxy pot life and general curing instructions. The cleanliness, time, temperature and tooling are essential for good epoxy attachment.

All electrical connections to the quad must be made through the four bond pads on the top side of the chip. The bond pads are junction isolated from the backside of the chip. Thermocompression bonding using 0.0007" to 0.001" diameter gold wire is recommended. The leads should be kept as short as possible.

The following precautions should be observed to avoid damaging these chips:

Cleanliness:

The chips should be handled in a clean environment. Do not attempt to clean die after installation.

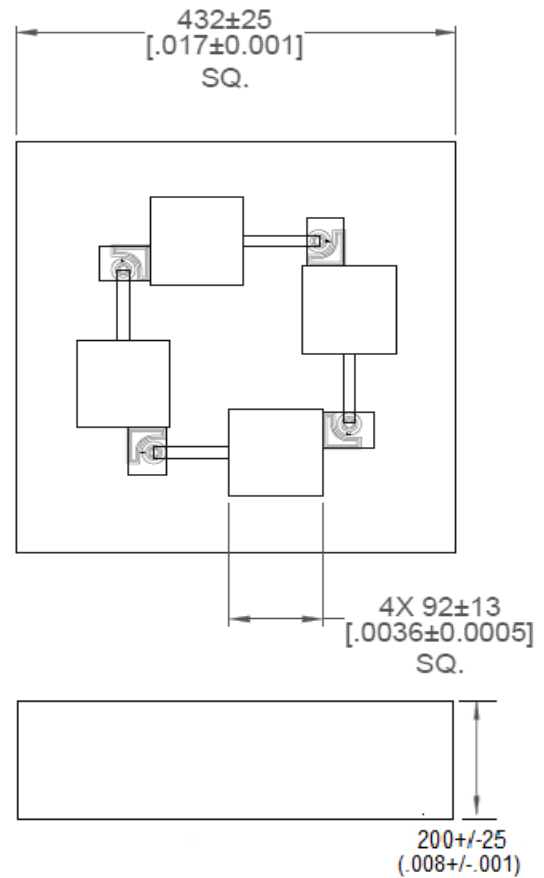
Static Sensitivity:

Schottky barrier diodes are ESD sensitive and can be damaged by static electricity. Proper ESD techniques should be used when handling these devices.

General Handling:

The protective polymer coating on the active areas of these die provides scratch Protection. Die can be handled with tweezers or vacuum pickups and are suitable for use with automatic pick-and-place equipment.

Chip Outline (µm/in.)



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