

### Features

- For Detector and Mixer Applications
- Vertical Offset Contact
- Low Capacitance Package (0.09 pF)
- Available as Bondable Chips
- Priced for Commercial Applications

### Specifications @ 25°C

- $V_F$  (1 mA): 0.39 V Max.
- $V_B$  (10  $\mu$ A): 3 V Min.
- $I_R$  (1 V): 100 nA Max.
- $R_S$  (1 mA): 8  $\Omega$  Typ.
- $C_T$  (0 V, 1 MHz): 0.24 pF Max., 0.20 pF Typ.

### Maximum Ratings

Incident Power	+20 dBm @ 25°C
Reverse Voltage	3 V
Forward Current	10 mA @ 25°C
Power Dissipation	50 mW @ 25°C
Operating Temperature	-65°C to +150°C
Storage Temperature	-65°C to +150°C

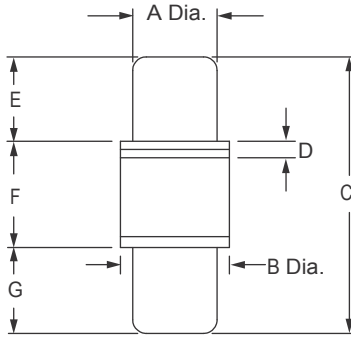


### Description

The MS8520-48 is low barrier, N-type, silicon Schottky diode designed for applications in microwave mixers and detectors at frequencies from below 100 MHz to beyond 40 GHz.

These Schottky diodes are packaged in the newly developed ultra-low capacitance M48 package that has shown improved sensitivity in Doppler Transceiver mixer/detector mounts at 24 GHz.

Microsemi's vertical offset chip bond pad design allows rotational symmetry in a waveguide mount and rugged bonding to the top contact without damage to the junction. MSC's semiconductor process also results in a low 1/F noise device with low specified  $R_S$  and  $C_J$  values.

**M48**

**Spice Model Parameters**

$I_S$	$R_S$	N	$C_{J0}$	$C_P$	M	EG	$V_J$	BV	IBV
A	$\Omega$		pF	pF		eV	V	V	A
1E-8	8	1.07	0.11	0.09	0.50	0.69	0.5	3	1E-5

**Ordering Information**

The MS8520-48 diode is also available as a bondable chip, MS8520-P10, and in a variety of package types. Contact factory for availability.

DIM	INCHES		MM	
	MIN.	MAX.	MIN.	MAX.
A	0.059	0.064	1.499	1.626
B	0.076	0.084	1.930	2.134
C	0.190	0.210	4.826	5.334
D	0.007	0.015	0.178	0.381
E	0.059	0.065	1.499	1.651
F	0.069	0.087	1.753	2.210
G	0.059	0.065	1.499	1.651

$C_p = 0.09$  pF.  
 $L_p = 0.50$  nH.

**IMPORTANT:** For the most current data, consult our website: [www.MICROSEMI.com](http://www.MICROSEMI.com)  
 Specifications are subject to change. Consult factory for the latest information.



These devices are ESD sensitive and must be handled using ESD precautions.

- The MS8250 Series of products are supplied with a RoHS compliant Gold finish.
- Other package styles are available on request.