Description
The HSCH-9401 is a discrete Schottky barrier diode fabricated with the Schottky Barrier Integrated Diode (SBID) process.

Applications
The HSCH-9401 is a general purpose millimeter wave diode that can be used as a detector or as a mixer in applications such as digital radio, LMDS, or video distribution.

Assembly Techniques
Diodes are ESD sensitive. ESD preventive measures must be employed in all aspects of storage, handling, and assembly.

Diode ESD precautions, handling considerations, die attach and bonding methods are critical factors in successful diode performance and reliability.

Features
- \( f_c > 800 \text{ GHz} \)
- Low junction capacitance – typically 35 fF
- Low series resistance – typically 6Ω
- High cut-off frequency
- Polyimide scratch protection
- Durable construction
- Large bond pads suitable for automated wire bonding or flip-chip assembly

Specifications
- \( V_f (1 \text{ mA}) : 630 – 800 \text{ mV} \)
- \( V_f (10 \text{ mA}) : 730 – 980 \text{ mV} \)
- \( R_s (5 \text{ mA}) : < 20 \Omega \)
- \( B_V (-10 \mu A) : > 6 \text{ V} \)
- \( I_r (-2 \text{ V}) : < 200 \text{ nA} \)
- \( C_i : < 0.045 \text{ pF} \)

Chip Size: 610 x 255 μm (24 x 10 mils)
Chip Size Tolerance: ±10 μm (20.4 mils)
Chip Thickness: 100 μm (4 mils)
Bond Pad Sizes: 175 x 175 μm (6.9 x 6.9 mils)

Agilent application note #54, “GaAs MMIC ESD, Die Attach and Bonding Guidelines” provides basic information on these subjects.

Additional References
PN #1, “HSCH-9401 Diode Model,” and PN # 16, “HSCH-9401 Detector Sensitivity Measurements.”
This data sheet contains a variety of typical and guaranteed performance data. The information supplied should not be interpreted as a complete list of circuit specifications. In this data sheet the term typical refers to the 50th percentile performance. For additional information contact your local Agilent sales representative.