

Pressure Contact Schottky Barrier Switching Diodes

ALPHA IND/ SEMICONDUCTOR 48E D ■ 0585443 0001159 T16 ■ ALP

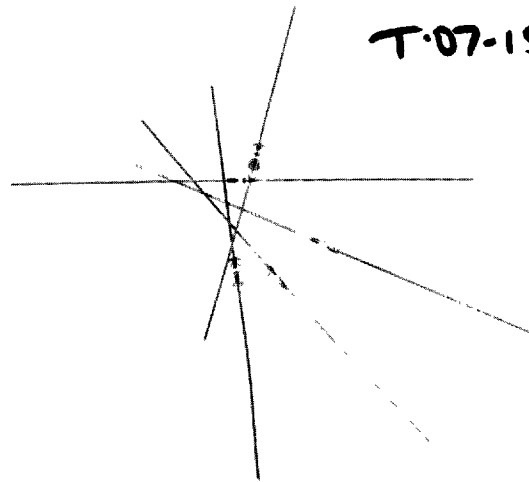
T-07-15

Features

- Fast Switching Time
- High Breakdown Voltage
- Hermetically Sealed

Types

- DSN6566
- DSH4787



Description

The Alpha DSN6566 and DSH4787 are high voltage Schottky barrier diodes for applications involving switching times in the picosecond range. The devices are packaged in the miniature glass axial lead package.

These Schottky barrier diodes are made by deposition of a suitable metal on epitaxial silicon substrate to form the junction. The process and choice of materials result in low series resistance along with a narrow spread of capacitance values for close parameter control. Since the process results in a majority carrier device, the diodes exhibit extremely fast switching speed characteristics.

The devices are designed primarily for high speed switching, clamping, pulse shaping, and other applications where switching times in the picosecond range are desired. These devices are also well suited for low frequency mixing (up to 2.0 GHz). Application information with more detail is available on request from Alpha Industries.

Maximum Ratings

	DSN Series	DSH Series
Operating Temperature	-65°C to +200°C	-65°C to +150°C
Storage Temperature	-65°C to +200°C	-65°C to +150°C
Power Dissipation DC	250 mW ⁽¹⁾	150 mW ⁽²⁾

1. Derate linearly above 25°C at 1.43 mW/°C
2. Derate linearly above 25°C at 1.2 mW/°C

Electrical Characteristics

Type Number	Breakdown Voltage Vdc (Min.)		Forward Voltage Vdc (Max.)						Reverse Current nA (Max.)					Capacitance pF (Max.)
	V _b @10μ	V _b @100μ	V _F @1mA	V _F @10mA	V _F @15mA	V _F @20mA	V _F @35mA	V _F @50mA	I _r @1V	I _r @5V	I _r @8V	I _r @15V	I _r @50V	C _T @V _r =0V @f=1.0MHz
DSN6566-050	70	--	0.55	--	1.0	--	--	--	--	--	--	--	200	2.0
DSH4787-040	30	--	0.40	--	--	--	--	1.0	--	--	--	300	--	1.0
DSH4787-030	20	--	0.40	--	--	--	1.0	--	--	--	--	500	--	1.0
DSH4787-020	15	--	0.41	--	--	1.0	--	--	--	100	--	--	--	1.2
DSH4787-015	10	--	0.40	--	--	1.0	--	--	--	100	--	--	--	1.2
DSH4787-010	--	5	0.34	0.45	--	--	--	--	100	--	--	--	--	1.0

Note:

Upon request, diodes can be supplied matched.

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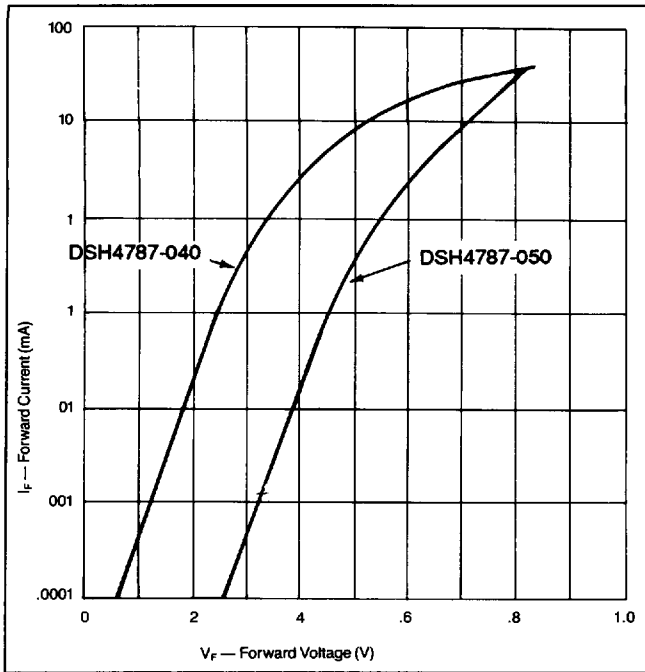


Figure 1. Typical Forward D.C. Characteristic Curves (DSH4787-040 and DSN6566-050)

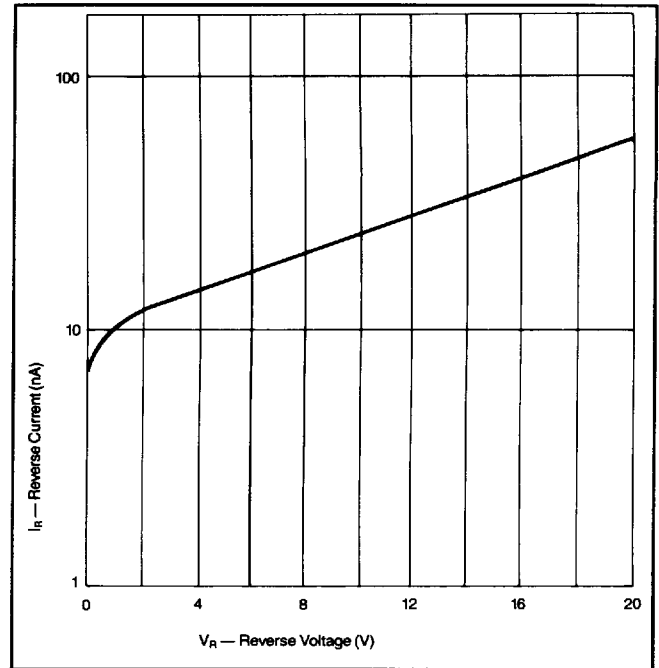


Figure 3. Typical Reverse Current vs. Reverse Voltage at $T_A = 25^\circ\text{C}$ (DSH4787-040)

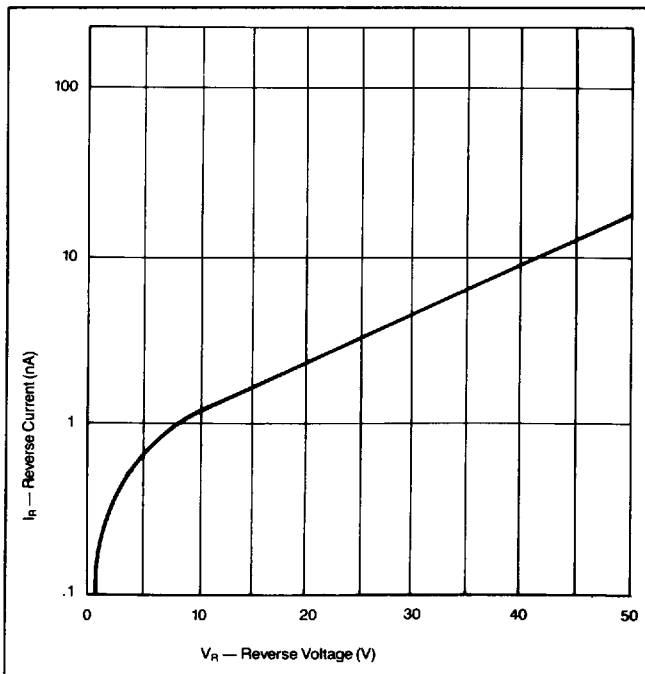


Figure 2. Typical Reverse Current vs. Reverse Voltage at $T_A = 25^\circ\text{C}$ (DSN6566-050)