

To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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Notice

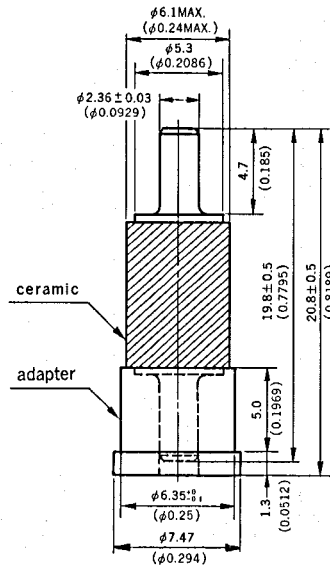
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X BAND DETECTOR SILICON EPITAXIAL SCHOTTKY BARRIER DIODE

PACKAGE DIMENSIONS in millimeters (inches)



The 1SS69 is silicon epitaxial schottky barrier diode, especially designed for X band detector and doppler mixer.

APPLICATIONS

- Doppler rader
- Intrusion alarm system
- Braking system
- Motion detecting system

FEATURES

- High sensitivity in zero IF system
- Low I/f noise in the 1 to 10 kHz band

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

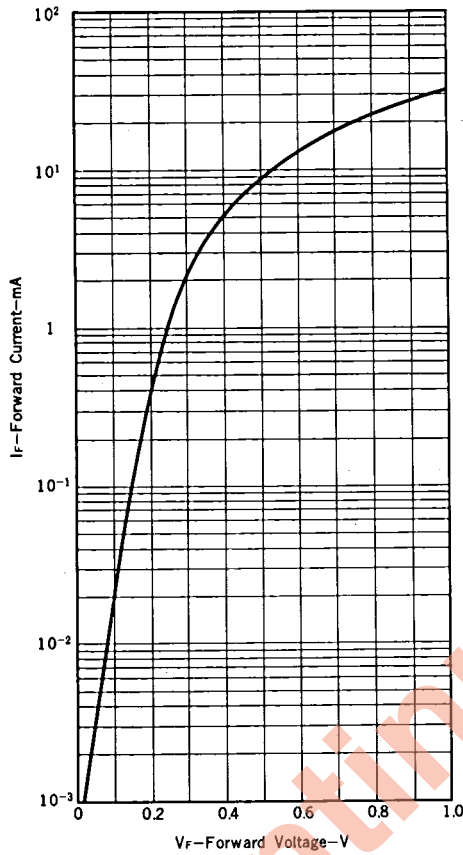
Reverse Voltage	V _R	3.0	V
Peak Reverse Voltage	V _{RM}	4.0	V
Forward Current	I _F	30	mA
Peak Forward Current	I _{FM}	50	mA
Junction Temperature	T _j	+150	°C
Storage Temperature	T _{stg}	-65 to +150	°C
Reverse Burnout	B _o	1.0	erg
CW Power Dissipation	P _{cw}	100	mW

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

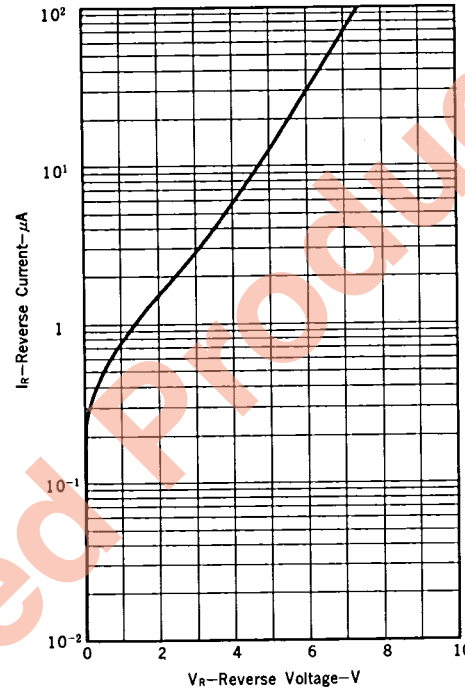
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Reverse Voltage	V _R	3.0			V	I _R =100μA
Reverse Current	I _R			10	μA	V _R =1.0V
Forward Current	I _F	3.0	9.0		mA	V _F =0.5V
Terminal Capacitance	C _t		0.37		pF	f _i =1.0MHz, V _R =0.2V
Voltage Sensitivity	γ		2.5		mV/μW	f _i =9375MHz, P _i =-30dBm, R _L =4.5kΩ, I _b =0
Tangential Sensitivity	TSS		55		-dBm	f _i =9375MHz, P _i =-30dBm, f _v =120Hz, BW=2MHz, R _L =4.5kΩ, I _b =0
Noise Temperature Ratio	N _r		7.0		dB	f _i =9375MHz, P _i =-30dBm, f _v =120Hz, R _L =4.5kΩ, I _b =0
V.S.W.R.	σ		1.2			f _i =9375MHz, P _i =1.0mW, R _L =100Ω
Video Impedance	R _V		30		kΩ	f _i =9375MHz, P _i =-30dBm, R _{L1} =1kΩ, R _{L2} =2kΩ
Corner Frequency	f _k		1.0		kHz	f _i =9375MHz, P _i =-30dBm, R _L =4.5kΩ, I _b =0

TYPICAL CHARACTERISTICS (Ta = 25°C)

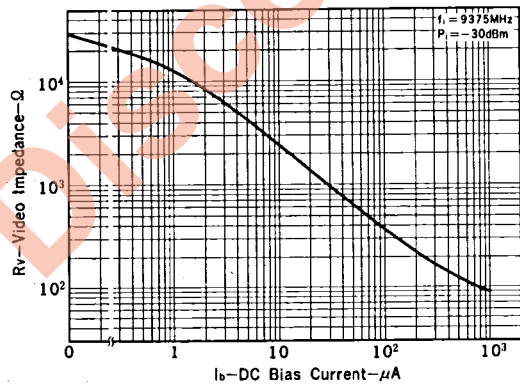
FORWARD CURRENT vs. FORWARD VOLTAGE



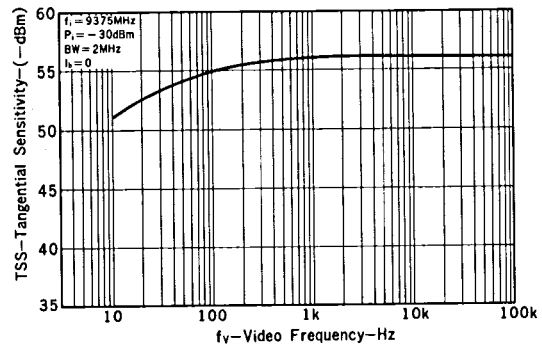
REVERSE CURRENT vs. REVERSE VOLTAGE



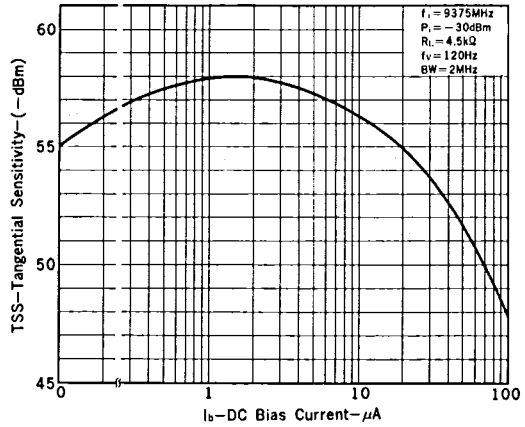
VIDEO IMPEDANCE vs. DC BIAS CURRENT



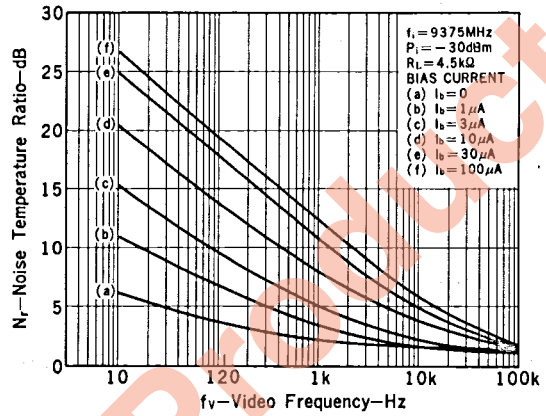
TANGENTIAL SENSITIVITY vs. VIDEO FREQUENCY



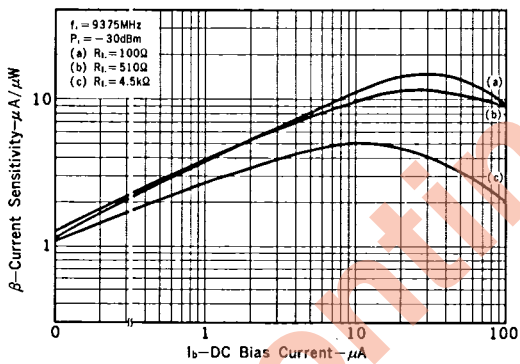
TANGENTIAL SENSITIVITY vs. DC BIAS CURRENT



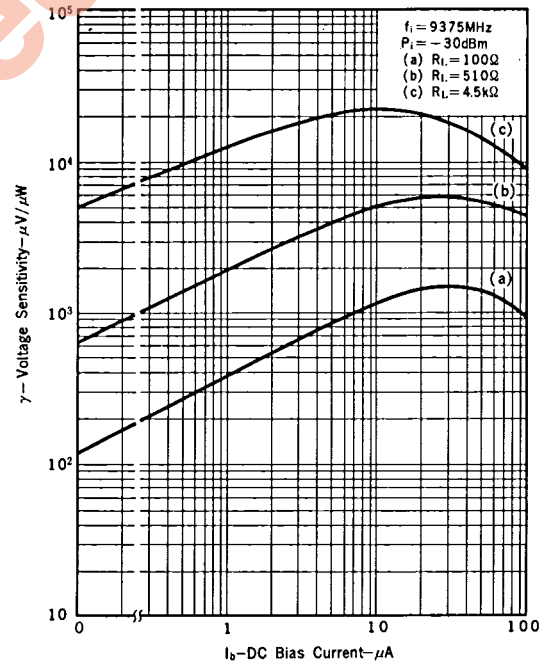
NOISE TEMPERATURE RATIO vs. VIDEO FREQUENCY



CURRENT SENSITIVITY vs. DC BIAS CURRENT



VOLTAGE SENSITIVITY vs. DC BIAS CURRENT



Discarded Patent

Some cautions on the handling of schottky barrier diodes are given below.

1. Diodes are delivered in a packing of aluminum foil or in conductive sponge to protect against strong electric field and static charge.

When transporting or storing the diodes, handle them under the same condition as they were on the delivery.

Vinyl or polyethylene film bag is strictly prohibited.

2. On the acceptance test or the like, if the DC bias which is obtained from AC line voltage source through a stabilized power supply is applied to test DC characteristics and capacities, a surge voltage is present at the DC output of the stabilized power supply through the AC line.

This surge voltage is produced by every ON-OFF operation of other equipments connected to the same AC line and may cause damage of the diode.

3. When soldering, check no power leak is present at the tip of the soldering iron. If the soldering iron is grounded or disconnected from the receptacle at just soldering, the diode is perfectly free from an electric shock due to the AC line surge.

4. When connecting a long coaxial cable to the output terminal of the diode for a remote control, if the output terminal of the coaxial cable is open circuited, the diode may be damaged.

5. If the diode is handled with tweezers, the diode may be damaged by a static charge of the handler.

The tweezers must be grounded.

6. If the handler uses gloves, chemical fiber such as nylon is strictly prohibited. Use cotton gloves.