To our customers,

## Old Company Name in Catalogs and Other Documents

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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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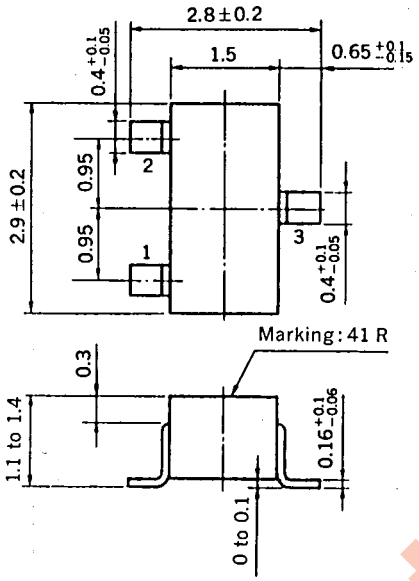
RENESAS

# SCHOTTKY BARRIER DIODE
# ND411G-1R

## UHF SINGLE BALANCED MIXER
## SILICON EPITAXIAL SCHOTTKY BARRIER DIODE PAIR



**PACKAGE DIMENSIONS**
in millimeters




### DESCRIPTION

The ND411G-1R is schottky barrier diode pair, especially designed for use in single balanced mixers, phase detectors, AM modulators, and pulse modulators.

### FEATURES

- Monolithic array
- Diode pair configuration
- Wideband operation
- Small size package
- Low cost

### ABSOLUTE MAXIMUM RATINGS ($T_a$ = 25 °C)

| | | | |
|---|---|---|---|
| Reverse Voltage | $V_R$ | 5.0 | V |
| Forward Current | $I_F$ | 30 | mA |
| DC Power Dissipation | $P_D$ | 150 | mW |
| Junction Temperature | $T_j$ | 125 | °C |
| Storage Temperature | $T_{stg}$ | −55 to +125 | °C |
| Reverse Burnout* | $B_O$ | 1.0 | erg |

**Note** *: Capacitor charge method, C (charge) = 25 pF

### ELECTRICAL CHARACTERISTICS ($T_a$ = 25 °C)

| CHARACTERISTIC | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS |
|---|---|---|---|---|---|---|
| Forward Current | $I_F$ | 30 | | | mA | $V_R$ = 0.5 V |
| Forward Voltage | $V_F$ | 0.17 | | 0.23 | V | $I_F$ = 1.0 mA |
| Delta Forward Voltage | $\Delta V_F$*1 | | | 10 | mV | $I_F$ = 1.0 mA |
| Reverse Current | $I_R$ | | | 25 | μA | $V_R$ = 0.5 V |
| Terminal Capacitance | $C_t$*2 | | | 1.6 | pF | $V_R$ = 0.2 V, f = 1 MHz |
| Delta Terminal Capacitance | $\Delta C_t$*1 | | | 0.3 | pF | $V_R$ = 0.2 V, f = 1 MHz |

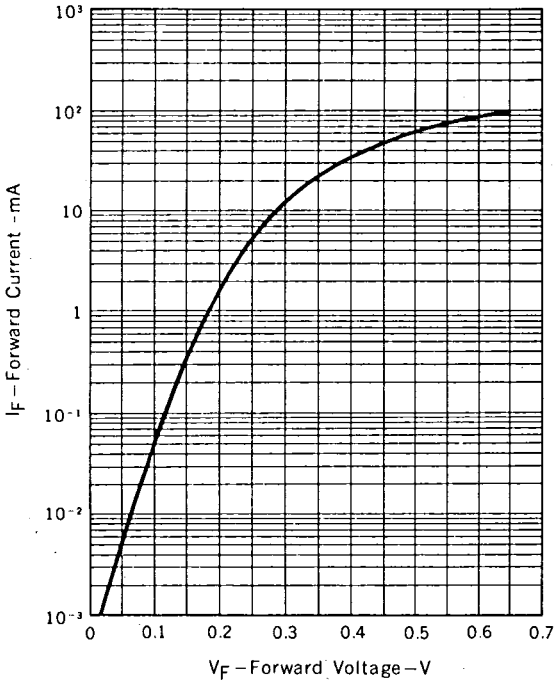
**NOTE** 1: Difference of $C_t$, $V_F$
2: Measurement terminal ②−③, ①−③

### PRECAUTION

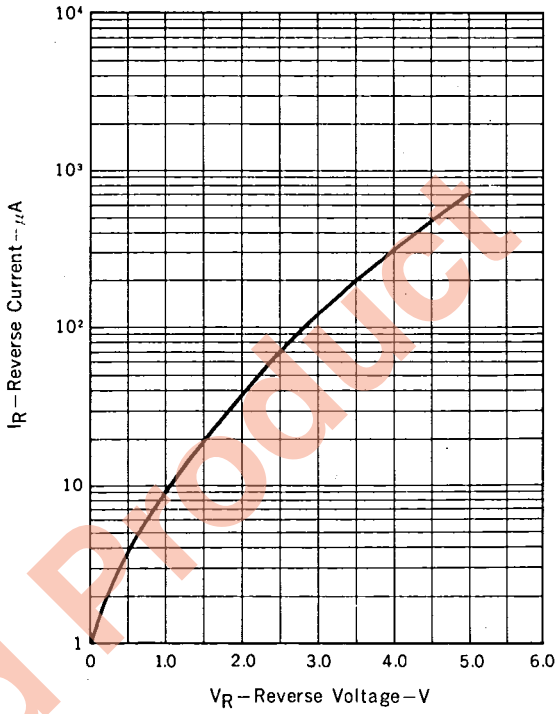
Avoid high static voltages or electric fields so that this device would not suffer from any damage due to those voltages or fields.

## TYPICAL CHARACTERISTICS ($T_a$ = 25 °C)

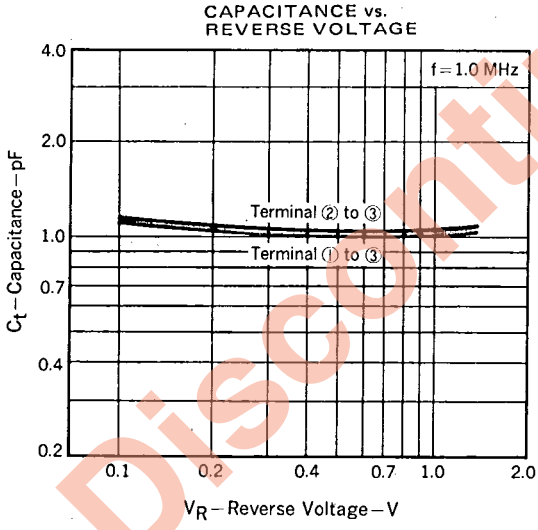
FORWARD CURRENT vs.
FORWARD VOLTAGE



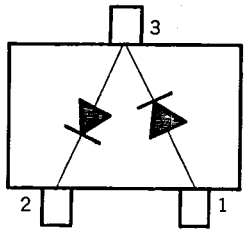

REVERSE CURRENT vs.
REVERSE VOLTAGE




CAPACITANCE vs.
REVERSE VOLTAGE




PIN CONNECTIONS



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