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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DATA SHEET

RENESAS

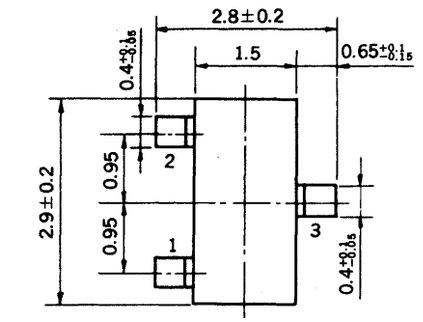
SILICON SWITCHING DIODE

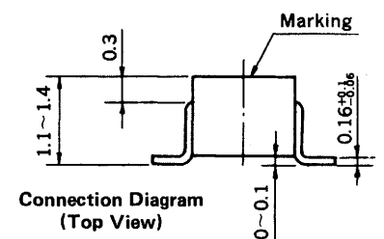
Phase-out/Discontinued

1SS123

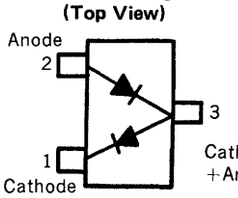
HIGH SPEED SWITCHING
SILICON EPITAXIAL DOUBLE DIODES : SERIES CONNECTED
MINI MOLD

PACKAGE DIMENSIONS
in millimeters





Connection Diagram (Top View)



Marking : A7

FEATURES

- Low capacitance: C_t = 4.0 pF MAX.
- High speed switching: t_{rr} = 9.0 ns MAX.
- Wide applications including switching, limitter, clipper.
- Double diode configuration assures economical use.

ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Currents (T_a = 25 °C)

Peak Reverse Voltage	V_{RM}	70	V
DC Reverse Voltage	V_R	70	V
Peak Forward Current	I_{FM}	200	mA
Average Rectified Current	I_O	100	mA
DC Forward Current	I_F	100	mA

Maximum Temperatures

Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	−55 to +150	°C

Thermal Resistance

Junction to Ambient*	$R_{th(j-a)}$	1.0	°C/mW
Junction to Ambient	$R_{th(j-a)}$	0.67	°C/mW

* Both diodes loaded simultaneously.

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Forward Voltage	V_{F1}		600	715	mV	I_F = 1.0 mA
	V_{F2}		750	855	mV	I_F = 10 mA
	V_{F3}		850	1100	mV	I_F = 50 mA
	V_{F4}		900	1300	mV	I_F = 100 mA
Reverse Current	I_R			1.0	μA	V_R = 70 V
Capacitance	C_t		2.5	4.0	pF	V_R = 0, f = 1.0 MHz
Reverse Recovery Time	t_{rr}			9.0	ns	I_F = 10 mA, V_R = 1 V, R_L = 100 Ω See test circuit.
Forward Recovery Voltage	V_{fr}			1.75	V	I_F = 10 mA See Test Circuit.

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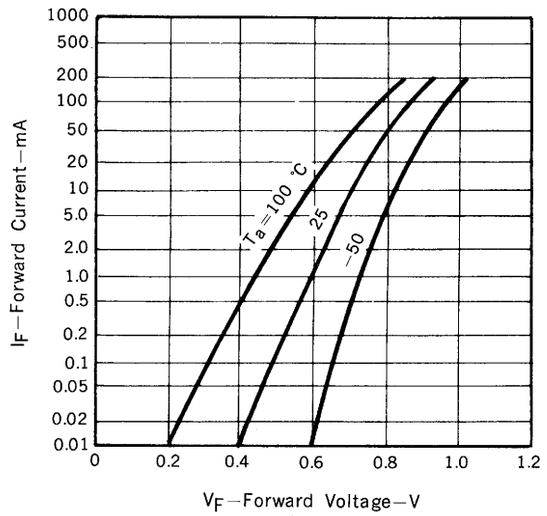
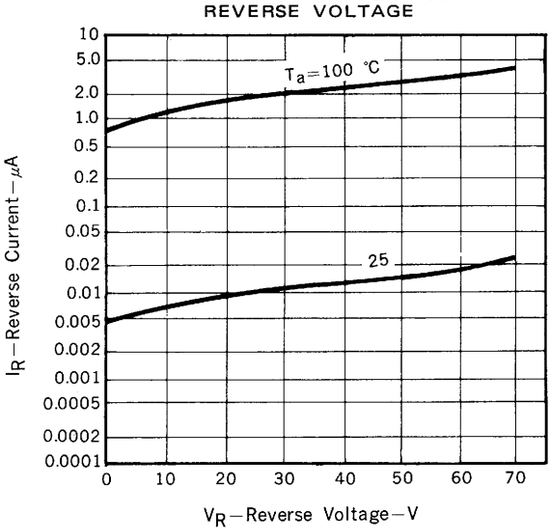
TYPICAL CHARACTERISTICS (T_a = 25 °C)

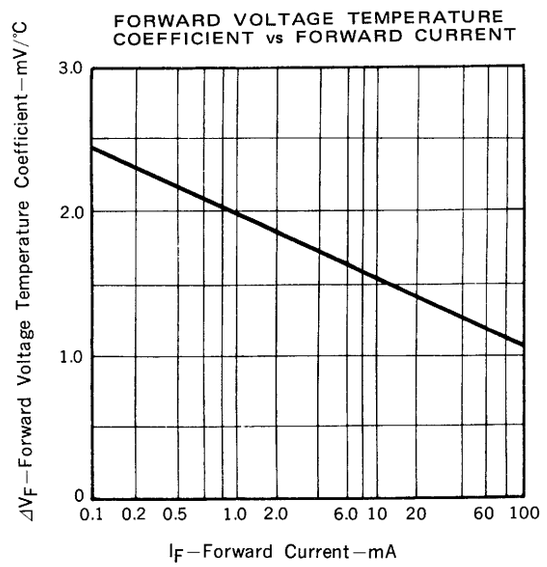
FORWARD CURRENT vs.
FORWARD VOLTAGE



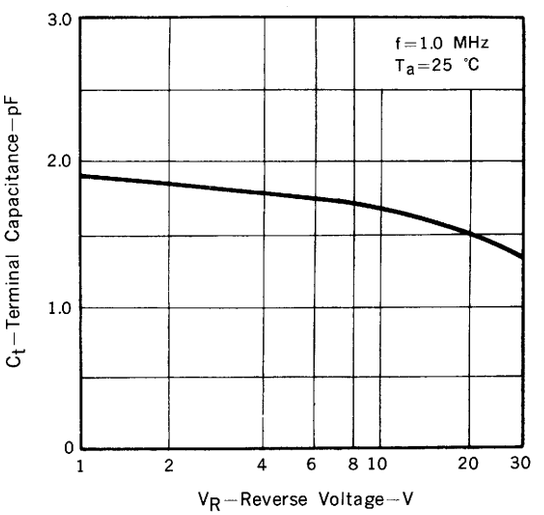
REVERSE CURRENT vs.
REVERSE VOLTAGE



FORWARD VOLTAGE TEMPERATURE
COEFFICIENT vs FORWARD CURRENT

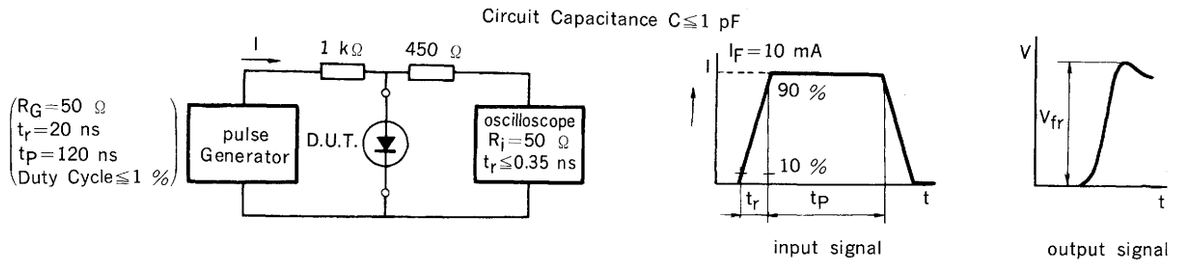


TERMINAL CAPACITANCE vs.
REVERSE VOLTAGE



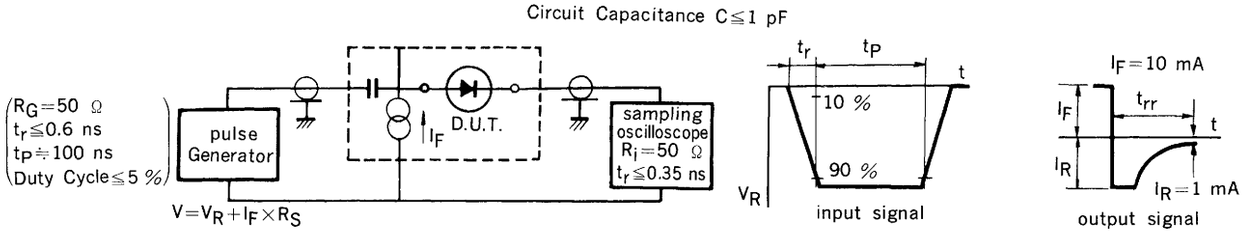
SWITCHING CHARACTERISTICS TEST CIRCUIT

Forward recovery voltage : V_{fr}



Test circuit　　Wave forms

Reverse recovery time : t_{rr}



Test circuit　　Wave forms

I_F = 10 mA, V_R = 1.0 V

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