

To our customers,

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## Old Company Name in Catalogs and Other Documents

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

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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Not recommended  
for new design

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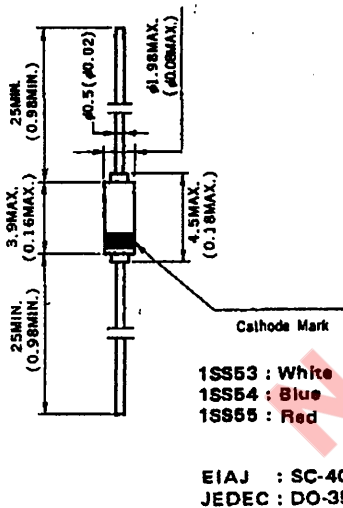
# 1SS53, 1SS54, 1SS55

## GENERAL PURPOSE SILICON EPITAXIAL PLANAR DIODES

### DESCRIPTION

The 1SS53, 1SS54, and 1SS55 are silicon epitaxial planar diodes designed for general purpose applications.

### PACKAGE DIMENSIONS in millimeters (inches)



### FEATURES

- Miniature package
- High power dissipation
- Low leakage
- Low price

### ABSOLUTE MAXIMUM RATINGS

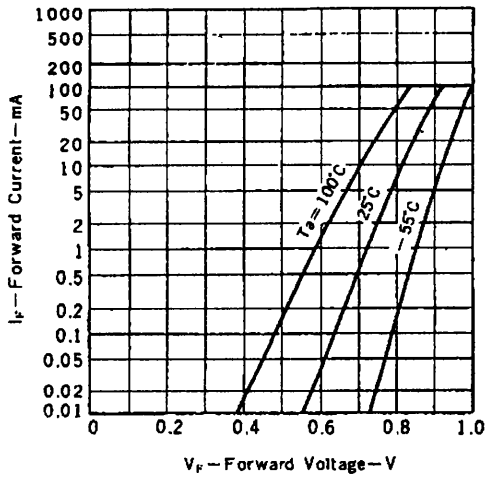
	1SS53	1SS54	1SS55		
Maximum Voltages and Currents ( $T_B = 25^\circ\text{C}$ )					
Peak Reverse Voltage	$V_{RM}$	35	75	100	V
Reverse Voltage	$V_R$	30	50	75	V
Peak Forward Surge Current (1 $\mu\text{s}$ )	$I_F$ (surge)		2000		mA
Peak Forward Current	$I_{FM}$		300		mA
Average Rectified Current	$I_O$		100		mA
Maximum Power Dissipation ( $T_B = 25^\circ\text{C}$ )					
Power Dissipation	P		500		mW
Maximum Temperatures					
Junction Temperature	$T_j$		200		$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-65 to +200		$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS ( $T_B = 25^\circ\text{C}$ )

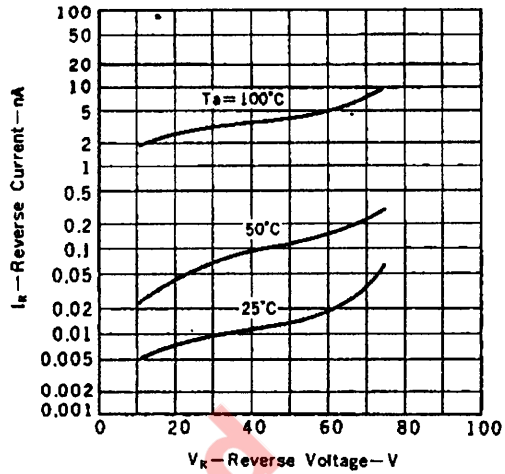
CHARACTERISTIC	SYMBOL	1SS53			1SS54			1SS55			UNIT	TEST CONDITIONS
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Forward Voltage	$V_F$		0.7	0.8		0.7	0.8		0.7	0.8	V	$I_F = 1.0\text{ mA}$
	$V_F$		0.85	1.0		0.85	1.0		0.85	1.0	V	$I_F = 30\text{ mA}$
Reverse Current	$I_R$			0.1							$\mu\text{A}$	$V_R = 30\text{ V}$
	$I_R$						0.1				$\mu\text{A}$	$V_R = 50\text{ V}$
	$I_R$								0.1		$\mu\text{A}$	$V_R = 75\text{ V}$
Terminal Capacitance	$C_t$			6.0			5.0			4.0	pF	$V_R = 0, f = 1.0\text{ MHz}$
Reverse Recovery Time	$t_{rr}$		20	100		20	100		20	100	ns	$I_F = 10\text{ mA}, V_R = 6.0\text{ V}, R_L = 100\Omega$

TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

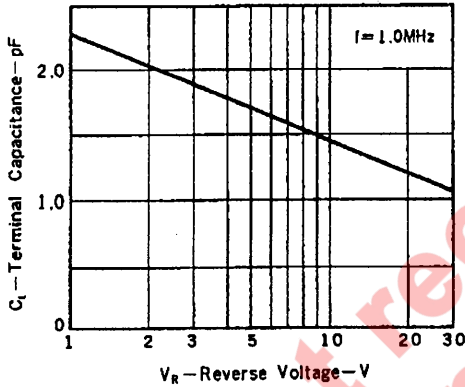
FORWARD CURRENT vs. FORWARD VOLTAGE



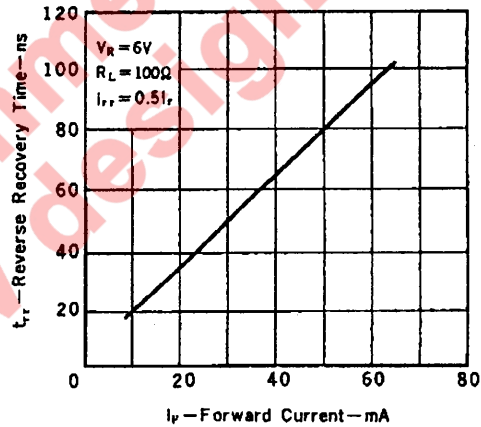
REVERSE CURRENT vs. REVERSE VOLTAGE (1SS55)



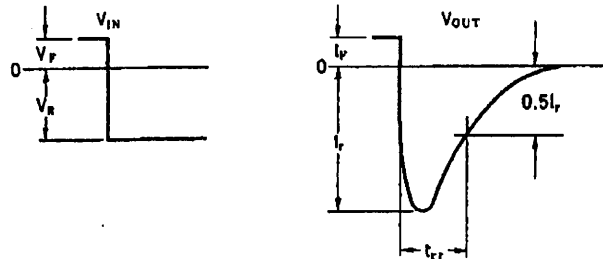
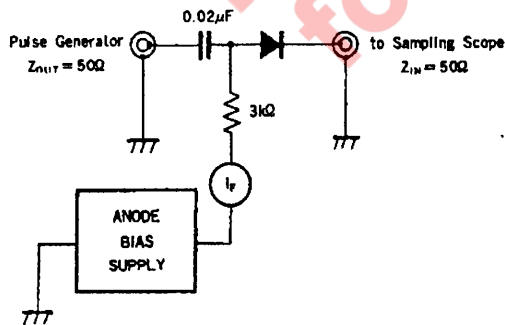
TERMINAL CAPACITANCE vs. REVERSE VOLTAGE



REVERSE RECOVERY TIME vs. FORWARD CURRENT



$t_{rr}$  REVERSE RECOVERY TIME TEST CIRCUIT



Test Conditions :  $I_F = 10\text{ mA}$ ,  $V_R = 6.0\text{ V}$ ,  $R_L = 100\Omega$

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