

SILICON SWITCHING DIODES

1S953, 1S954, 1S955

DESCRIPTION — The 1S953, 1S954 and 1S955 are silicon epitaxial planar diodes designed for high speed switching applications.

- FEATURES**
- Miniature Package.
 - High Power Dissipation.
 - Low Capacitance.
 - Fast Recovery Time.
 - Low Leakage.
 - High Conductance.

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

Junction Temperature T_j 200 °C

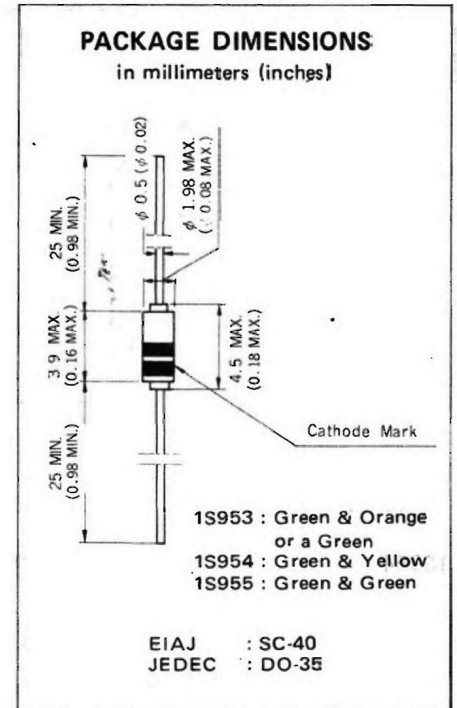
Storage Temperature T_{stg} -65 to +200 °C

Maximum Power Dissipation ($T_a=25^\circ\text{C}$)

Power Dissipation P_T 500 mW

Maximum Voltages and Currents ($T_a=25^\circ\text{C}$)

		1S953	1S954	1S955	
Peak Reverse Voltage	V_{RM}	35	75	100	V
Reverse Volstage	V_R	30	50	75	V
Peak Forward Surge Current (1 μs)	$I_{F(surge)}$	2 000	4 000	4 000	mA
Peak Forward Current	I_{FM}	300	600	600	mA
Average Rectified Current	I_O	100	200	200	mA



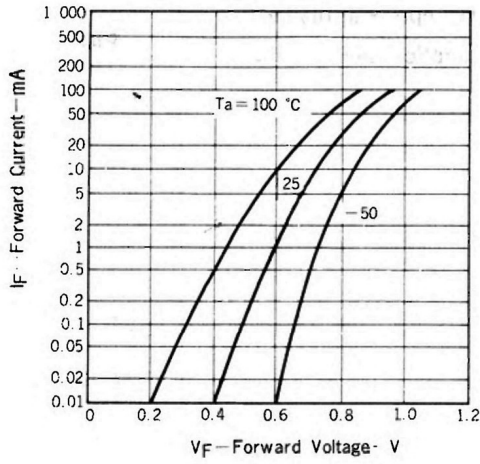
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

SYMBOL	CHARACTERISTIC	1S953			1S954			1S955			UNIT	TEST CONDITIONS
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
V_F	Forward Voltage	0.8	1.0							V	$I_F=30\text{ mA}$	
V_F	Forward Voltage				0.9	1.0				V	$I_F=100\text{ mA}$	
V_F	Forward Voltage						0.9	1.0		V	$I_F=150\text{ mA}$	
I_R	Reverse Current	0.01	0.1							μA	$V_R=30\text{ V}$	
I_R	Reverse Current				0.015	0.1				μA	$V_R=50\text{ V}$	
I_R	Reverse Current						0.03	0.1		μA	$V_R=75\text{ V}$	
C_t	Terminal Capacitance	2.0	4.0		2.0	3.5	2.0	3.0		pF	$V_R=0, f=1.0\text{ MHz}$	
t_{rr}	Reverse Recovery Time	2.0	3.0		2.0	3.0	2.0	3.0		ns	$I_F=10\text{ mA}, V_R=6.0\text{ V}$ $R_L=100\ \Omega$	

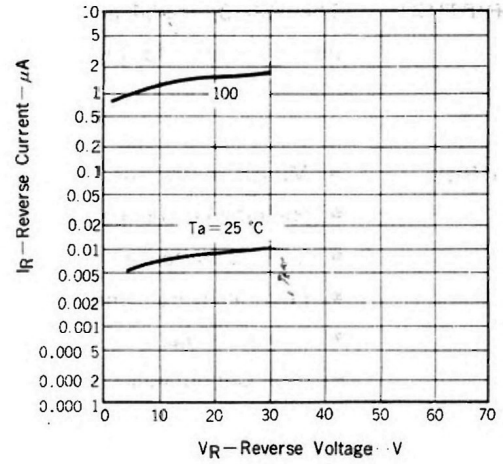
TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

1S953

FORWARD CURRENT vs. FORWARD VOLTAGE

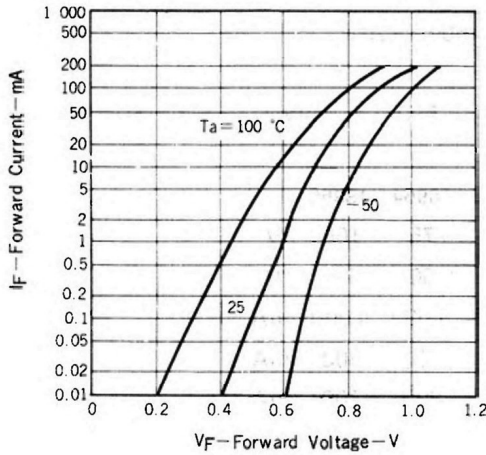


REVERSE CURRENT vs. REVERSE VOLTAGE

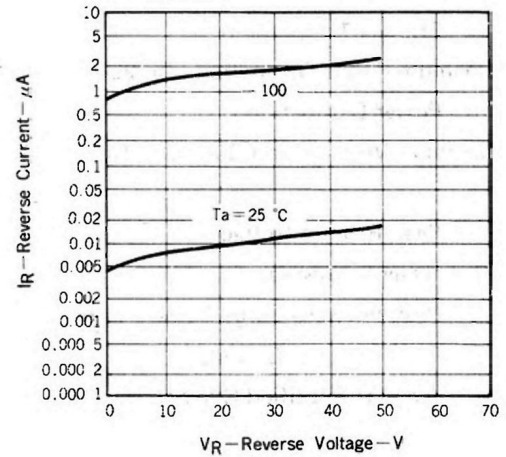


1S954

FORWARD CURRENT vs. FORWARD VOLTAGE

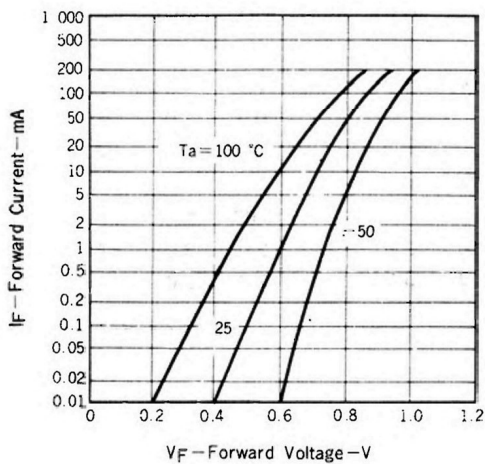


REVERSE CURRENT vs. REVERSE VOLTAGE

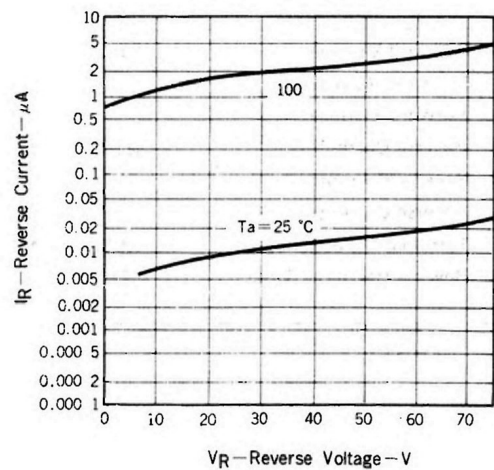


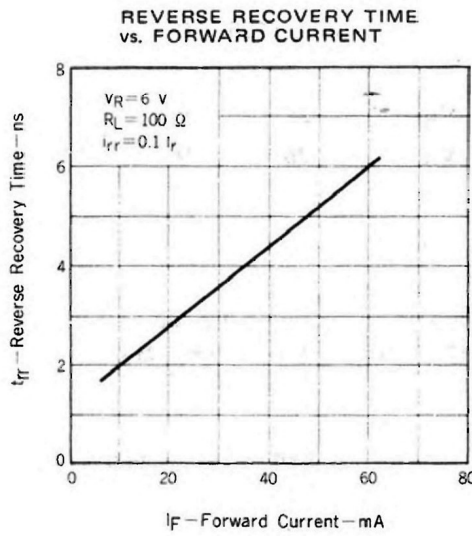
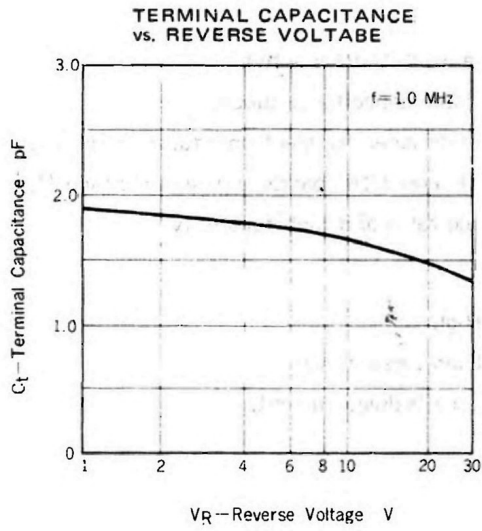
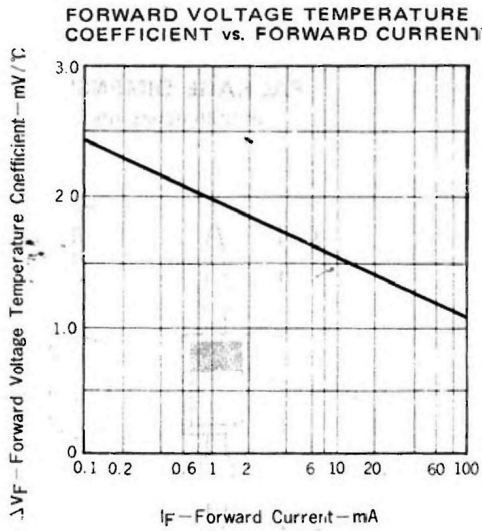
1S955

FORWARD CURRENT vs. FORWARD VOLTAGE

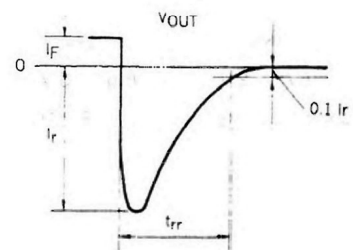
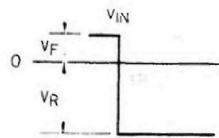
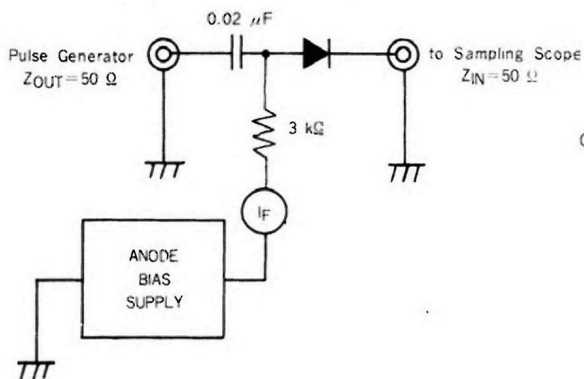


REVERSE CURRENT vs. REVERSE VOLTAGE





trr REVERSE RECOVERY TIME TEST CIRCUIT



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