

## CDST7000

**Voltage: 100 Volts**  
**Current: 200 mA**

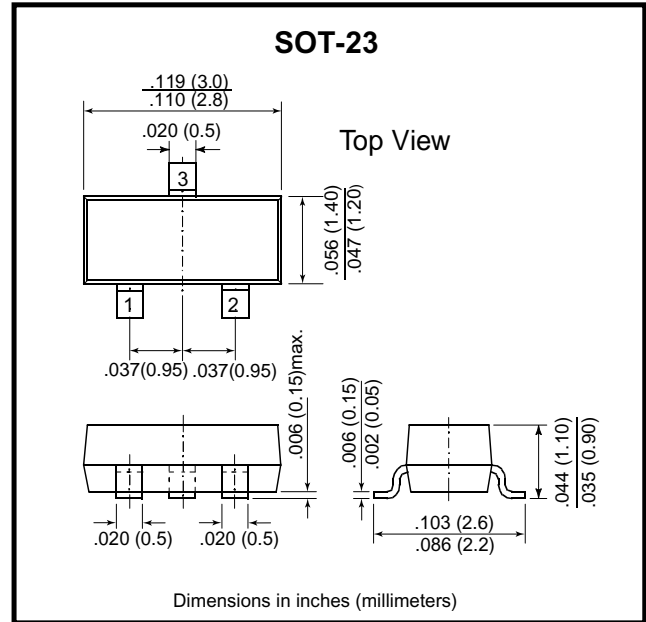
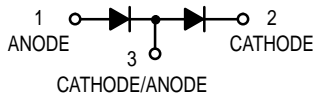


### Features

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- High Conductance

### Mechanical data

- Case: SOT-23, Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Approx. Weight: 0.008 gram



### Maximum Ratings

Rating	Symbol	Value	Units
Continuous Reverse Voltage	$V_R$	100	V <sub>DC</sub>
Peak Forward Current	$I_F$	200	mAdc
Peak Forward Surge Current	$I_{FM} \text{ (surge)}$	500	mAdc

### Thermal Characteristics

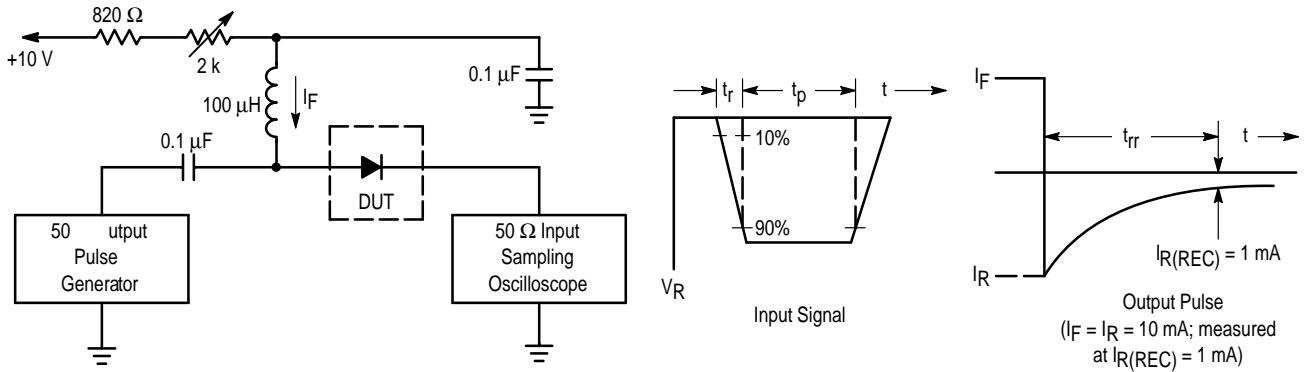
Characteristic	Symbol	Max	Units
Total Device Dissipation FR-5 Board(1) $T_A = 25^\circ\text{C}$	$P_D$	225	mW
Derate above $25^\circ\text{C}$		1.8	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{JA}$	556	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate,(2) $T_A = 25^\circ\text{C}$	$P_D$	300	mW
Derate above $25^\circ\text{C}$		2.4	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{JA}$	417	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic (OFF CHARACTERISTICS)	Symbol	Min	Max	Units
Reverse Breakdown Voltage ( $I_{(BR)} = 100 \text{ uAdc}$ )	$V_{(BR)}$	100	-	Vdc
Reverse Voltage Leakage Current $V_R = 50 \text{ Vdc}$	$I_R$	-	1	uAdc
	$I_{R2}$	-	3	
	$I_{R3}$	-	100	
Forward Voltage $I_F = 1.0 \text{ mAdc}$	$V_F$	0.55	0.7	Vdc
	$V_F$	0.67	0.82	
	$V_F$	0.75	1.1	
Reverse Recovery Time ( $I_F = I_R = 10 \text{ mAdc}$ ) (Figure 1)	$T_{rr}$		4.0	nS
Diode Capacitance ( $V_R = 0$ )	$C$	-	1.5	pF

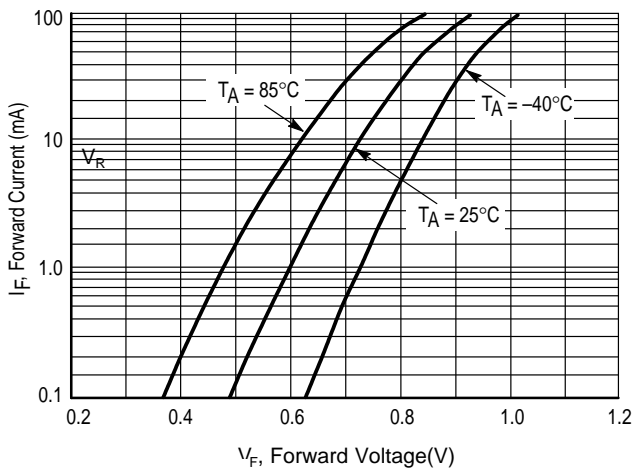
1.FR-5 = 1.0 X 0.75X 0.062 in. 2.Alumina = 0.4X 0.3X 0.024 in. 99.5% alumina.

## Rating and Characteristic Curves (CDST7000)

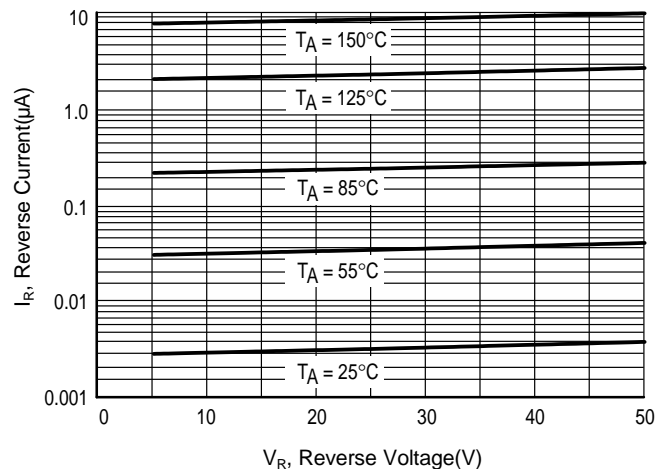


- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10 mA.  
 3.  $t_p \gg t_{rr}$

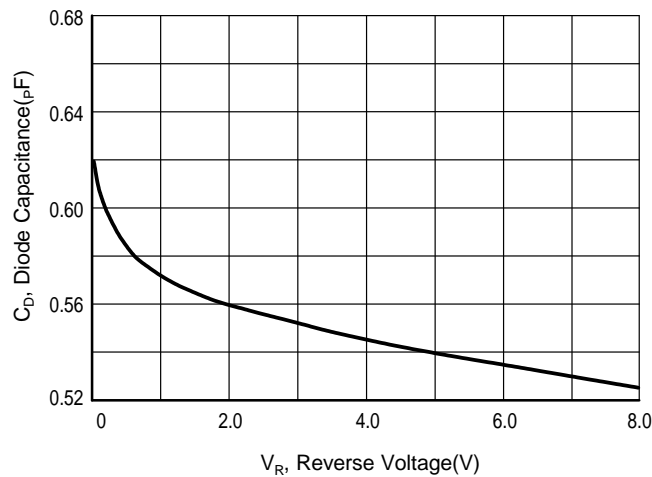
**Figure 1. Recovery Time Equivalent Test Circuit**



**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**



**Figure 4. Capacitance**