

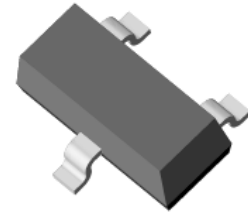
## High Voltage Switching Diode

### General Description

Single general-purpose switching diodes, fabricated in planar technology, and packaged in small SOT-23 surface mounted device (SMD) packages.

### Features and Benefits

- Silicon epitaxial planar diode
- High switching speed
- Low forward drop voltage and low leakage current
- “Green” device and RoHS compliant device
- Available in full lead (Pb)-free device



SOT-23



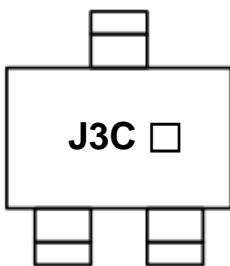
### Applications

- Ultra high speed switching application

### Ordering Information

Part Number	Marking Code	Package	Packaging
SDS20	J3C □	SOT-23	Tape & Reel

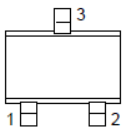
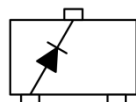
### Marking Information



J3C = Specific Device Code

□ = Year & Week Code Marking

### Pinning Information

Pin	Description	Simplified Outline	Graphic Symbol
1	Anode		
2	Not Connected		
3	Cathode		

**Absolute Maximum Ratings** ( $T_{amb}=25^{\circ}\text{C}$ , Unless otherwise specified)

Characteristic	Symbol	Ratings	Unit
Maximum repetitive peak reverse voltage	$V_{RM}$	200	V
Continuous reverse voltage	$V_R$	150	V
Maximum average forward rectified current	$I_O$	200	mA
Maximum repetitive peak forward current	$I_{FM}$	400	mA
Non-repetitive peak forward surge current( $t=10\text{ms}$ )	$I_{FSM}$	1.7	A
Power dissipation <sup>1)</sup>	$P_D$	250	mW

<sup>1)</sup> Device mounted on FR-4 board with recommended pad layout.

**Thermal Characteristics** ( $T_{amb}=25^{\circ}\text{C}$ , Unless otherwise specified)

Characteristic	Symbol	Ratings	Unit
Thermal resistance, junction to ambient <sup>1)</sup>	$R_{th(j-a)}$	500	$^{\circ}\text{C}/\text{W}$
Operating junction temperature	$T_j$	150	$^{\circ}\text{C}$
Storage temperature range	$T_{stg}$	-55 ~ 150	$^{\circ}\text{C}$

<sup>1)</sup> Device mounted on FR-4 board with recommended pad layout.

**Electrical Characteristics** ( $T_{amb}=25^{\circ}\text{C}$ , Unless otherwise specified)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse breakdown voltage	$V_{BR}$	$I_F=100\mu\text{A}$	200	-	-	V
Forward drop voltage <sup>2)</sup>	$V_F$	$I_F=100\text{mA}$	-	-	1.0	V
		$I_F=200\text{mA}$	-	-	1.25	V
Reverse leakage current <sup>3)</sup>	$I_R$	$V_R=150\text{V}$	-	-	100	nA
		$V_R=150\text{V}, T_a=150^{\circ}\text{C}$	-	-	100	$\mu\text{A}$
Total capacitance	$C_T$	$V_R=0\text{V}, f=1\text{MHz}$	-	-	5	pF
Reverse recovery time	$t_{rr}$	$I_F=I_R=30\text{mA}, I_{rr}=3\text{mA}, R_L=100\Omega$	-	-	50	ns

<sup>2)</sup> Pulse test:  $t_p \leq 380\mu\text{s}$ , Duty cycle  $\leq 2\%$

<sup>3)</sup> Pulse test:  $t_p \leq 5\text{ms}$ , Duty cycle  $\leq 2\%$

## Rating and Characteristic Curves

Fig. 1) Typical Forward Characteristics

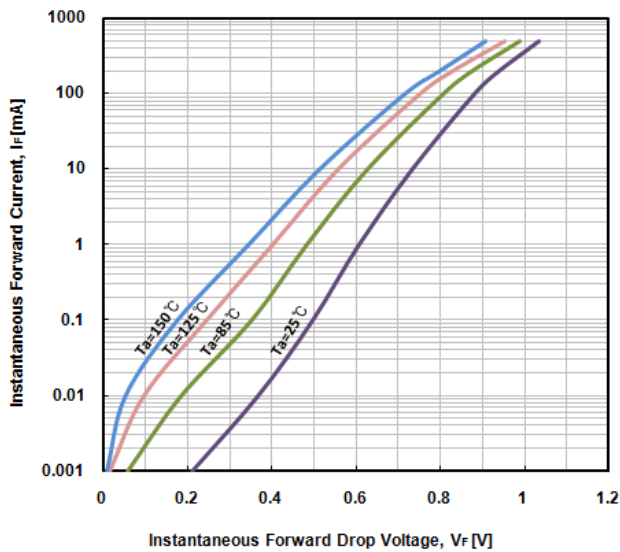


Fig. 2) Typical Reverse Characteristics

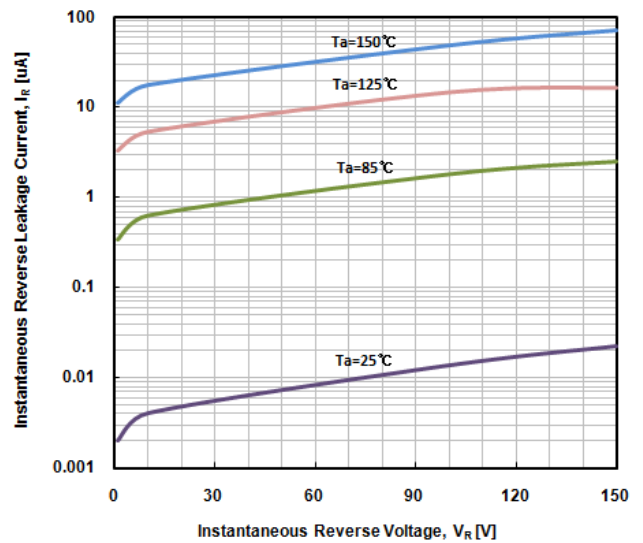


Fig. 3) Typical Total Capacitance Characteristics

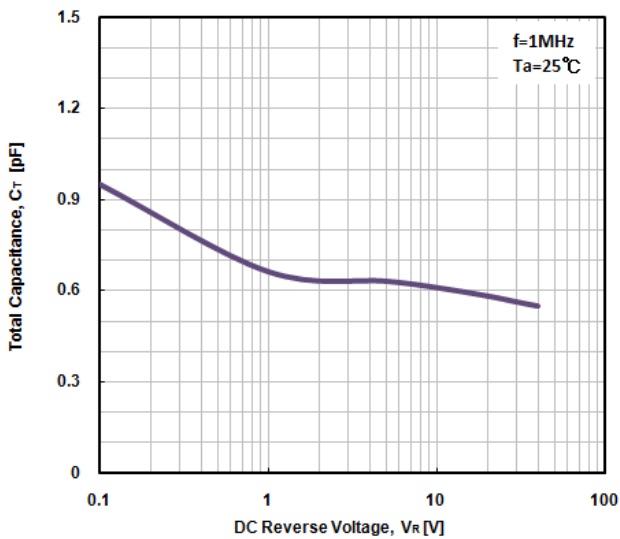


Fig. 4) Power Dissipation vs. Ambient Temperature

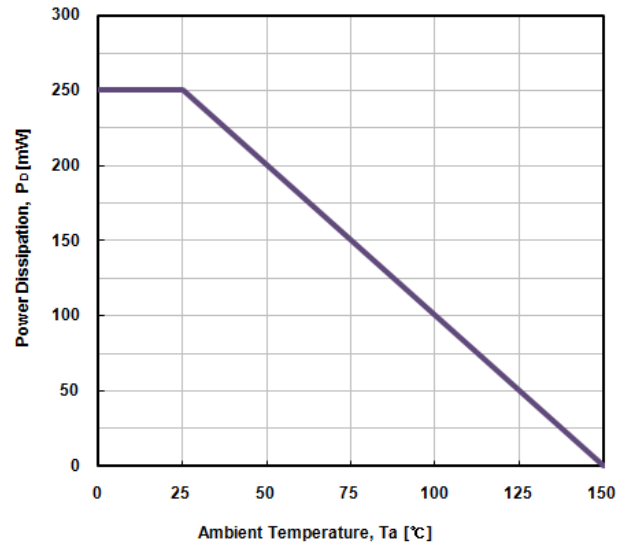
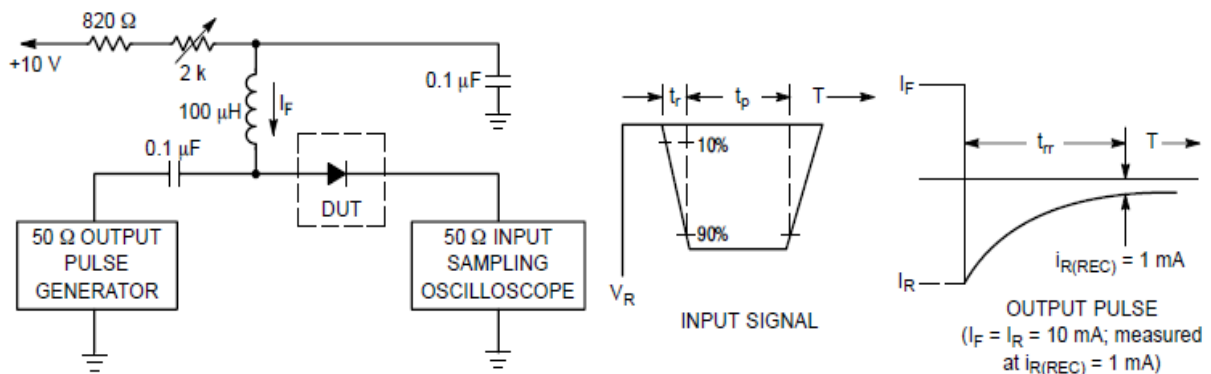
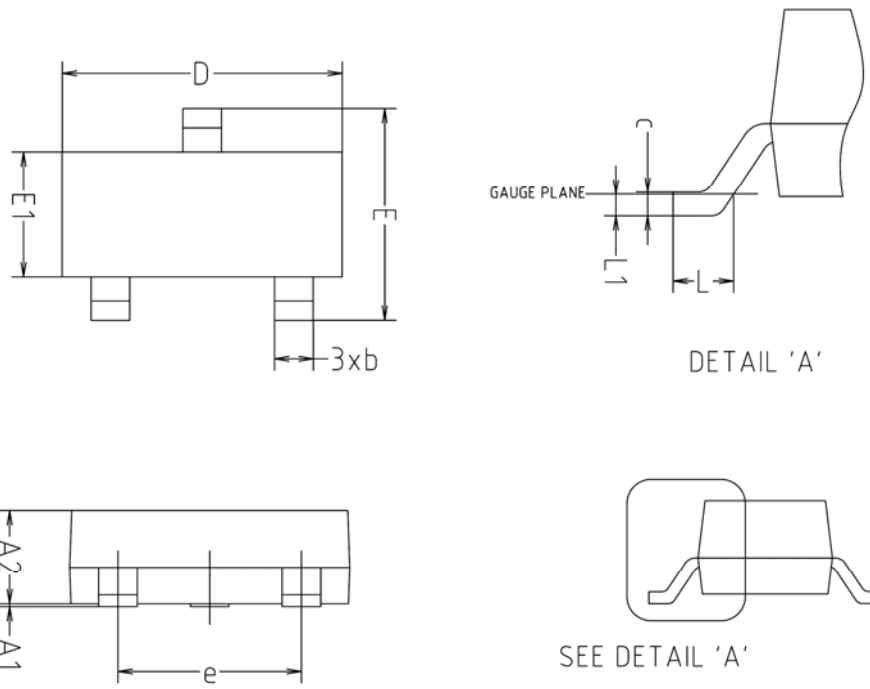


Fig. 5) Reverse recovery time equivalent test circuit



Package Outline Dimensions



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A1	0.00	-	0.10	
A2	0.82	-	1.02	
b	0.39	0.42	0.45	
c	0.09	0.12	0.15	
D	2.80	2.90	3.00	
E	2.20	2.40	2.60	
E1	1.20	1.30	1.40	
e	1.90BSC			
L	0.20	-	-	
L1	0.12BSC			

※ Recommend PCB solder land (Unit : mm)



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