

General Purpose Schottky Barrier Diode

General Description

The SDB310Q Schottky barrier diodes are designed for high-speed switching applications, circuit protection, and voltage clamping. Extremely low forward voltage reduces conduction. Miniature surface mount package is excellent for hand-held and portable applications where space is limited.



SOD-523



Features and Benefits

- Low forward drop voltage and low leakage current
- Very low switching time
- “Green” device and RoHS compliant device
- Available in full lead (Pb)-free device

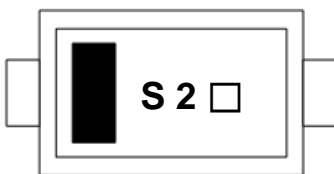
Applications

- General purpose and high speed switching
- Protection circuit and voltage clamping

Ordering Information

Part Number	Marking Code	Package	Packaging
SDB310Q	S2 □	SOD-523	Tape & Reel

Marking Information


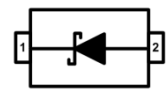


S 2 = Specific Device Code

□ = Year & Week Code Marking

■ = Color band denote cathode

Pinning Information

Pin	Description	Simplified Outline	Graphic Symbol
1	Cathode		
2	Anode		

Absolute Maximum Ratings (T_{amb}=25°C, Unless otherwise specified)

Characteristic	Symbol	Ratings	Unit
Peak reverse voltage	V _{RM}	40	V
DC reverse voltage	V _R	30	V
Repetitive peak forward current	I _{FRM}	0.5	A
Forward current	I _F	0.2	A
Non-repetitive peak forward surge current(t=10ms)	I _{FSM}	2	A
Power dissipation ¹⁾	P _D	150	mW

¹⁾ Device mounted on FR-4 board with recommended pad layout.

Thermal Characteristics (T_{amb}=25°C, Unless otherwise specified)

Characteristic	Symbol	Ratings	Unit
Thermal resistance, junction to ambient ¹⁾	R _{th(j-a)}	833	°C/W
Operating junction temperature	T _j	150	°C
Storage temperature range	T _{stg}	-55 ~ 150	°C

¹⁾ Device mounted on FR-4 board with recommended pad layout.

Electrical Characteristics (T_{amb}=25°C, Unless otherwise specified)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Forward voltage ²⁾	V _{F(1)}	I _F =10mA	-	-	0.4	V
	V _{F(2)}	I _F =30mA	-	-	0.5	V
Reverse leakage current ³⁾	I _R	V _R =30V	-	-	1	μA
Total capacitance	C _T	V _R =1V, f=1MHz	-	-	10	pF
Reverse recovery time	t _{rr}	I _F = I _R =10mA, I _{R(REC)} = 1mA	-	-	5	ns

²⁾ Pulse test: t_p≤380μs, Duty cycle≤2%

³⁾ Pulse test: t_p≤5ms, Duty cycle≤2%

Rating and Characteristic Curves

Fig. 1) Typical Forward Characteristics

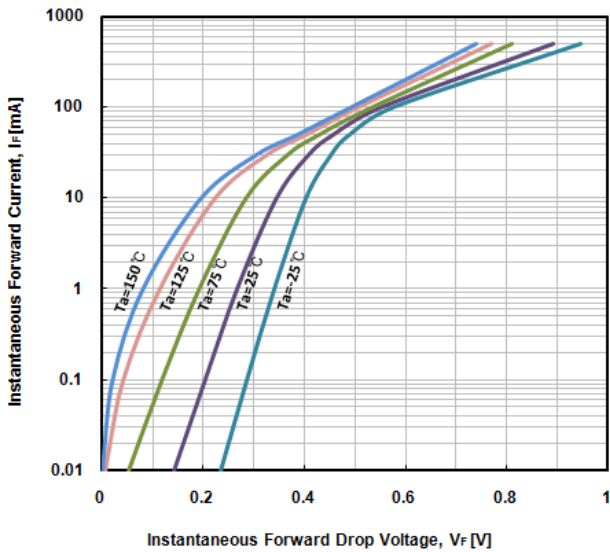


Fig. 2) Typical Reverse Characteristics

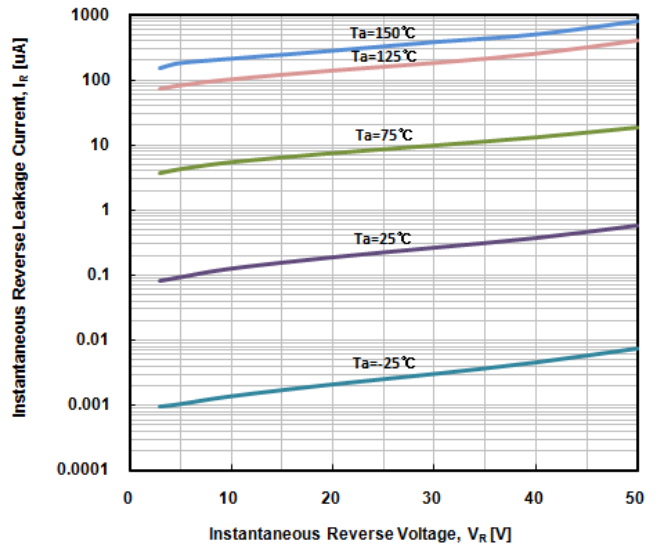


Fig. 3) Typical Total Capacitance Characteristics

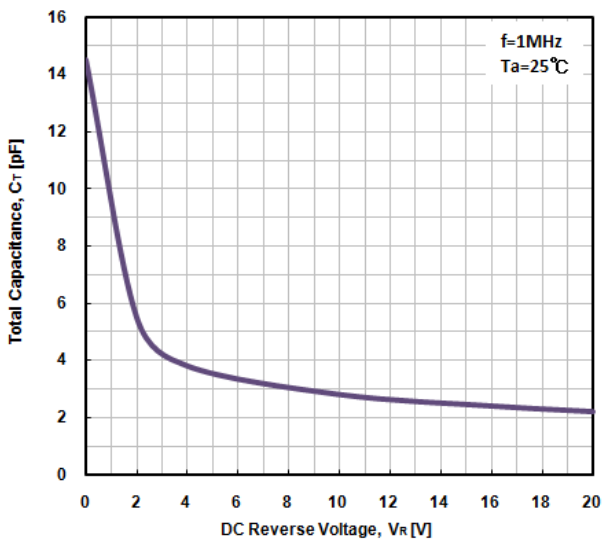


Fig. 4) Power dissipation vs. Ambient temperature

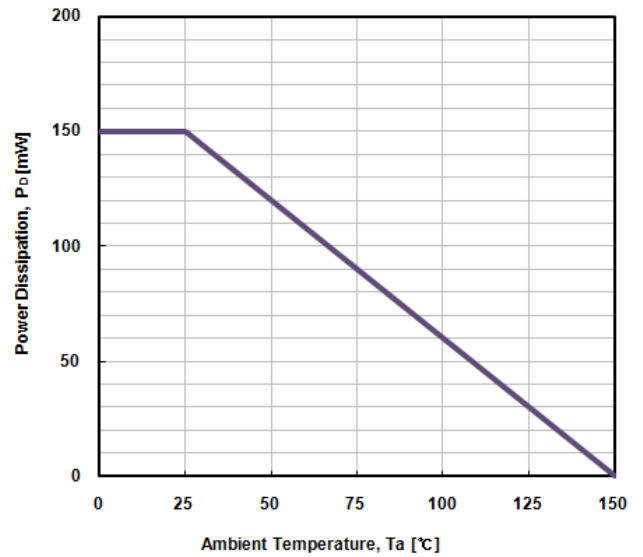
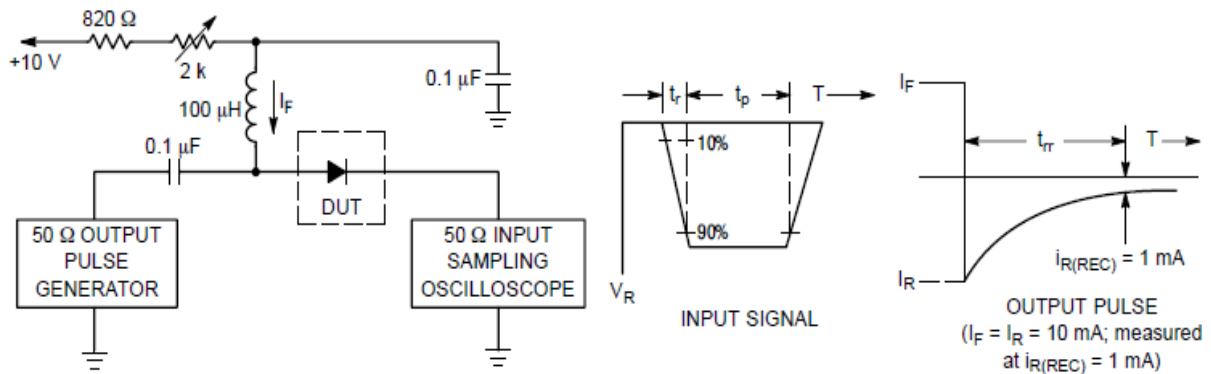
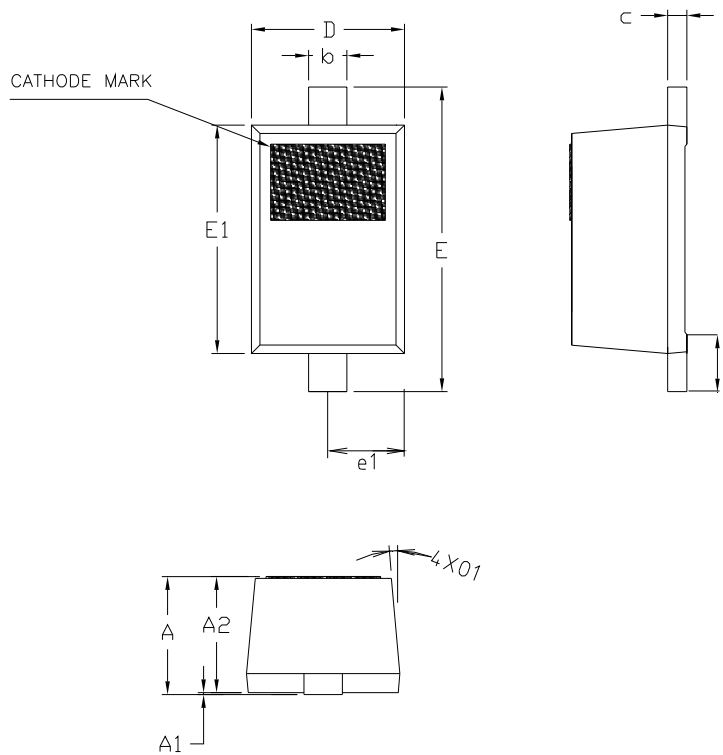


Fig. 5) Reverse recovery time equivalent test circuit

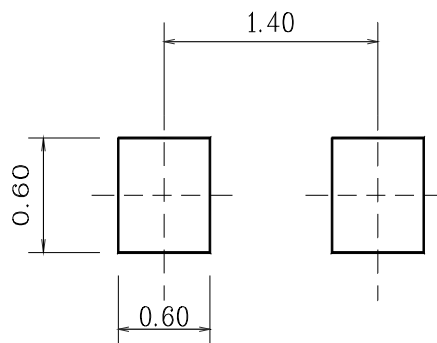


Package Outline Dimensions



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	0.60	0.70	0.80	
A1	0.00	—	0.10	
A2	0.50	0.60	0.70	
b	0.18	0.25	0.32	
c	0.08	0.12	0.16	
D	0.70	0.80	0.90	
E	1.50	1.60	1.70	
E1	1.10	1.20	1.30	
e1	0.40 BSC			
L	0.20	0.30	0.40	
θ1	4°	—	10°	

※ Recommend PCB solder land (Unit : mm)



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