

# Silicon-Based Technology

Power Schottky Barrier Rectifier

SBT120S Series

SBT120S series are Schottky Barrier Diodes fabricated by a series of proprietary Schottky barrier patents and technologies (SBT<sup>®</sup>) developed by Silicon-Based Technology Corporation, which exhibit high-performance characteristics for modern power switching, conversion and protection applications with high speed and low power consumptions. The package types as described in this data sheet are set forth in routine production; other packages are available upon special orders.

## ■ Features and Advantages:

- Low forward voltage drop ( $V_F$ )
- Low reverse leakage current ( $I_R$ )
- Very small conduction power loss
- Very small switching power loss
- Very high switching speed
- Very high reliability

## ■ Static Electrical Characteristics :

	$V_F$ (V) Max.	$I_F$ (A)	$I_R$ ( $\mu$ A) Max./Typ.	$V_R$ (V)	$T_A$ ( $^{\circ}$ C)
SBT120SL	0.42	1.0	100/25	20	25
SBT120SN	0.45				
SBT120SH	0.48				
SBT120SP	0.52				



Silicon-Based Technology Corporation

1F, No. 23, R&D Rd. I, Hsinchu Science Park, Taiwan, R.O.C

Tel : 886-3-5777897

Fax : 886-3-5779832

**■ Maximum Ratings and Electrical Characteristics :**

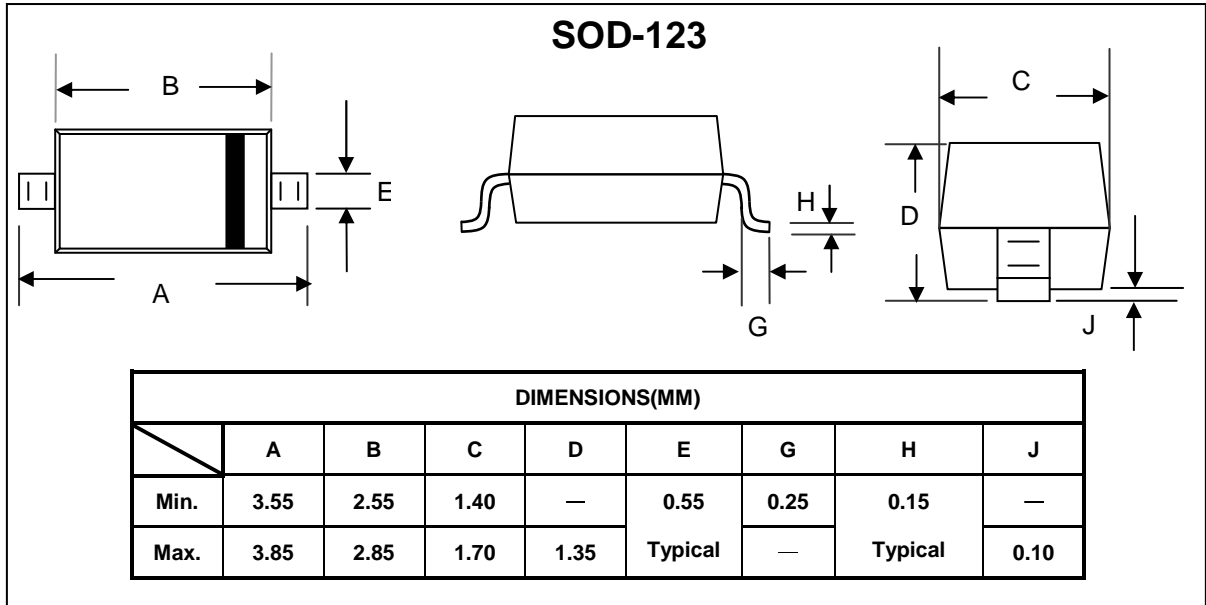
(<sup>Ⓢ</sup>T<sub>A</sub>=25°C unless otherwise specified)

Characteristics	SBT120SL	SBT120SN	SBT120SH	SBT120SP	Unit
Peak Repetitive Reverse Voltage, V <sub>RRM</sub> Working Peak Reverse Voltage, V <sub>RWM</sub> DC Blocking Voltage, V <sub>R</sub>	20				V
RMS Reverse Voltage, V <sub>R(RMS)</sub>	14				V
Average Rectified Output Current, I <sub>O</sub> <sup>Ⓢ</sup> T <sub>J</sub> =130°C	1.0				A
Non-Repetitive Peak Forward Surge Current under 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method), I <sub>FSM</sub>	40				A
Forward Voltage, V <sub>FM</sub> <sup>Ⓢ</sup> I <sub>F</sub> =1.0A	0.42	0.45	0.48	0.52	V
Peak Reverse Current at Rated DC    Max.	100				μA
Blocking Voltage, I <sub>RM</sub> Typ.	25				
Typical Junction Capacitance, C <sub>J</sub> (Note 1)	90				pF
Operating (Storage) Temperature Range, T <sub>J</sub> (T <sub>STG</sub> )	-65 to +150				°C

Notes: 1. Measured at 1.0 MHz and with an applied DC reverse voltage of 4.0V.

**■ Package Data :**

- Case: Molded Plastic Material (UL Flammability Classification 94V-0)
- Terminals: Solderable Plated Terminals (MIL-STD-202, Method 208)
- Lead Free Plating (Matte Tin Finish)
- Polarity: Cathode Band as shown in page3 or Cathode Notch
- Approx. Weight: 0.0241 grams for SOD-123



■ **Ordering Information** (Note 2)

Part Number	Marking Code	Packaging Type	Shipping	
			7" Tape & Real	13" Tape & Real
SBT120SX	SBT1BSX	SOD-123	3K	10K

Notes: 2. For Packaging Details, please go to our Website at <http://www.sbt.com.tw>

X = Device type, e.g.: X=L, X=N, X=H, X=P

- 3. Bulk package is also available upon request.
- 4. Day code marking is YWW or YM, in which Y represents year (For example: 2005 is marked by 5); WW represents weekth in a year (For example: 5th week is marked by 05); M represents month in a year (For example: March is marked by C; November is marked by K).

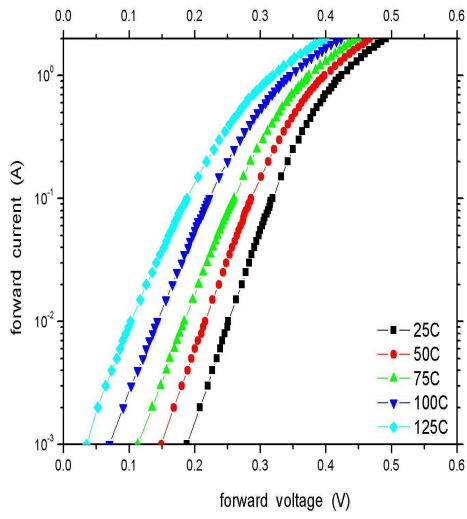


Fig.1 Typical forward I-V

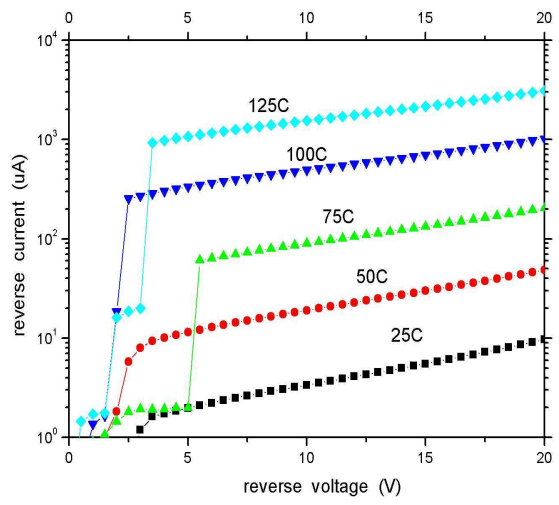


Fig.2 Typical reverse I-V

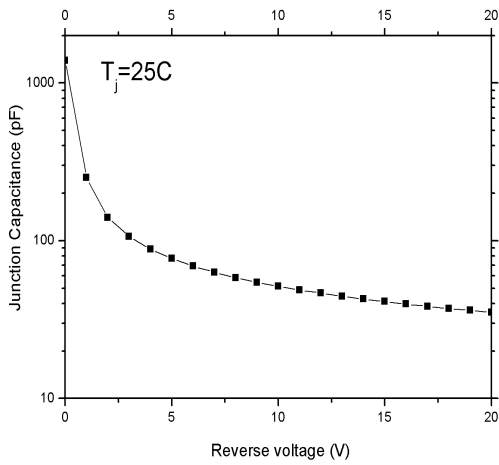


Fig.3 Typical C-V