Silicon-Based Technology Corp.

Small-Signal Schottky Barrier Diodes **SBT42D/43D Series**

SBT42D/43D series are Schottky Barrier Diodes fabricated by a series of proprietary Schottky barrier patents and technologies (SBT®) developed by Silicon-Based Technology Corporation, which exhibit high-performance characteristics for modern 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

■ Electrical Characteristics : (@T_A=25℃ unless otherwise specified)

Characteristic		Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Reverse Breakdown Voltage (Note 2)		$V_{(BR)R}$	30	-	-	V	I_R=100μA Pulses
Maximum Forward Voltage Drop (Note 2)	All Types	V_{FM}	-	-	0.60	V	I_F=200mA
	SBT42D		-		0.35		I_F=10mA
	SBT42D		-		0.45		I_F=50mA
	SBT43D		-		0.30		I_F=2.0mA
	SBT43D		-		0.35		I_F=15mA
Maximum Peak Reverse Current (Note 2)		I_{RM}	-	-	0.50	μA	V_R=25V
					100		V_R=25V, T_j=100℃
Junction Capacitance		C_j	-	10	-	pF	V_R=3.0V, f=1.0MHz
Reverse Recovery Time		t_{rr}	-	-	5.0	ns	I_F=I_R=10mA, I_{rr}=0.1×I_R, R_L=100Ω
Rectification Efficiency		ηv	80	-	-	%	R_L=100Ω, C_L=300pF, F=45MHz, V_{RF}=2.0V

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■ Maximum Ratings : (@T_A=25℃ unless otherwise specified)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	30	V
RMS Reverse Voltage	$V_{R(RMS)}$	21	V
Forward Continuous Current (Note 1)	I_{FM}	200	mA
Repetitive Peak Forward Current (Note 1) @t<1.0s Duty Cycle<50%	I_{FRM}	500	mA
Non-Repetitive Peak Forward Surge Current @t=10ms	I_{FSM}	4.0	A
Power Dissipation (Note 1)	P_d	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{\theta JA}$	500	K/W
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +125	℃

Notes: 1. Valid provided that leads are kept at ambient temperature.

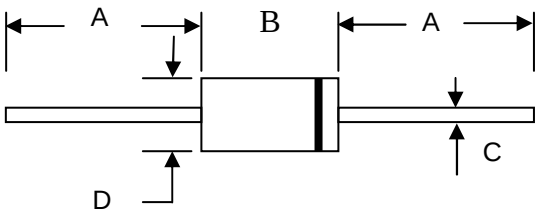
2. t<300μs, Duty Cycle<2%.

3. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see EU Directive Annex Notes6 and 7.

■ 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**:** See device configurations below
- Approx. Weight**:** 0.13 grams
- Package outline and dimensions (see below)

DO-35



DIMENSIONS (MM)				
	A	B	C	D
Min.	25.40	-	-	-
Max.	-	4.00	0.60	2.00

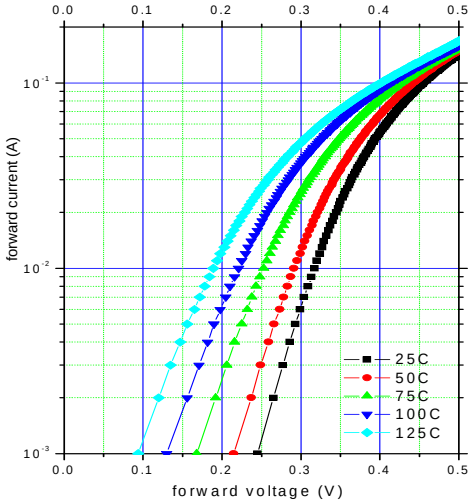
■ Ordering Information (Note 4)

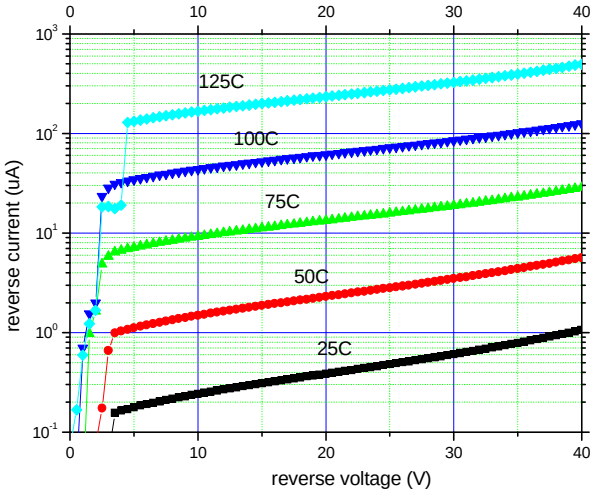
Part Number	Marking Code	Packaging Type	Shipping
			7″ Tape & Real
SBT42D	SBT42D	DO-35	3K
SBT43D	SBT43D	DO-35	3K

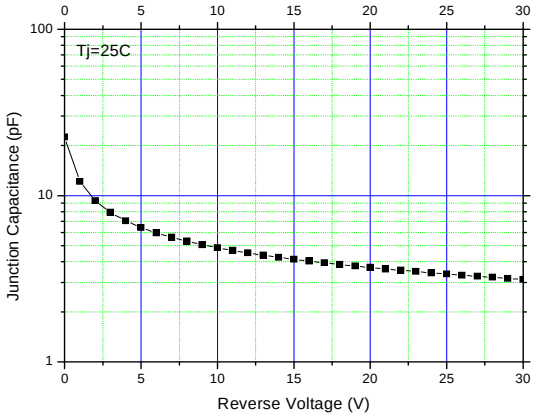
Notes: 4. Website at http://www.sbt.com.tw

5. Bulk package in a box form is also available upon request.

6. Day code marking is YM, in which Y represents year (For example: 2005 is marked by 5);
M represents month in a year (For example: March is marked by C; November is marked by K).


forward current (A)
forward voltage (V)
25C
50C
75C
100C
125C


reverse current (uA)
reverse voltage (V)
125C
100C
75C
50C
25C


Tj=25C
Junction Capacitance (pF)
Reverse Voltage (V)