

# Silicon-Based Technology Corp.

Small-Signal Schottky Barrier Diodes

SBT54D Series

SBT54D 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 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 : (@ $T_A=25^\circ\text{C}$ unless otherwise specified)

Characteristic	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	30	-	-	V	$I_R=100\mu\text{A}$
Forward Voltage (Note 2)	$V_F$	-	-	200 260 350 400 500	mV	$I_F=0.1\text{mA}$ $I_F=1\text{mA}$ $I_F=10\text{mA}$ $I_F=30\text{mA}$ $I_F=100\text{mA}$
Reverse Leakage Current (Note 2)	$I_R$	-	-	1.0	$\mu\text{A}$	$V_R=25\text{V}$
Total Capacitance	$C_T$	-	-	10	pF	$V_R=3.0\text{V}$ , $f=1.0\text{MHz}$
Reverse Recovery Time	$t_{rr}$	-	-	5.0	ns	$I_F=10\text{mA}$ through $I_R=10\text{mA}$ to $I_R=1.0\text{mA}$ , $R_L=100\Omega$



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**■ Maximum Ratings : (@T<sub>A</sub>=25°C unless otherwise specified)**

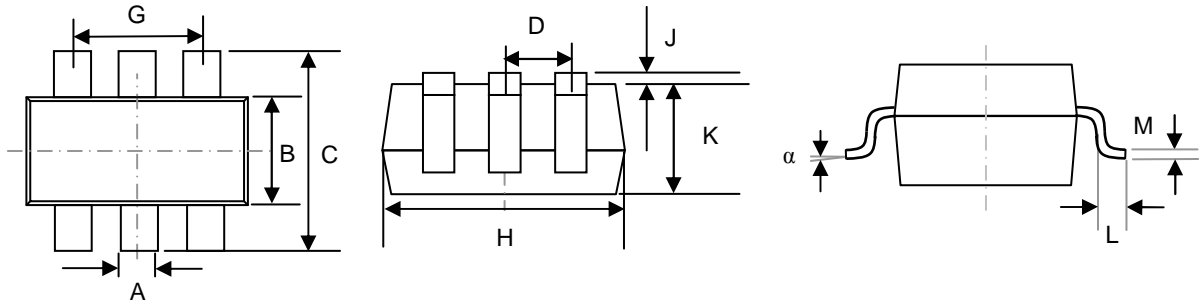
<b>Characteristic</b>	<b>Symbol</b>	<b>Value</b>	<b>Unit</b>
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	30	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
Forward Continuous Current (Note 1)	I <sub>F</sub>	200	mA
Repetitive Peak Forward Current (Note 1)	I <sub>FRM</sub>	300	mA
Forward Surge Current (Note 1) @t<1.0s	I <sub>FSM</sub>	600	mA
Power Dissipation (Note 1)	P <sub>d</sub>	200	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	R <sub>θJA</sub>	625	°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-65 to +125	°C

- Notes: 1. Device mounted on FR-4 PC board with a recommended pad layout, which can be found on our website at [www.sbt.com.tw](http://www.sbt.com.tw)
2. Short duration test pulse is used to minimize self-heating effect.

**■ 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: 0.006 grams
- Package outline and dimensions (see below)

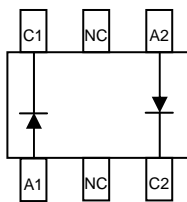
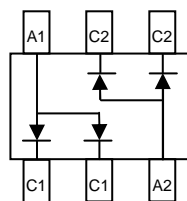
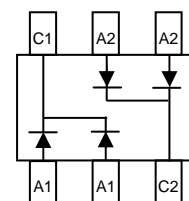
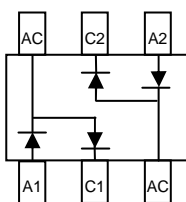
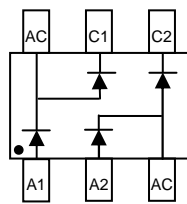
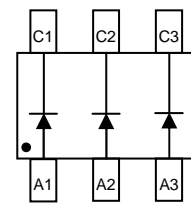
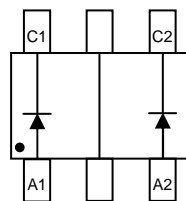
### SOT-363


**DIMENSIONS (MM)**

	A	B	C	D	F	H	J	K	L	M	$\alpha$
Min.	0.10	1.15	2.00	0.65	0.30	1.80	-	0.90	0.25	0.10	0°
Max.	0.30	1.35	2.20	Nominal	0.40	2.20	0.10	1.00	0.40	0.25	8°

**■ Device Configurations :**

### TOP VIEW


**SBT54DW**

**SBT54ADW**

**SBT54CDW**

**SBT54SDW**

**SBT54BRW**

**SBT54TDW**

**Jumper connection between middle pins**



■ **Ordering Information** (Note 3)

Part Number	Marking Code	Packaging Type	Shipping
			7" Tape & Real
SBT54DW	SBT544	SOT-363	3K
SBT54ADW	SBT545	SOT-363	3K
SBT54CDW	SBT546	SOT-363	3K
SBT54SDW	SBT547	SOT-363	3K
SBT54BRW	SBT548	SOT-363	3K
SBT54TDW	SBT54T	SOT-363	3K
SBT54JDW	SBT54J	SOT-363	3K

Notes: 3. Website at <http://www.sbt.com.tw>

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

5. 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).

