

# Silicon-Based Technology Corp.

*Small-Signal Schottky Barrier Diodes*

**SBT20E40C Series**

SBT20E40C 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 3)	$V_{(BR)R}$	40	-	-	V	$I_R=10\mu\text{A}$
Forward Voltage (Note 3)	$V_F$	-	-	280 450	mV	$I_F=10\text{mA}$ $I_F=200\text{mA}$
Leakage Current (Note 3)	$I_R$	-	-	70	$\mu\text{A}$	$V_R=25\text{V}$
Total Capacitance	$C_T$	-	-	100	pF	$V_R=0\text{V}$ , $f=1.0\text{MHz}$



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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>		
Working Peak Reverse Voltage	V <sub>RWM</sub>	40	V
DC Blocking Voltage	V <sub>R</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	28	V
Forward Continuous Voltage (Note 2)	I <sub>F</sub>	0.4	A
Non-Repetitive Peak Forward Surge Current @8.3ms	I <sub>FSM</sub>	2	A
Power Dissipation (Note 1)	P <sub>d</sub>	400	mW
Operating Temperature Range	T <sub>OP</sub>	-30 to +85	°C
Junction Temperature Range	T <sub>j</sub>	-30 to +1285	°C
Storage Temperature Range	T <sub>STG</sub>	-40 to +125	°C

Notes: 1. Mounted on FR4 PC Board with recommended pad layout which can be found on our website at <http://www.sbt.com.tw>.

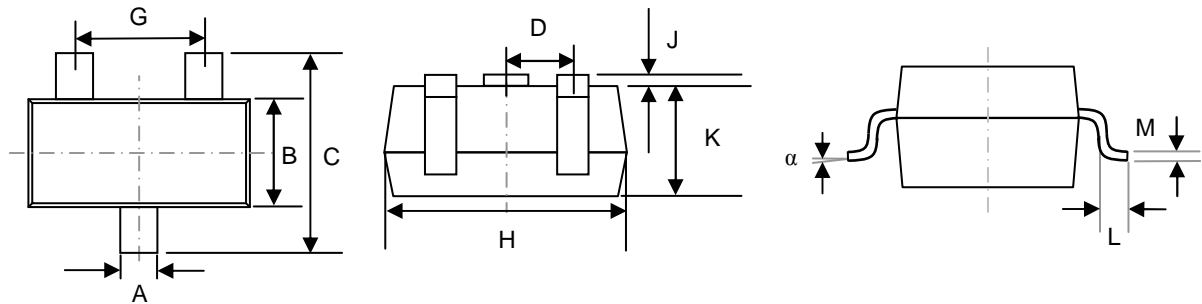
2. No purposefully added lead.

3. Short duration test pulse 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: 0.008 grams.
- Package outline and dimensions (see below)

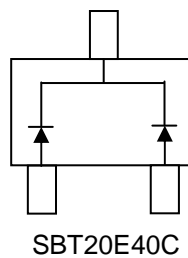
### SC-59



DIMENSIONS (MM)											
	A	B	C	D	G	H	J	K	L	M	$\alpha$
Min.	0.35	1.50	2.70	0.95	1.90	2.90	0.013	1.00	0.35	0.10	0°
Max.	0.50	1.70	3.00			3.10	0.10	1.30	0.55	0.20	8°

#### ■ Device Configurations :

### TOP VIEW



SBT20E40C

#### ■ Ordering Information (Note 4)

Part Number	Marking Code	Packaging Type	Shipping
			7" Tape & Real
SBT20E40C	SBTBDC	SC-59	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).