Silicon-Based Technology Corp.

Small-Signal Schottky Barrier Diodes **SBT40Q Series**

SBT40Q 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
Forward Voltage (Note 2)	V_F	-	-	250 300 400 500 800	mV	I_F=0.1mA, tp<300μs I_F=1.0mA, tp<300μs I_F=10mA, tp<300μs I_F=30mA, tp<300μs I_F=100mA, tp<300μs
Reverse Current (Note 2)	I_R	-	-	2	μA	V_R=25V
Total Capacitance	C_T	-	10.0 6.5	-	pF	V_R=0, f=1.0MH_Z (Note 3) V_R=0, f=1.0MH_Z (Note 4)
Reverse Recovery Time	t_{rr}	-	-	5.0	ns	I_F=I_R=10mA, I_{rr}=0.1×I_R,R_L=100Ω

■ 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
Forward Continuous Current (Note 1)	I_{FM}	200	mA
Non-Repetitive Peak Forward Current @t<1.0s	I_{FSM}	600	mA
Power Dissipation (Note 1)	P_d	200	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{\theta JA}$	625	℃/W
Operating Temperature Range	T_j	-55 to +125	℃
Storage Temperature Range	T_{STG}	-65 to +125	℃

Notes: 1. Device mounted on FR-4 PCB, 1 inch*0.85 inch*0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which cab be found on our website at http://www.sbt.com.tw.

2. Short duration test pulse is used to minimize self-heating effect.

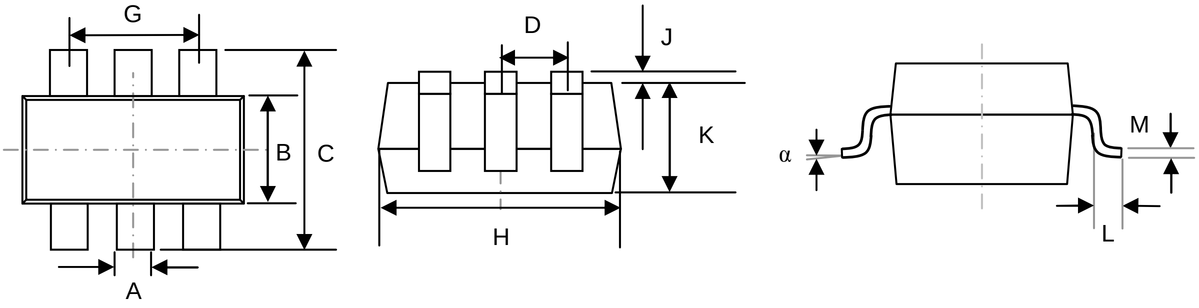
3. At V_R=0V, DL(X) to V_{CC} or GND.

4. At V_R=0V, between Data Lines (e.g., DL1 and DL4).

■ 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)

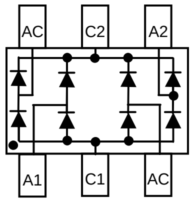
SOT-363



DIMENSIONS (MM)											
	A	B	C	D	F	H	J	K	L	M	α
Min.	0.10	1.15	2.00	0.65 Nominal	0.30	1.80	-	0.90	0.25	0.10	0°
Max.	0.30	1.35	2.20		0.40	2.20	0.10	1.00	0.40	0.25	8°

■ Device Configurations :

TOP VIEW



■ Ordering Information (Note 5)

Part Number	Marking Code	Packaging Type	Shipping
			7″ Tape & Real
SBT40Q	SBT40Q	SOT-363	3K

Notes: 5. Website at http://www.sbt.com.tw

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

7. 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).