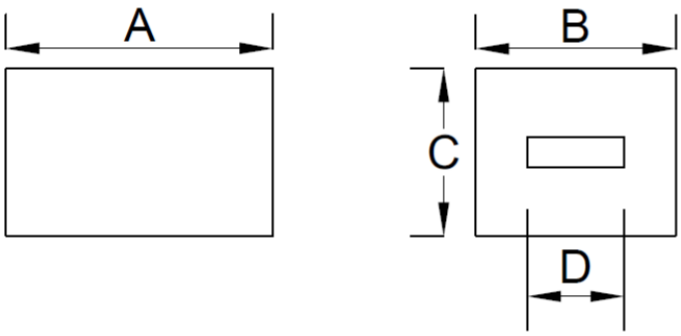
High Current Chip Perforation Bead

◆ PRODUCT IDENTIFICATION

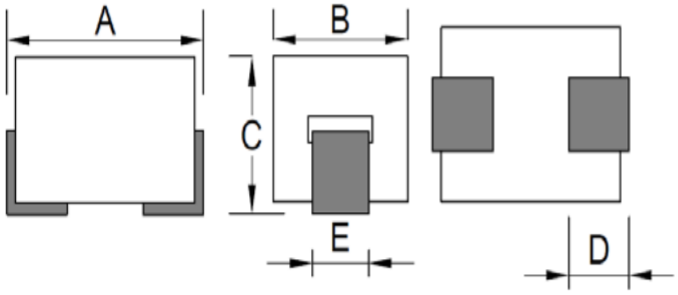
SBH	3230	S	400	N	T	T
(1)	(2)	(3)	(4)	(5)	(6)	(7)

1: Series Type
2: Chip Size (mm): Length X Width
3: Material Code
4: Nominal Impedance: 400=40 Ω
5: Inpedance Tolerance: N=±25%
6: Company Code
7: Packaging:Tape Carrier Package

◆DIMENSION (:mm)



CORE SIZE			
A(mm)	B(mm)	C(mm)	D(mm)
2.90 ±0.25	3.00 ±0.15	2.00 ±0.15	1.00 ±0.15



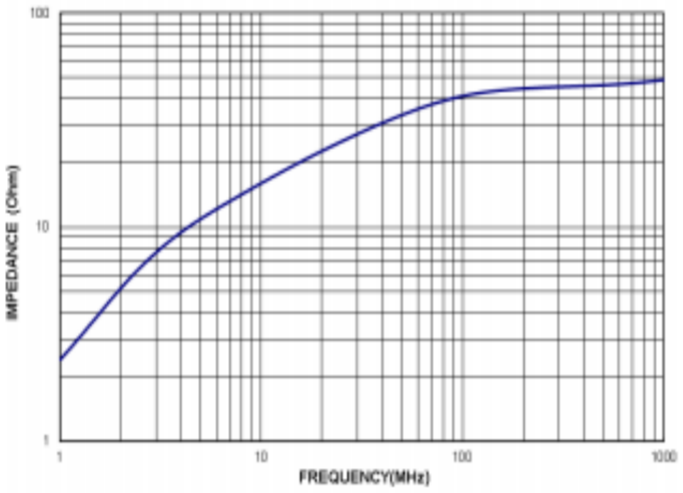
PRODUCT SIZE				
A(mm)	B(mm)	C(mm)	D(mm)	E(mm)
3.1-3.3	2.0 ±0.15	2.3～2.5	1.0±0.20	1.0±0.15

◆ ELECREICAL SPECIFICATION

Part Number	ELECTRICAL REQUIREMENTS 1			ELECTRICAL REQUIREMENTS 2			DCR (mΩ) Max.	Rated Current	
	Impedance (Ω)	Tolerance	Test Frequency (MHz)	Impedance (Ω)	Tolerance (%)	Test Frequency (MHz)		△T=40℃ TYP.	Test Frequency (MHz)
SBH3230S400NTT	23	min	25	40	±25	100	0.32	15.0	1

Note: COIL SPEC：FLAT.TCW(1.25W X 0.20T)m/m

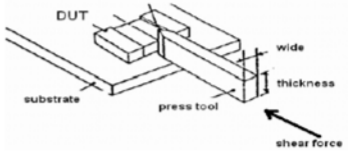
Typical Impedance v.s. Frequency Curve



◆ RELIABILITY AND TEST CONDITION

Item	Performance	Test Condition
Operating temperature	-40~+125℃ (Including self - temperature rise)	
Storage temperature	-40~+125℃ (on board)	
Electrical Performance Test		
Z(Impedance)	Refer to standard electrical characteristics list.	CH3302,CH1320,CHA113009,Agilent E4991 A ,Agilent 16197A LCR Meter.
DCR		CH16502,Agilent33420A Micro-Ohm Meter.
Heat Rated Current (Irms)	Approximately △T≦40℃	Heat Rated Current (Irms) will cause the coil temperature rise △T(℃) without core lo ss. 1.Applied the allowed DC current(keep 1 mi n.). 2.Temperature measured by digital surface t hermo meter

Reliability Test		
Life Test	Appearance：No damage. Inductance：within±10% of initial value Q：Shall not exceed the specification value. RDC：within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020DClassification Reflow Profiles) Temperature： 125±2℃(Inductor) Applied current：rated current Duration：1000±12hrs Measured at room temperature after placing for 24 ±2 hrs
Load Humidity		Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020DClassification Reflow Profiles Humidity：85±2R.H, Temperature：85℃±2 Duration：1000hrs Min. with 100% rated current Measured at room temperature after placing for 24 ±2 hrs
Moisture Resistance		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles 1. Baked at50℃ for 25hrs, measured at room temperature after placing for 4 hrs. 2. Raise temperature to 65±2℃ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25℃ in 2.5hrs. 3. Raise temperature to 65℃±2℃ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25 ℃ in 2.5hrs,keep at 25℃ for 2 hrs then keep at -10℃ for 3 hrs 4. Keep at 25℃ 80-100%RH for 15min and vibrate at the frequency of 10 to 55 Hz to 10 Hz, measure at room temperature after placing for 1~2 hrs
Thermal shock		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles Condition for 1 cycle Step1：-40±2℃ 30±5min Step2：25±2℃ ≦0.5min Step3：125±2℃ 30±5min Number of cycles： 500 Measured at room temperature after placing for 24 ±2 hrs
Vibration		Oscillation Frequency: 10～2K～10Hz for 20 minutes Equipment： Vibration checker Total Amplitude:1.52mm±10% Testing Time：12 hours(20 minutes, 12 cycles each of 3 orientations)。

<table>
<tr><th>Item</th><th>Performance</th><th>Test Condition</th></tr>
<tr><td>Shock</td><td rowspan="2">Appearance：No damage.
Inductance：within±10% of initial value
Q：Shall not exceed the specification value.
RDC：within ±15% of initial value and shall not exceed the specification value</td><td><table>
<tr><th>Type</th><th>Peak value (g's)</th><th>Normal duration (D) (ms)</th><th>Wave form</th><th>Velocity change (Vi)ft/sec</th></tr>
<tr><td>SMD</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr>
<tr><td>Lead</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr>
</table>
shocks in each direction along 3 perpendicular axes.</td></tr>
<tr><td>Bending</td><td>Shall be mounted on a FR4 substrate of the following dimensions: >=0805:40x100x1.2mm <0805:40x100x0.8mm
Bending depth:
>=0805inch(2012mm):1.2mm
<0805 inch(2012mm):0.8mm
duration of 10 sec.</td></tr>
<tr><td>Soderability</td><td>More than 95% of the terminal electrode should be covered with solder。</td><td>Preheat: 150℃,60sec.。
Solder: Sn96.5% Ag3% Cu0.5%
Temperature: 245±5℃。
Flux for lead free: Rosin. 9.5%。
Dip time: 4±1sec。
Depth: completely cover the termination</td></tr>
<tr><td>Resistance to Soldering Heat</td><td rowspan="2">Appearance：No damage.
Inductance：within±10% of initial value
Q：Shall not exceed the specification value.
RDC：within ±15% of initial value and shall not exceed the specification value</td><td>Number of heat cycles: 1<table>
<tr><th>Temperature (°C)</th><th>Time(s)</th><th>Temperature ramp/immersion and emersion rate</th></tr>
<tr><td>260 ±5(solder temp)</td><td>10 ±1</td><td>25mm/s ±6 mm/s</td></tr>
</table></td></tr>
<tr><td>Terminal Strength</td><td>Preconditioning:Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles
With the component mounted on a PCB with the device to be tested, apply a force (>0805 inch(2012mm):1kg , <=0805 inch(2012mm):0.5kg)to the side of a device being tested.
This force shall be applied for 60 +1 seconds. Also the force shall be applied gradually as not to apply a shock to the component being tested.

</td></tr>
</table>

◆ SOLDERING AND MOUNTING

Soldering

Mildly activated rosin fluxes are preferred.SBH3230S400NTT terminations are suitable for all wave and re-flow soldering systems.If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

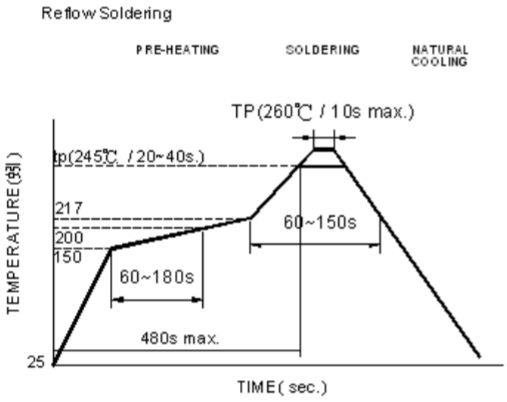
Solder re-flow:

Recommended temperature profiles for re-flow soldering in Figure 1.

Soldering Iron(Figure 2):

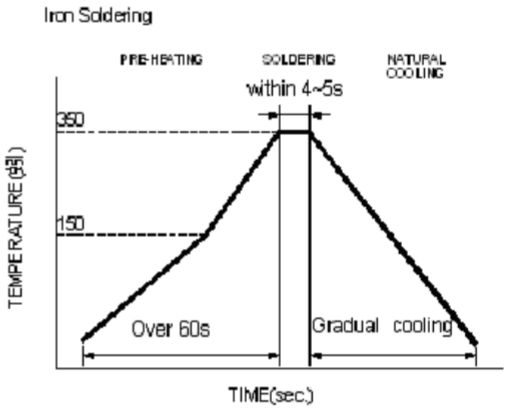
Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended.

・Preheat circuit and products to 150℃ ・355℃ tip temperature (max) ・Never contact the ceramic with the iron tip ・1.0mm tip diameter (max) ・Use a 20 watt soldering iron with tip diameter of 1.0mm ・Limit soldering time to 4~5 sec.



Reflow times: 3 times max.

Fig.1

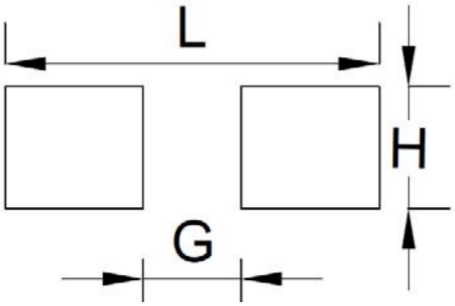


Iron Soldering times: 1 times max.

Fig.2

Recommended PC Board Pattern

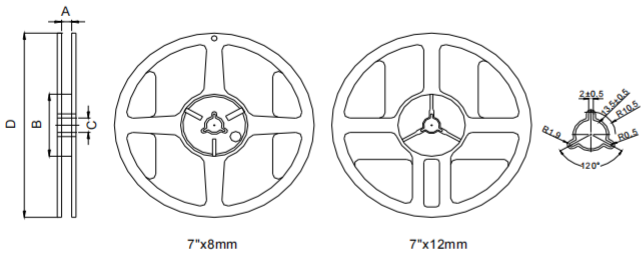
Fig.1



L(mm)	G(mm)	H(mm)
4.8	1.4	1.5

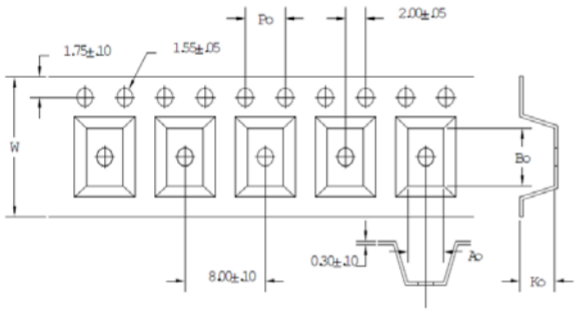
◆PACKAGING INFORMATION

Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
7"x12mm	13.5±0.5	60±2	13.5±0.5	178±2

Tape Dimension /12mm

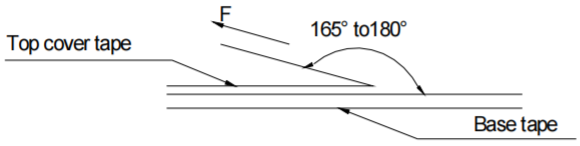


W(mm)	Po(mm)	Ao(mm)	Bo(mm)	Ko(mm)
12.±0.30	4.0±0.10	3.60±0.10	4.9±0.10	3.5±0.10

Packaging Quantity

Chip size	Chip / Reel	Inner box	Middle box	Carton
SBH3230S400NTT	500	2000	10000	20000

Tearing Off Force



The force for tearing off cover tape is 15 to 80 grams in the arrow direction under the following conditions.

Room Temp. (℃)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300