


**Features**

- Surface Mounting Design 6.8×3.5×3.5mm Current
- Current Handling Capability 6,000A @ 8/20μ s
- Low Capacitance and Insertion Loss
- Fast Response and Long Service Life
- Reliable to Protect Electrostatic Surge
- Moisture sensitivity level: Level 1

**Application Information**

- xDSL

**Agency Approvals**

Icon	Description
<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003
	Mean lead free

**Electrical Parameter**

DC Breakdown Voltage <sup>1)2) 3)4)</sup>	100V/s	72-108	V
Impulse Spark-over Voltage <sup>4)</sup>	At 1kV/μs	for 99 % of measured values	≤ 650
	At 1kV/μs	Typical values of distribution	≤ 600
Impulse Discharge Current <sup>5)</sup>	8/20μs	6,000	A
Insulation Resistance	DC=100V	≥1	GΩ
C(1MHz)	VDC=0.5V	≤1.0	pF
Weight		~0.33	g
Operating And Storage Temperature		-40-+90	℃
Marking		Without	

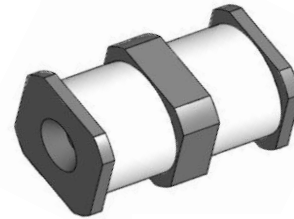
1) At delivery AQL 0.65 level II ISO 2859

2) In ionized mode

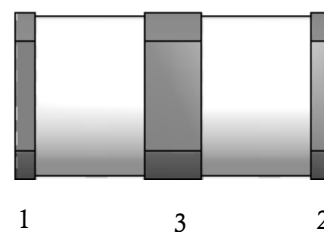
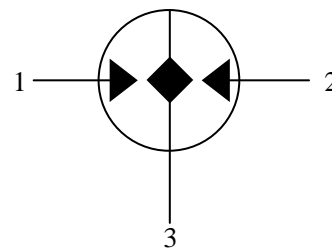
3) Terms and waveforms in accordance with ITU-T Rec. K. 12; IEC 61643-21

4) Tip electrode "1" or "2" to center electrode "3"

5) Total Currents through center electrode 2, half value through each Tip electrode "1" "2".

**Exterior**


SMD

**Package (Top View)**

**Schematic Symbol**


**Part Numbering System**

B3Q 090

(1) (2)

(1) Bencent 3-Electrode SMD Gas Discharge Tube

(2) DC Breakdown Voltage, e.g., 090=90V

**Product Characteristics**

Lead Material	Copper
Body Material	Ceramics
Terminal Finish	100% Matte-Tin Plated

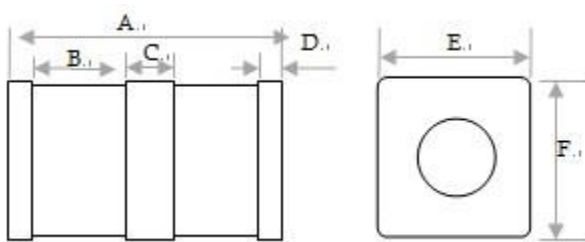
**Environmental Reliability Characteristics**

Testing items	Technical standards
High Temperature Storage Test	Temperature: 90°C Time: 2H
Low Temperature Storage Test	Temperature: -40°C Time: 2H
Vibration	Frequency: 10-500Hz Amplitude: 0.15mm Time: 45mins
Resistance of soldering heat	Temperature: 260±5°C Time of dip soldering: 10s, 1time

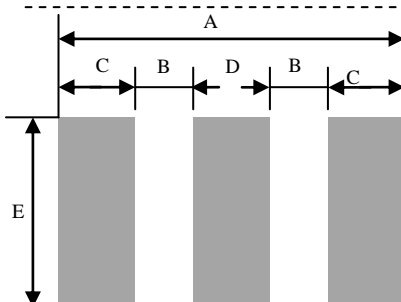
Note: Up-screen program can be specified by customer's request via contacting Bencent service

**Solderability Test**

Solderability	Solder Pot Temperature:	245°C ± 5°C
	Solder Dwell Time:	4-6 seconds

**Product Dimensions**


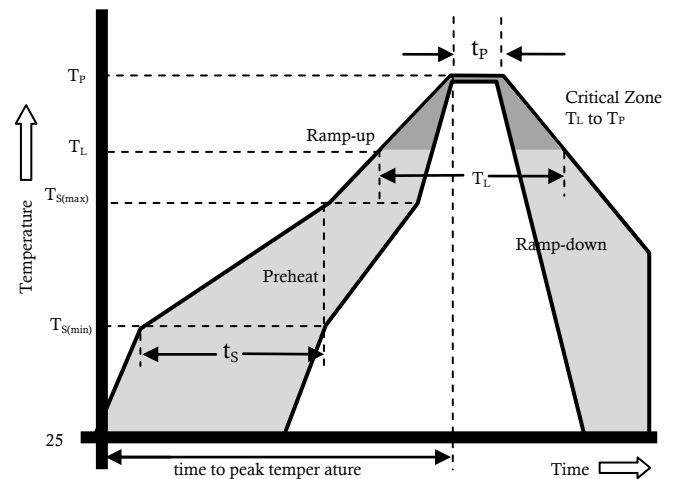
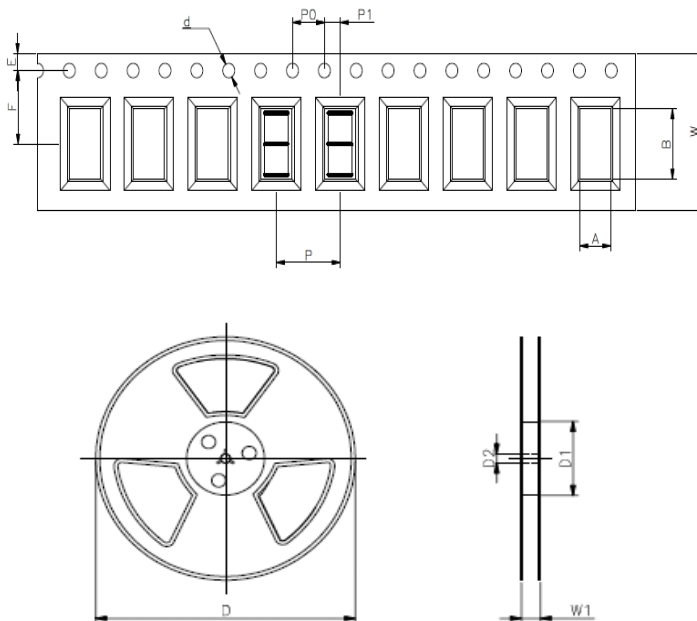
REF	mm	inch
A	6.8±0.2	0.268±0.008
B	2.4±0.15	0.094±0.006
C	1.2±0.1	0.047±0.004
D	0.4±0.1	0.016±0.004
E	3.5±0.15	0.138±0.006
F	3.5±0.15	0.138±0.006

**Recommended Soldering Pad**


REF	mm	inch
A	8.10	0.217
B	1.75	0.138
C	1.40	0.055
D	1.80	0.071
E	4.20	0.165

**Reflow Profile**

Reflow Condition		Pb-Free assembly
Pre Heat	Temperature Min	150 °C
	Temperature Max	200 °C
	Time (min to max)	60 – 180 secs
Average ramp up rate (Liquids) Tmp (T <sub>L</sub> ) to peal		3 °C/second max
T <sub>S</sub> (max) to T <sub>L</sub> - Ramp-up Rate		3 °C/second max
Reflow	- Temperature (T <sub>L</sub> ) (Liquids)	217 °C
	- Temperature (T <sub>L</sub> )	60 – 150 seconds
Peak Temperature (T <sub>P</sub> )		260±0/-5 °C
Time within 5 °C of actual peak Temperature (t <sub>p</sub> )		8 – 20 seconds
Ramp-down Rate		6 °C/second max
Time 25 °C to peak Temperature (T <sub>P</sub> )		8 minutes Max.
Do not exceed		260 °C


**Package Reel Information**


REF	mm	inch
A	3.9±0.2	0.154±0.008
B	7.0±0.2	0.276±0.008
d	Φ1.5±0.1	Φ0.059±0.004
E	1.75±0.1	0.069±0.004
F	7.5±0.1	0.295±0.002
P	8.0±0.1	0.315±0.004
P0	4.0±0.1	0.157±0.004
P1	2.0±0.1	0.079±0.004
W	16.0±0.3	0.63±0.012
D	Φ330.0	Φ13.0
D1	Φ50Min	Φ1.97Min
D2	Φ13±0.15	Φ0.512±0.006
W1	20.8±2.0	0.819±0.079

OUTLINE	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)	CARTON SIZE(mm)		
				L	W	H
TAPING	2,000	32,000	330	360	360	380