

Features

- Surface Mounting Design 7.8×5.0×6.0mm
- High Current Handling Capability 5,000A @ 8/20μs
- Low Capacitance and Insertion Loss
- Quick Response and Long Service Life
- Moisture sensitivity level: Level 1

Application information

- xDSL

Agency Approvals

Icon	Description
RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003
	Mean lead free
	UL Certificated E232249

Electrical Parameter

DC Breakdown Voltage ^{1)2) 4)}	100V/s	360-560	V
Impulse Spark-over Voltage ⁴⁾	At 100V/μs	for 99 % of measured values ≤ 850	V
		Typical values of distribution ≤ 750	V
	At 1kV/μs	for 99 % of measured values ≤ 950	V
		Typical values of distribution ≤ 850	V
Impulse Discharge Current ⁵⁾	8/20μs, ± 5operations	5,000	A
	10/1000 μs, ± 150 operations	200	A
Arc Voltage ⁴⁾	At 1A	~8	V
AC Discharge Current ⁵⁾	5A, 1S	10	Times
Insulation Resistance ⁴⁾	DC=100V	≥1	GΩ
Capacitance at 1MHz ⁴⁾	VDC=0.5V	≤1.5	pF
Weight		~1.1	g
Operating And Storage Temperature		-40-90	°C
Marking		Bencent Logo YY MM B3D470L-C (YY: year of production, MM: month of production)	

Exterior

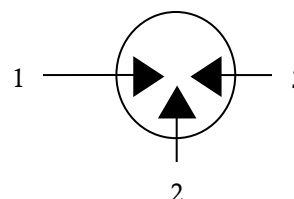


SMD

Package (Top View)



Schematic Symbol



Gas Discharge Tube

Version: A4 2015-08-28

- 1) At delivery AQL 0.65 level II GB/T 2828.1-2003
- 2) In ionized mode
- 3) Terms and waveforms in accordance with ITU-T Rec. K. 12; IEC 61643-21
- 4) Tip electrode 1or 3 to center electrode 2
- 5) Total Currents through center electrode 2, half value through each Tip electrode “1” “3”.

Part Numbering System

B3D 470 L - C
(1) (2) (3) (4)

(1) Bencent 3-Electrode SMD Gas Discharge Tube
7.8×5.0×6.0mm

(2) DC Breakdown Voltage, e.g., 470=470V

(3) Surge Rating @8/20μs, L=5,000A (Total Impulse Discharge Current 5,000A @ 8/20μs)

(4) “-C” Means it is Suitable for High-Speed SMT

Product Characteristics

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

Environmental Reliability Characteristics

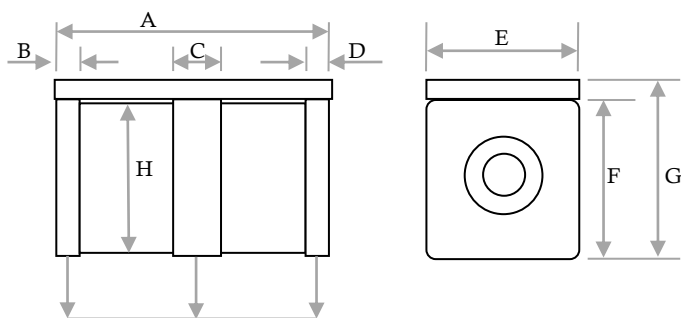
Testing items	Technical standards
High Temperature Storage Test	Temperature: 90°C Time: 2H
Low Temperature Storage Test	Temperature: -40°C Time: 2H
Vibration	Frequency: 10-500Hz Amplitude: 0.15mm Time: 45min
Resistance of soldering heat	Temperature: 260±5°C Time of dip soldering: 10s, 1time

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

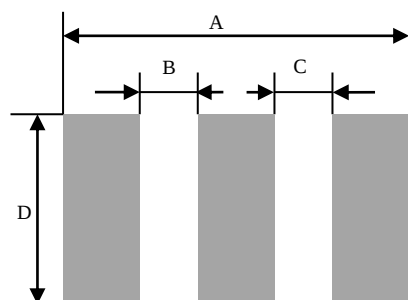
Recommended Soldering Pad



Coplanarity ≤ 0.15mm

REF	mm	inch
A	7.8±0.3	0.307±0.012
B	0.5±0.2	0.020±0.008
C	1.6±0.2	0.063±0.008
D	0.5±0.2	0.020±0.008
E	5.0±0.2	0.197±0.008
F	5.0±0.2	0.197±0.008
G	6.0±0.3	0.236±0.012
H	4.7±0.2	0.185±0.008

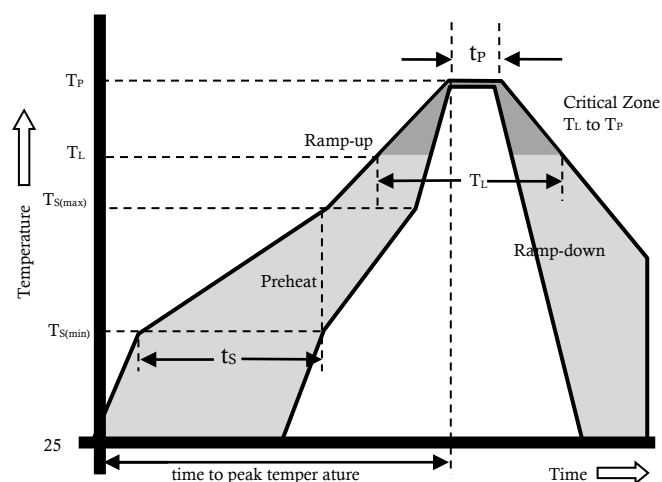
Recommended Soldering Pad



REF	mm	inch
A	9.6	0.378
B	1.5	0.059
C	1.5	0.059
D	5.0	0.197

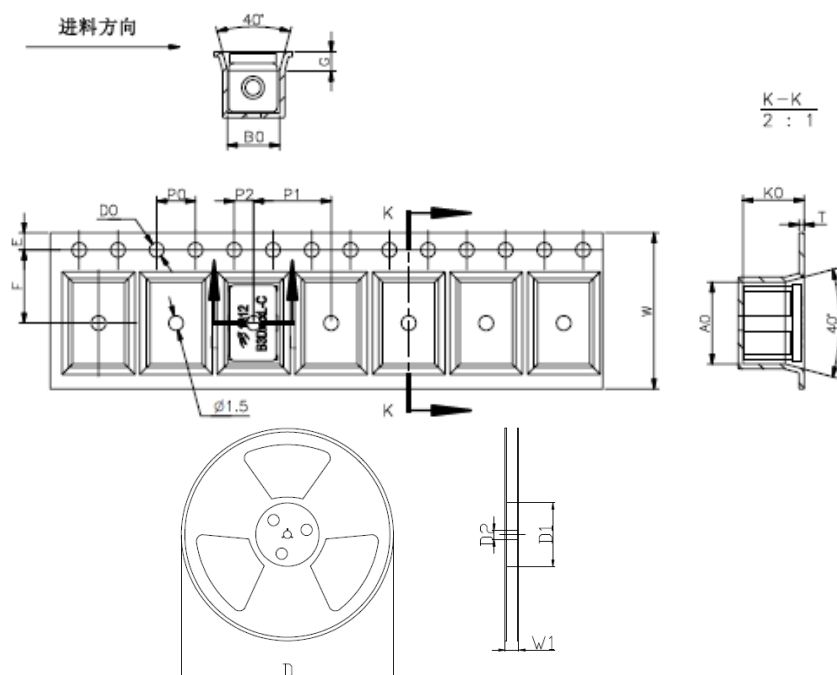
Reflow Profile

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 (Liquidus) T _{amp} (T _L) to peak		3°C/second max
T _S (max) to T _L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T _L) (Liquidus)	217°C
	- Temperature (T _L)	60 – 150 seconds
Peak Temperature (T _P)		260+0/-5 °C
Time within 5°C of actual peak Temperature (t _p)		~10 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T _P)		8 minutes Max.
Do not exceed		260°C



Remarking: It's only suitable for SMT manufacture, not for manual welding.

Package Reel Information



REF	mm	inch
A0	8.4±0.2	0.331±0.008
B0	5.4±0.2	0.216±0.008
P0	4.0±0.2	0.157±0.008
P1	8.0±0.2	0.315±0.008
P2	2.0±0.2	0.079±0.008
E	1.75±0.2	0.069±0.008
F	7.5±0.2	0.295±0.008
K0	6.3±0.2	0.248±0.008
T	0.5±0.2	0.020±0.008
G	2	0.079
D0	Φ1.5±0.2	Φ0.059±0.008
W	16.0±0.3	0.630± 0.012
D	Φ330.0	Φ13.0
D1	Φ50Min	Φ1.97Min
D2	Φ13±0.5	Φ0.512±0.020
W1	16.8±0.5	0.661±0.020

Outline	Reel (PCS)	Per Carton (PCS)	Reel Diameter (mm)	Carton Size(mm)		
				L	W	H
TAPING	1,000	16,000	330	360	360	385