

BF471M

Order Code:

Version: A0 2016-03-29

# Features

Gas Discharge Tube

# ■ Small Size Design 4.2×5.0×5.0mm Current Handling

- Current Handling Capability 5,000A @ 8/20μs
- Low Capacitance and Insertion Loss
- Fast Response and Long Service Life
- Moisture sensitivity level: Level 1

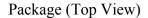
#### Exterior

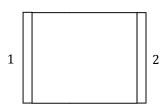


**SMD** 

#### Application information

xDSL

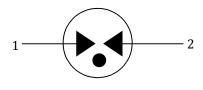




## Agency Approvals

Icon	Description		
RoHS	Compliance with 2011/65/EU		
HF	Compliance with IEC61249-2-21:2003		
<b>6</b> 9	Mean lead free		

#### Schematic Symbol



#### **Electrical Parameter**

DC Breakdown Voltage 1)2)	100V/s	376~564	
Impulse Spark-over Voltage	At 1kV/µs	for 99 % of measured values ≤ 850	V
impuise spark-over voitage	At 1kV/µs	Typical values of distribution ≤700	V
Immulas Disahawas Cumant 2)	8/20µs	F 000	A
Impulse Discharge Current 3)	10 operations [5x (+) & 5x (-)]	5,000	
Arc Voltage	At 1A	~15	V
Insulation Resistance	DC=100V	≥1	GΩ
Capacitance at 1MHz	Capacitance at 1MHz VDC=0.5V		pF
Weight		~0.5	g
Operating And Storage		-40-90	$^{\circ}\!\mathrm{C}$
Temperature		-40-90	
Marking		Without	

- 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



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## Gas Discharge Tube

#### Part Numbering System

BF 471 M (1) (2) (3)

(1)Bencent Gas Discharge Tube

(2) Series: DC Breakdown Voltage,

e.g.: 471=471×101=470V

(3) Tolerance of DC Breakdown Voltage, M=+-20%,

N=+-30%, the Specific tolerance is decided by the

table of "Electrical Parameter"

#### **Product Characteristics**

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

## **Environmental Reliability Characteristics**

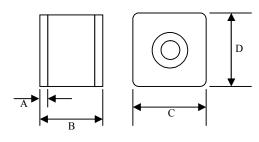
Testing items	Technical standards		
High Temperature Storage Test	Temperature: 90°C Time:2H		
Low Temperature Storage Test  Temperature: -40°C Time:2H			
Vibration	Frequency: 10-500Hz Amplitude: 0.15mm Time: 45min		
Resistance of soldering heat	Temperature: 260±5°C Time of dip soldering: 10s, 1time		

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

## Solderability test

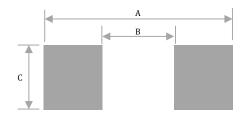
Solderability	Solder Pot Temperature:	245°C ±5°C
	Solder Dwell Time:	4-6 seconds

#### **Product Dimensions**



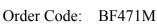
REF	mm inch			
A	$0.5 \pm 0.1$	$0.020 \pm 0.004$		
В	$4.2 \pm 0.3$	0.165±0.012		
С	$5.0 \pm 0.2$	0.197±0.008		
D	5.0±0.2	0.197±0.008		

## Recommended Soldering Pad



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REF	mm inch			
A	4.95	0.195		
В	3.0	0.118		
С	5.5	0.217		



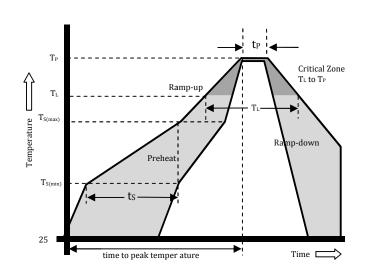


Gas Discharge Tube

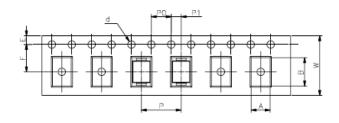
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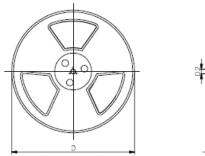
## Reflow Profile

	Reflow Condition	Pb-Free assembly	
	Temperature Min	150°C	
Pre	Temperature Max	200°C	
Heat	Time (min to max)	60 – 180 secs	
Average ramp up rate (Liquids) Tamp $(T_L)$ 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 Tem	perature (T <sub>P</sub> )	260+0/-5 °C	
Time within 5°C of actual peak Temperature (tp)		~10 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	5.3±0.1	$0.209 \pm 0.004$			
В	4.5±0.2 0.177±0.008				
d	Φ1.5±0.1	Φ0.059±0.004			
P0	$4.0 \pm 0.1$	$0.157 \pm 0.004$			
P1	2.0±0.1	$0.079 \pm 0.004$			
P	12.0±0.1 0.472±0.00				
Е	1.75±0.1	$0.069 \pm 0.004$			
F	7.5±0.1 0.295±0.004				
W	16.0±0.3	$0.630 \pm 0.012$			
D	Ф330.0	Ф13.0			
D1	Ф50Min Ф1.97Mir				
D2	Φ13±0.15	$0.512 \pm 0.006$			
W1	16.8±2.0 0.661±0.079				

Outline Reel (PCS)	Reel	Per Carton	Reel Diameter (mm)	Carton Size(mm)		
	(PCS) (PCS)	Reel Diameter (IIIII)	L	W	Н	
TAPING	1,000	16,000	330	360	360	380

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