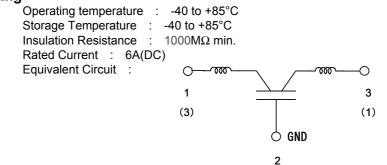


3 Style4 Features 5 Temperature Characteristics B3:±10% (-40~+85°C at 20°C) ⑥ Rated Voltage 2A :2A→100VDC、1H→50VDC ⑦ Capacitance $\overline{\mathbf{V}}$ Marked three digits system.(Ex. 22pF→220、22000pF→223) ⑧ Lead Type Q55 : Bulk Lead Type :Straight Lead Lead Length(I) 25.0 mm min. *See item 9. Q91 : Taping Lead Type :Straight Lead Q91 : 20.0 \pm 1.0 mm Dimension H: $Q92:16.5\!\pm\!1.0\;mm$ Q93 : $18.5 \pm 1.0 \text{ mm}$ See item 9. A : Ammo Pack / B : Bulk 9 Packaging Code

3. Rating



Others : See Table 1

Table 1

Customer Part Number	Murata Part Number	Capacitance	Temperature Characteristics		Withstanding Voltage	Unit Mass (Typical value)
	DSS1NB32A220Q55B DSS1NB32A220Q91A DSS1NB32A220Q92A DSS1NB32A220Q93A	22 pF±10%	±10%	100VDC	250VDC	0.45g
	DSS1NB32A330Q55B DSS1NB32A330Q91A DSS1NB32A330Q92A DSS1NB32A330Q93A	33 pF±10%				
	DSS1NB32A470Q55B DSS1NB32A470Q91A DSS1NB32A470Q92A DSS1NB32A470Q93A	47 pF±10%				

Reference Only P2/10

Customer Part Number	Murata Part Number	Capacitance	Temperature Characteristics	Rated Voltage	Withstanding Voltage	Unit Mass (Typical value)
	DSS1NB32A680Q55B DSS1NB32A680Q91A DSS1NB32A680Q92A	68 pF±10%			Value)	
	DSS1NB32A680Q93A DSS1NB32A101Q55B DSS1NB32A101Q91A DSS1NB32A101Q92A DSS1NB32A101Q93A	100 pF±10%				
	DSS1NB32A121Q55B DSS1NB32A121Q91A DSS1NB32A121Q92A DSS1NB32A121Q92A DSS1NB32A121Q93A	120 pF±10%				
	DSS1NB32A151Q55B DSS1NB32A151Q55B DSS1NB32A151Q91A DSS1NB32A151Q92A DSS1NB32A151Q93A	150 pF±10%				
	DSS1NB32A221Q55B DSS1NB32A221Q91A DSS1NB32A221Q92A	220 pF±10%				0.45g
	DSS1NB32A221Q93A DSS1NB32A271Q55B DSS1NB32A271Q91A DSS1NB32A271Q92A DSS1NB32A271Q93A	270 pF±10%		100VDC	C 250VDC	
	DSS1NB32A331Q55B DSS1NB32A331Q91A DSS1NB32A331Q92A	330 pF±10%				
	DSS1NB32A331Q93A DSS1NB32A471Q55B DSS1NB32A471Q91A DSS1NB32A471Q92A DSS1NB32A471Q92A	470 pF±10%	±10%			
	DSS1NB32A471Q93A DSS1NB32A681Q55B DSS1NB32A681Q91A DSS1NB32A681Q92A DSS1NB32A681Q93A	680 pF±10%				
	DSS1NB32A102Q55B DSS1NB32A102Q91A DSS1NB32A102Q92A DSS1NB32A102Q93A	1000 pF±10%				
	DSS1NB32A152Q55B DSS1NB32A152Q91A DSS1NB32A152Q92A DSS1NB32A152Q93A	1500 pF±10%				
	DSS1NB32A222Q55B DSS1NB32A222Q91A DSS1NB32A222Q92A DSS1NB32A222Q93A	2200 pF±10%				
	DSS1NB32A332Q55B DSS1NB32A332Q91A DSS1NB32A332Q92A DSS1NB32A332Q93A	3300 pF±10%				
	DSS1NB32A472Q55B DSS1NB32A472Q91A DSS1NB32A472Q92A DSS1NB32A472Q93A	4700 pF±10%				

Reference Only P3/10

Customer Part Number	Murata Part Number	Capacitance	Temperature Characteristics	Rated Voltage	Withstanding Voltage	Unit Mass (Typical value)
	DSS1NB32A682Q55B DSS1NB32A682Q91A DSS1NB32A682Q92A DSS1NB32A682Q93A	6800 pF±10%	±10%	100VDC	250VDC	0.45g
	DSS1NB32A103Q55B DSS1NB32A103Q91A DSS1NB32A103Q92A DSS1NB32A103Q93A	10000 pF ±10%				
	DSS1NB32A153Q55B DSS1NB32A153Q91A DSS1NB32A153Q92A DSS1NB32A153Q93A	15000 pF ±10%				
	DSS1NB32A223Q55B DSS1NB32A223Q91A DSS1NB32A223Q92A DSS1NB32A223Q93A	22000 pF±10%				
	DSS1NB31H333Q55B DSS1NB31H333Q91A DSS1NB31H333Q92A DSS1NB31H333Q93A	33000 pF±10%			125VDC	
	DSS1NB31H473Q55B DSS1NB31H473Q91A DSS1NB31H473Q92A DSS1NB31H473Q93A	47000 pF±10%				
	DSS1NB31H104Q55B DSS1NB31H104Q91A DSS1NB31H104Q92A DSS1NB31H104Q93A	100000pF ±10%				

4. Style and Dimension

See item 9.

5. Marking

Trade Mark : Marked as Capacitance : Marked three digits system. (Ex.221) Rated Voltage : Marked voltage value.(100V)

6. Testing Conditions

<Unless otherwise specified> Temperature : Ordinary Temperature 15 to 35°C Humidity : Ordinary Humidity 25 to 85 %(RH)

<In case of doubt> Perform a heat treatment at 150+0/-10°C for one hour and then set at room temperature for 24±2 hours. Temperature : 20 ± 2°C Humidity : 60 to 70 %(RH) Atmospheric Pressure : 86 to 106 kPa

7. Performance

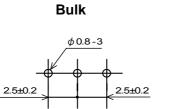
No.	Item	Specification	Test Method		
7.1	Appearance and Dimensions	Meet item 9.	Visual Inspection and measured with Slide Calipers.		
7.2	Marking	Marking is able to be read easily.	Visual Inspection.		
7.3	Capacitance and Tolerance	Meet item 3.	Table 2 Frequency Test Voltage Capacitance 1±0.1MHz 1±0.2Vrms 22pF~150pF 1±0.1kHz 1±0.2Vrms 220pF~100000pF		
	Insulation Resistance(I.R.)	Meet item 3.	Test Voltage : Rated Voltage Time : 1 minute through a suitable resistor $1M\Omega$.		

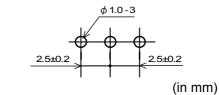
Reference Only P4/10

No.	Item	Spec	ification	Test Method		
7.5	Withstanding Voltage	Products shall not b	e damaged.	Test Voltage : 2.5 times for Rated VoltageTime : 1 to 5 secondsCharge Current : 10 mA max.It shall be applied between input / output terminaland ground terminal.Capacitance shall be measured at each step specifiedin Table 3 after reaching the thermal equilibrium.The capacitance change against the capacitance atstep 3 shall be calculated.Table3Step 12Step 12(°C)		
7.6	Temperature Characteristics	Meet item 3.				
7.7	Solderability	Along the circumfere shall be covered wi 75%.		Flux : Ethanol solution of rosin,25(wt)% (dipped for 5 to 10 seconds) Pre-heat : 150±10°C, 60~90 s Solder : Sn-3.0Ag-0.5Cu Solder Temperature 245±5°C Immersion Time : 2 ± 0.5 seconds Immersion Depth : 2 to 2.5 mm from the bottom of the body.		
7.8	Resistance to Soldering Heat①	Meet Table 4. <u>Table 4</u> <u>Appearance</u> Capacitance <u>Change</u> Withstanding <u>Voltage</u>	No damaged. within ± 30% No damaged.	Flux : Ethanol solution of rosin,25(wt)% (dipped for 5 to 10 seconds) Pre-heat : $150\pm10^{\circ}$ C, $60\sim90$ s Solder : Sn-3.0Ag-0.5Cu Solder Temperature : $270\pm5^{\circ}$ C Immersion Time : 3 ± 0.5 seconds Immersion Depth : 1.6 ± 0.7 mm from the bottom of the body. Then measured after exposure in the room		
	Resistance to Soldering Heat②			condition for 4 to 24hours. Soldering iron output: 30W Tip temperature : 370±10°C Soldering time : 5s(+0/-1s)		
7.9	Humidity	Meet Table 5. <u>Table 5</u> <u>Appearance</u> N Capacitance	lo damaged. within ± 30%	Temperature : 60°C Humidity : 90 to 95 %(RH) Time : 500 hours(+24-0 hours) Then measured after exposure in the room condition for 4 to 24hours.		
7.10	Humidity Life	Change Inslation Resistance	$10M\Omega$ min.	Temperature : 40 ± 2°C Humidity : 90 to 95 %(RH) Time : 500 hours(+24-0 hours) Applying Voltage : 1H/ Rated Voltage 50VDC 2A/ Rated Voltage 100VDC Then measured after exposure in the room condition for 4 to 24hours.		
7.11	Heat Life			Temperature : 85 ± 3°C Applying Voltage : 1H/ Rated Voltage 50VDC 2A/ Rated Voltage 100VDC Time : 500 hours(+24-0 hours) Then measured after exposure in the room condition for 4 to 24hours.		

Reference Only P5/10

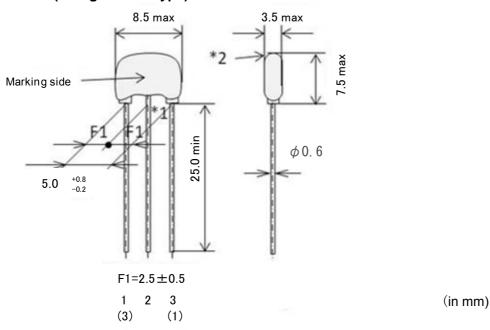
8. Mounting Hole





Taping

9. Style and Dimension 9.1 Bulk(Straight Lead Type) : Q55B



*1.Bottom of dielectric may be exposed.

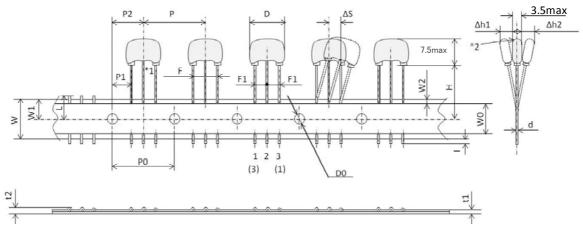
*2. There should not be the exposure of the ferrite bead if a hole is on the top of ferrite bead.

Reference Only

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9.2 Taping(Straight Lead Type) : Q9 A

(All symbols in the illustrations below are described in Table 4)



*1.Bottom of dielectric may be exposed.

*2. There should not be the exposure of the ferrite bead if a hole is on the top of ferrite bead.

Table 4

Code	Description		Dimensions	Remark
Ρ	Pitch of Component		12.7	Product Inclination ∆S Determines Crossing
P0	Pitch of Sprocket Hole		12.7±0.2	
P1	Length from Hole Center to Lead		3.85±0.7	
P2	Length from Hole Center to Component Center		6.35±1.3	
D	Width of Body		8.5 max.	
ΔS	Deviation along tape, Left or Right		0±1.0	
W	Carrier Tape Width		18.0±0.5	
W1	Position of Sprocket Hole		9.0 +0,-0.5	Tape Widthwise Shift
Ι	Protrusion Length		+0.5 ~ -1.0	
D0	Diameter of Sprocket Hole		φ 4.0±0.1	
d	Lead Diameter		φ 0.6	
t1	Total Tape Thickness		0.7±0.2	Includes Thickness of
t2	Total Thickness, Tape and Lead Wire		1.5 max.	Bonding Tape
∆h1	Deviation across Tape, front		1.0 max.	
∆h2	Deviation across Tape,rear		1.0 max.	
L	Portion to Cut in Case of Defect		11.0 +0,-1.0	
Wo	Hold Down Tape Width		12.0±0.5	
W2	Hold Down Tape Position		1.5±1.5	
		Q91	20.0±1.0	
н	Lead length between sprocket	Q92	16.5±1.0	
	hole and forming position	Q93	18.5±1.0	
F			5.0 +0.8,-0.2	
F1	Lead Spacing		2.5 +0.4,-0.2	

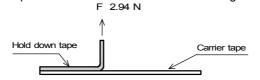
(in mm)

Reference Only



Spec No. JENF243F-0031C-01 10. Taping

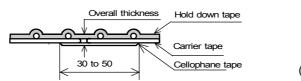
- (1) A maximum of 0.3% of the components quantity per Ammo pack may be missing without consecutive missing components.
- (2) The adhesive power of the tape shall have over 2.94N at the following condition.



(3) Splicing method of tape

1. Carrier tape

Carrier tape shall be spliced by cellophane tape. Overall thickness shall be less than 1.05 mm. <-----Direction of feed



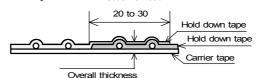
(in mm)

(in mm)

2. Hold down tape

Hold down tape shall be spliced with overlapping. Overall thickness shall be less than 1.05 mm.

Direction of feed



3. Both carrier tape and hold down tape

Both tapes shall be cut zigzag and spliced with splicing tape.

11. Packing

11.1 Packing quantity

The standard packing quantity is as follows.

(The packing quantity may be changed due to a fraction of order.)

Minimun Packing Form and Quantity

Terminal Configuration	A Unit Quantity	Packing Form	* Standard Quantity in a container (corrugated cardboard box)
Bulk	250 pcs.	In a plastic bag	5000pcs.
Taping	1500 pcs.	In an Ammo pack	7500pcs.

* A quantity in a container is depending on a quantity of an order.

11.2 Packing Form

(1) Bulk

<A plastic bag pack>

1. Products are packed into a plastic bag.

a plastic bag

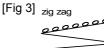
2. The plastic bags are put into a container (corrugated cardboard box) depending on a quantity of an order.

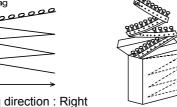
the plastic bag with products a containe

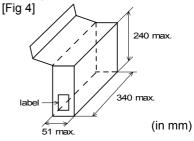
container label

Reference Only

- (2) Taping
- <An ammo pack>
- 1 .Folding the tape per 25 pitches, products are packed into an ammo package so that each product of each layer wound zigzag is put on top of one another. [Fig 3]
- 2. The dimensions of the ammo package are indicated in [Fig 4].
- 3. The ammo packages are put into a container (corrugated cardboard box) depending on a quantity of an order.
- 4. Not less than 3 consecutive of component shall be missing on both edge of tape.







The unloading direction : Right

The hold down tape : Upper

The product body : Left along the unloading direction

12. Marking on package

12.1 Unit Package

Bulk : Marked on a plastic bag. Taping : Marked on a label stuck on an ammo package.

Marking on a unit package consists of : Customer part number, MURATA part number, Inspection number(*1), RoHS marking (*2), Quantity, etc

<u>0000</u> $\times \times \times$ *1) « Expression of Inspection No. » (1)(2)(1) Factory Code : Year / Last digit of year First digit (2) Date Second digit : Month / Jan. to Sep. \rightarrow 1 to 9, Oct. to Dec. \rightarrow O,N,D Third, Fourth digit : Day (3) Serial No.

*2) « Expression of RoHS marking » ROHS – <u>Y</u> (<u>(</u>) (1)(2)

(1) RoHS regulation conformity parts.

(2) MURATA classification number

12.2 Container

Marking on the label stuck on a container consists of : Customer name Purchasing Order Number, Customer Part Number, MURATA part number, RoHS marking (*2), Quantity, etc

13. A Caution

13.1 Mounting holes

Mounting holes should be designed as specified in this specifications. Or different design from this specifications may cause cracks in ceramics which may lead to smoking / firing.

13.2 Caution for the product angle adjust work

Take care not to apply any mechanical stress to product body at the lead terminal bending process for product angle adjustment after insertion.

13.3 Limitation of Applications

Please contact us before using our products for the applications listed below which require especially high reliability for the prevention of defects which might directly cause damage to the third party's life, body or property.

- (1) Aircraft equipment
 - (7) Traffic signal equipment
- (2) Aerospace equipment (7) Disaster prevention / crime prevention equipment
- (3) Undersea equipment
- (9) Data-processing equipment (4) Power plant control equipment (10) Applications of similar complexity and /or reliability requirements
 - to the applications listed in the above
- (5) Medical equipment
- (6) Transportation equipment (vehicles, trains, ships, etc.)

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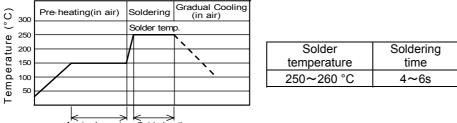
P9/10

14. Notice

14.1 Soldering

- (1) Use rosin-based flux. Do not use strong acidic flux with halide content exceeding 0.2(wt)% (chlorine conversion value).
 - Use Sn-3.0Ag-0.5Cu solder

(2) Standard flow soldering profile.



1 minutes min. Soldering time

- (3) Resistance to soldering iron goes in the following condition that tip temperature is 350 °C max. And soldering time is 5 s max.
- (4) Products and the leads should not be subjected to any mechanical stress during soldering process. (and also while subjected to the equivalent high temperature.)

14.2 Cleaning

- Products shall be cleaned on following conditions.
- (1) Cleaning Temperature: 60°C max.(40°C max. for Isopropyl alcohol).
- (2) Ultrasonic cleaning shall comply with the following conditions, avoiding the resonance phenomenon at the mounted products and P.C.B.

Power: 20W / I max.

 $Frequency: 28 kHz \sim 40 kHz$

Time : 5 minutes max.

- (3) Cleaning agent
 - 1. alcohol cleaning agents.
 - Isopropyl alcohol (IPA)
 - 2. Aqueous cleaning agent
 - Pine Alpha ST-100S
- (4) Ensure that residual flux and residual cleaning agent is completely removed.
 - Products should be thoroughly dried after aqueous agent has been removed with de-ionized water.
- (5) For other cleaning methods, please contact Murata engineering.

14.3 Operating Environment

- (1) Do not use products in corrosive gases such as chlorine gas, acid or sulfide gas.
- (2) Do not use products in the environment where water, oil or organic solvents may adhere to products.
- (3) Do not adhere any resin to products, coat nor mold products with any resin (including adhesive)to prevent mechanical and chemical stress on products.

14.4 Storage and handling requirements.

- (1) Storage period
 - Use the products within 12 months after delivered.
 - Solderability should be checked if this period is exceeded.
- (2) Storage environment condition
 - To prevent products quality deterioration, stored conditions should be controlled as follows ;
 - 1. Temperature : -10 to 40 degrees centigrade
 - 2. Humidity : 15 to 85% relative humidity
 - 3. Products should be stored without sudden changes in temperature and humidity.
 - Don't keep products in corrosive gases such as sulfur, chlorine gas or acid, or it may cause oxidization of lead terminals resulting in poor solderability.
 - 4. Products should be stored on the palette for the prevention of the influence from humidity, dust and so on.

5. Products should be stored in the warehouse without heat shock, vibration, direct sunlight and so on. (3) Handling Conditions

Care should be taken when transporting or handling product to avoid excessive vibration or mechanical shock.



15. **A**Note

- (1)Please make sure that your product has been evaluated in view of your specifications with our product being mounted to your product.
- (2)You are requested not to use our product deviating from the reference specifications.
- (3)The contents of this reference specification are subject to change without advance notice. Please approve our product specifications or transact the approval sheet for product specifications before ordering.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Murata:

DSS6NB32A220Q55B DS	S6NB32A221T51B	DSS6NB32A101Q55E	DSS6NB32A471T51B	DSS6NB32A271T51B
DSS6NB32A151Q55B DSS	6NB32A101T51B	DSS6NB32A220T51B	DSS6NB32A102T51B	DSS6NB32A470T51B
DSS6NB32A471Q92A DSS	6NB32A271Q55B	DSS6NB32A471Q55B	DSS6NB32A102Q93A	DSS6NB32A221Q93A
DSS6NB32A151T51B DSS6	6NB32A102Q55B	DSS6NB32A330Q55B	DSS6NB32A221Q55B	DSS6NB32A470Q55B
DSS6NB32A330T51B DSS6	6NB32A101Q54B	DSS6NB32A101Q91A	DSS6NB32A101Q93A	DSS6NB32A101T41B
DSS6NB32A101U31A DSS6	6NB32A102Q54B	DSS6NB32A102Q56B	DSS6NB32A102Q91A	DSS6NB32A102Q92A
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DSS6NB32A151Q93A DSS	6NB32A151U31A	DSS6NB32A220Q54B	DSS6NB32A220Q91A	DSS6NB32A220Q93A
DSS6NB32A220U31A DSS6	6NB32A221Q91A	DSS6NB32A221Q92A	DSS6NB32A221U31A	DSS6NB32A271Q54B
DSS6NB32A271Q56B DSS	6NB32A271Q91A	DSS6NB32A271Q92A	DSS6NB32A271Q93A	DSS6NB32A271U31A
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DSS1NB32A331Q91A DSS	1NB32A681Q91A	DSS1NB32A471Q91A	DSS1NB32A221Q91A	DSS1NB32A222Q93A