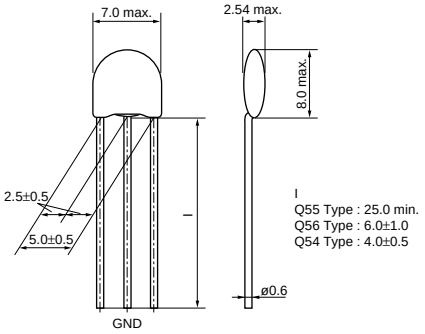
Jameco Part Number 1853937

Lead EMIFIL® Capacitor Type for General Small Type

DSN6/DSS6 Series

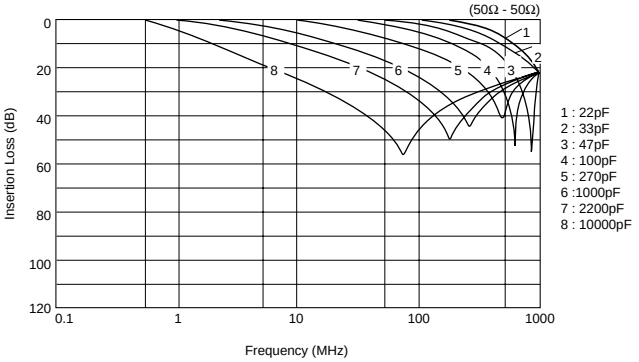
DSN6 Series

■ Dimension



(in mm)

■ IL of Main Items

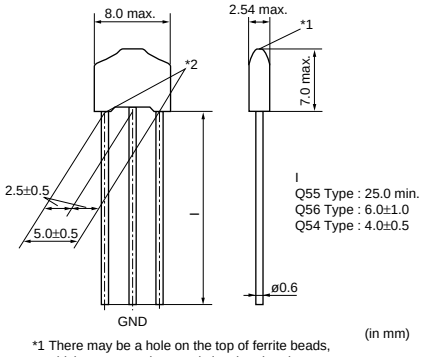


■ Rated Value (☐: lead type/packaging code)

Part Number	Capacitance	Rated Current	Rated Voltage	Operating Temperature Range
DSN6NC51H220☐	22pF+20%-20%	6A	50Vdc	-25°C to +85°C
DSN6NC51H330☐	33pF+20%-20%	6A	50Vdc	-25°C to +85°C
DSN6NC51H470☐	47pF+20%-20%	6A	50Vdc	-25°C to +85°C
DSN6NC51H101☐	100pF+20%-20%	6A	50Vdc	-25°C to +85°C
DSN6NC51H271☐	270pF+20%-20%	6A	50Vdc	-25°C to +85°C
DSN6NC51H102☐	1000pF+20%-20%	6A	50Vdc	-25°C to +85°C
DSN6NC51H222☐	2200pF+20%-20%	6A	50Vdc	-25°C to +85°C
DSN6NZ81H103☐	10000pF+80%-20%	6A	50Vdc	-25°C to +85°C

DSS6 Series Straight Type

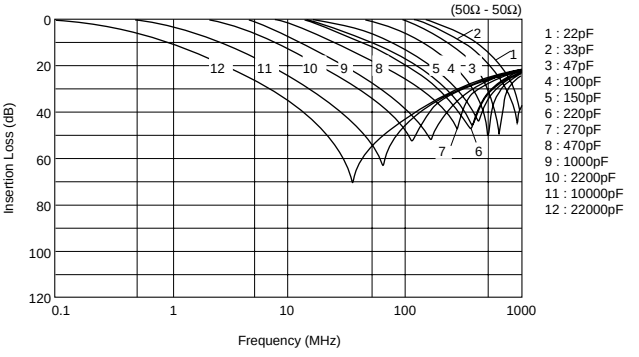
■ Dimension



(in mm)

*1 There may be a hole on the top of ferrite beads, which cause no characteristics deterioration.
*2 Bottom of the ferrite beads may not be level with each other.

■ IL of Main Items



Continued on the following page.

● This data sheet is applied for Lead EMIFIL® Capacitor Type used for General Electronics equipment for your design.

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Murata Manufacturing Co., Ltd.
http://www.murata.com/

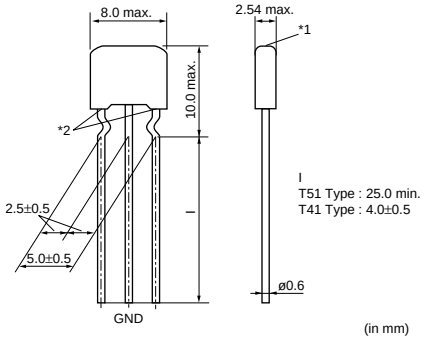
Continued from the preceding page.

■ Rated Value (☐: lead type/packaging code)

Part Number	Capacitance	Rated Current	Rated Voltage	Operating Temperature Range
DSS6NC52A220☐	22pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NC52A330☐	33pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NC52A470☐	47pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NC52A101☐	100pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NC52A151☐	150pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NC52A221☐	220pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NC52A271☐	270pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NC52A471☐	470pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NC52A102☐	1000pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NE52A222☐	2200pF+80%-20%	6A	100Vdc	-25°C to +85°C
DSS6NZ82A103☐	10000pF+30%-30%	6A	100Vdc	-25°C to +85°C
DSS6NF31C223☐	22000pF+80%-20%	6A	16Vdc	-25°C to +85°C

DSS6 Series Incrimp Type

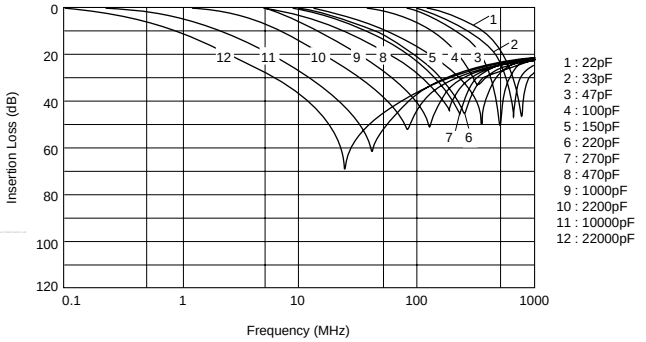
■ Dimension



(in mm)

*1 There may be a hole on the top of ferrite beads, which cause no characteristics deterioration.
*2 Bottom of the ferrite beads may not be level with each other.

■ IL of Main Items



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Part Number	Capacitance	Rated Current	Rated Voltage	Operating Temperature Range
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DSS6NC52A330☐	33pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NC52A470☐	47pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NC52A101☐	100pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NC52A151☐	150pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NC52A221☐	220pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NC52A271☐	270pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NC52A471☐	470pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NC52A102☐	1000pF+20%-20%	6A	100Vdc	-25°C to +85°C
DSS6NE52A222☐	2200pF+80%-20%	6A	100Vdc	-25°C to +85°C
DSS6NZ82A103☐	10000pF+30%-30%	6A	100Vdc	-25°C to +85°C

Continued on the following page.

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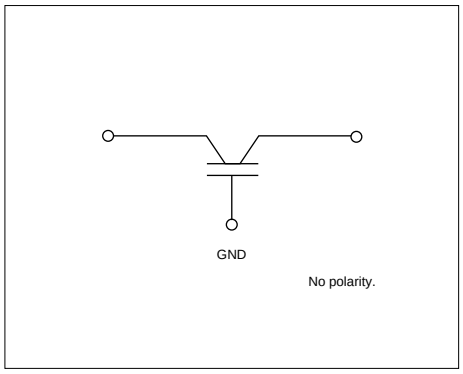
Part Number	Capacitance	Rated Current	Rated Voltage	Operating Temperature Range
DSS6NF31C223□	22000pF+80%-20%	6A	16Vdc	-25°C to +85°C

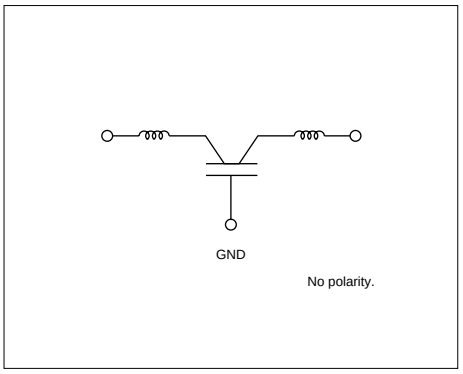
■ Equivalent circuit

DSN6 Series



■ Equivalent circuit

DSS6 Series



■ Packaging

● Minimum Quantity

Part Number	Minimum Order Quantity (order in sets only) (Pcs.)		
	Ammo Pack	ø320mm Paper reel	Bulk (Bag)
DS□6 Series	2000	—	250 **Q55/T51** 500 **Q54/Q56/T41**

● Lead Type/Packaging

Code	Lead Type	Lead Length* (in mm)	Packaging	Series
Q55B	Straight	25.0 min.	Bulk	All series
Q50B		4.0±0.5		**DST9N/H**
Q52B		6.0±1.0		**DST9N**
Q54B		4.0±0.5		**DSN6/9**, **DSS6/9**
Q56B		6.0±1.0		
T41B	Incrimp	4.0±0.5		**DSS6N**
T51B		25.0 min.		
Q91J	Straight	20.0±1.0	Paper Reel (ø320mm)	**DSS9N/H**
Q92J		16.5±1.0		
Q93J		18.5±1.0		
Q91A		20.0±1.0	Ammo Pack	**DS□6**, **DSN9N/H**
Q92A		16.5±1.0		All series except **DSS9N/H**
Q93A		18.5±1.0		
U21A	Incrimp	16.5±1.0		**DSS6N**
U31A		18.5±1.0		

***Lead Distance between Reference and Bottom Planes except Bulk.

■ ⚠Caution (Rating)

Do not use products beyond the rated current and rated voltage as this may create excessive heat and deteriorate the insulation resistance.

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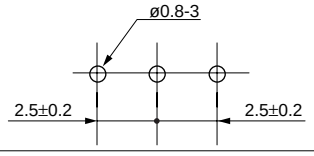
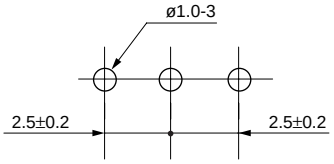
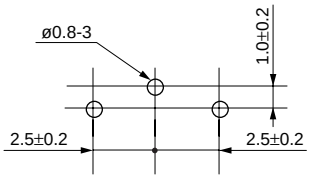
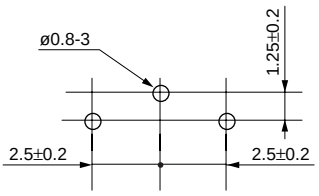
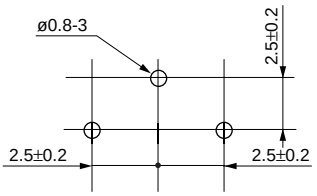
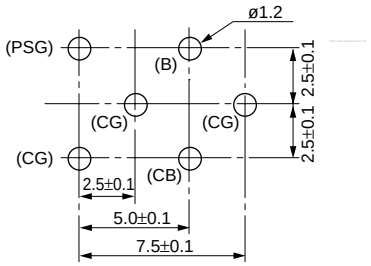
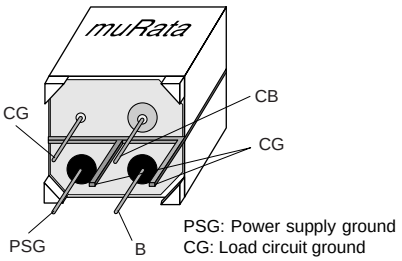
1. Mounting Hole

Mounting holes should be designed as specified below.

Part number	Bulk type (in mm)	Taping type (in mm)
DSN6 **DSS6** **VFR3V** **VFS6V**		
DSN9 **DSN9H**		
DST9 **DST9H**		
DSS9 **DSS9H** **VFS9V**		
BNX00□/01□	Component Side 	TERMINAL LAYOUT (Bottom figure) 

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2. Using The Block Type EMIFIL® Effectively

(1) How to use effectively

This product effectively prevents undesired radiation and external noise from going out / entering the circuit by grounding the high frequency components which cause noise problems. Therefore, grounding conditions may affect the performance of the filter and attention should be paid to the following for effective use.

(a) Design maximized grounding area in the P.C. board, and grounding pattern for all the grounding terminals of the product to be connected. (Please follow the specified recommendations.)

(b) Minimize the distance between ground of the P.C. board and the ground plate of the product. (Recommended unsing the through hole connection between grounding area both of component side and bottom side.)

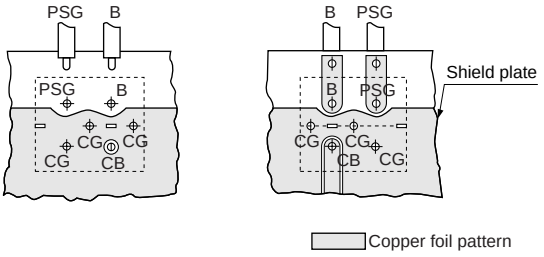
(c) Insert the terminals into the holes on P.C. board completely.

(d) Don't connect PSG terminal with CG terminal directly. (See the item 1. Terminal Layout)

P. C. BOARD PATTERNS

Use a bilateral P.C. board. Insert the BNX into the P.C.board until the root of the terminal is secured, then solder.

(1) COMPONENT SIDE VIEW (2) BOTTOM VIEW



(2) Self-heating

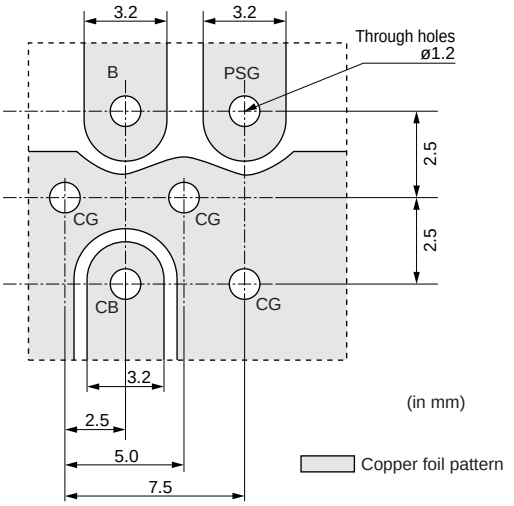
Though this product has a large rated current, localized selfheating may be caused depending on soldering conditions. To avoid this, attention should be paid to the following:

(a) Use P.C. board with our recommendation on hole diameter / land pattern dimensions, mentioned in the right hand drawing, especially for 4 terminals which pass current.

(b) Solder the terminals to the P.C. board with soldercover area at least 90%. Otherwise, excess self-heating at connection between terminals and P.C. board may lead to smoke and / or fire of the product even when operating at rated current.

(c) After installing this product in your product, please make sure the self-heating is within the rated current recommended.

Recommendation land pattern



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3. Using EMIGUARD® effectively

(1) Terminal (with mark) should be properly connected to the line of incoming electrostatic surge. (There is polarity.) Otherwise, no effect in ESD suppression can be expected (VFR3V).

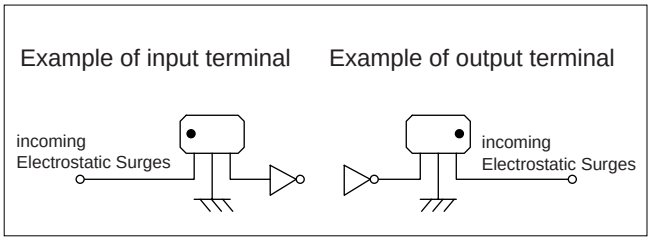
(2) Products should be used at rated voltage or less and rated current or less.

(3) Products should not be applied for the absorption of surges which have large energy (ex. induced lightning surges, switching surges) because it is designed for the absorption of electrostatic surges (VFR3V).

(4) Electrostatic test should be done on the following conditions (VFR3V).

$n \cdot [C / R \cdot V^2]^2 < 8.0 \times 10^5$

n: Times applied
C: Charging Capacitance (pF)
V: Testing Voltage (kV)
R: Charging Resistance (Ω)



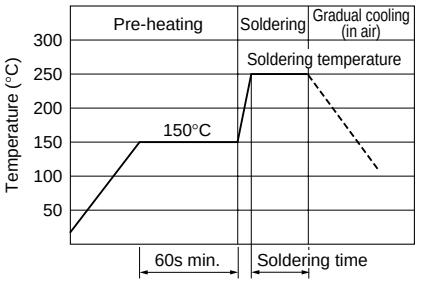
4. Soldering

(1) Solder: H60A, H63A solder (JIS Z 3238)
In case of lead-free solder, use Sn-3.0Ag-0.5Cu solder.

(2) Use Rosin-based flux. Do not use strong acidic flux with halide content exceeding 0.2wt% (chlorine conversion value).

(3) Products and the leads should not be subjected to any mechanical stress during the soldering process, or while subjected to the equivalent high temperatures.

(4) Standard flow soldering profile



Solder	Soldering temperature	Soldering time
Sn/Pb=60/40, Sn/Pb=63/37	240 to 260˚C	5s max.
Sn-3.0Ag-0.5Cu solder	250 to 260˚C	4 to 6s

5. Cleaning Conditions

Do not clean VFR3V, PLT09H and VFS6V series.
Clean other parts in the following conditions.

(1) Cleaning temperature should be limited to 60°C max. (40°C max for alcohol type cleaner).

(2) Ultrasonic cleaning should comply with the following conditions, avoiding the resonance phenomenon at the mounted products and P.C.B.
Power: 20 W / l max. Frequency: 28 to 40kHz
Time: 5 min. max.

(3) Cleaner
(a) Alcohol type cleaner
Isopropyl alcohol (IPA)
(b) Aqueous agent (PLT series cannot be cleaned)
PINE ALPHA ST-100S

(4) There should be no residual flux or residual cleaner left after cleaning.
In the case of using aqueous agent, products should be dried completely after rinsing with de-ionized water in order to remove the cleaner.

(5) The surface of products may become dirty after cleaning, but there is no deterioration on mechanical, electrical characteristics and reliability.

(6) Other cleaning: Please contact us.

■ Minimum Quantity

Part Number	Minimum Order Quantity (order in sets only) (Pcs.)		
	Ammo Pack	ø320mm Paper reel	Bulk (Bag)
VFR3V Series	2000	—	250
DS□6/VFS6V Series	2000	—	250 **Q55/T51** 500 **Q54/Q56/T41**
DSN9/9H Series	2000	—	250 **Q55** 500 **Q54/Q56**
DST9 Series	1000	—	200 **Q55** 250 **Q50/Q52**
DSS9 Series	—	800	200 **Q55** 500 **Q54/Q56**
VFS9V Series	—	800	200

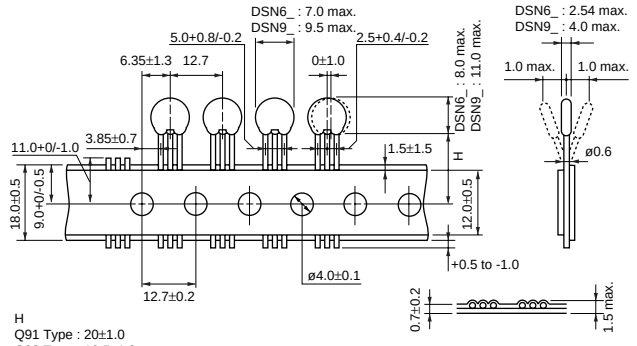
■ Lead Type Code

Lead Type code		Lead length (H)
Straight Type	Incrimp Type	
Q91	-	20.0±1.0mm
Q92	**U21**	16.5±1.0mm
Q93	**U31**	18.5±1.0mm

■ Taping Dimensions

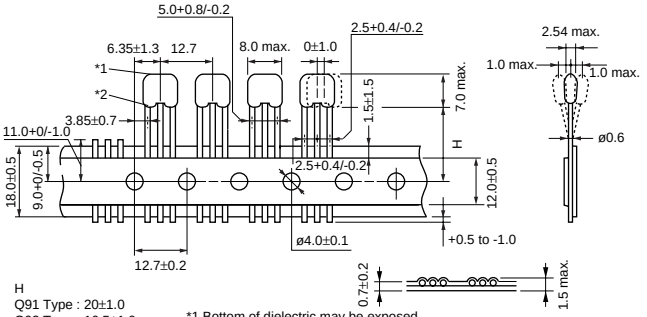
DSN6_Q91/Q92/Q93

DSN9_Q91/Q92/Q93



H
Q91 Type : 20±1.0
Q92 Type : 16.5±1.0
Q93 Type : 18.5±1.0

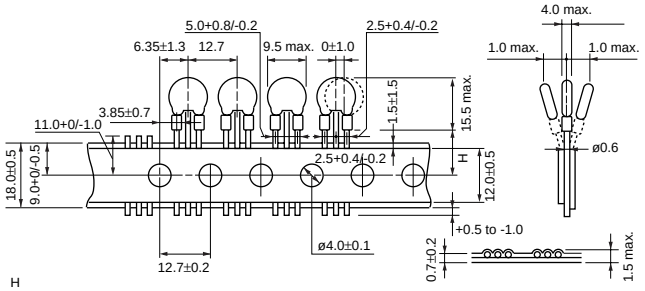
DSS6_Q91/Q92/Q93



H
Q91 Type : 20±1.0
Q92 Type : 16.5±1.0
Q93 Type : 18.5±1.0

*1 Bottom of dielectric may be exposed.
*2 If a hole is on the top of the ferrite bead, the bead should not be exposed.

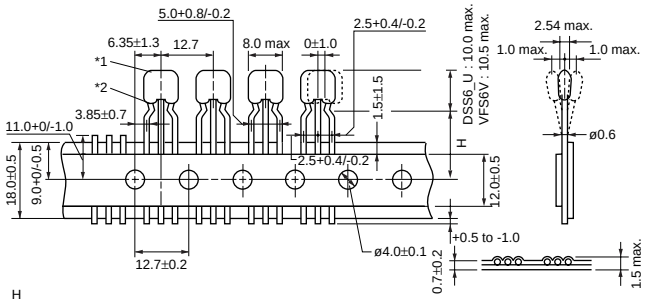
DST9_Q92/Q93



H
Q92 Type : 16.5±1.0
Q93 Type : 18.5±1.0

DSS6_U21/U31

VFS6V_U31

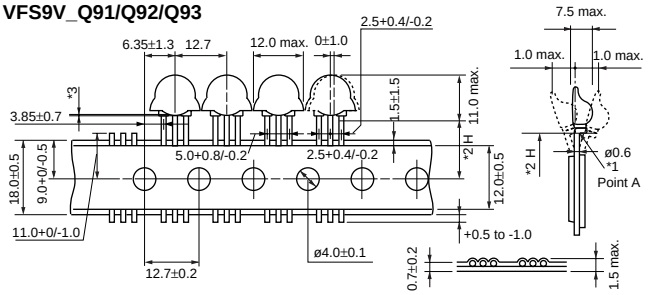


H
U21 Type : 16.5±1.0
U31 Type : 18.5±1.0

*1 Bottom of dielectric may be exposed.
*2 If a hole is on the top of the ferrite bead, the bead should not be exposed.

DSS9_Q91/Q92/Q93

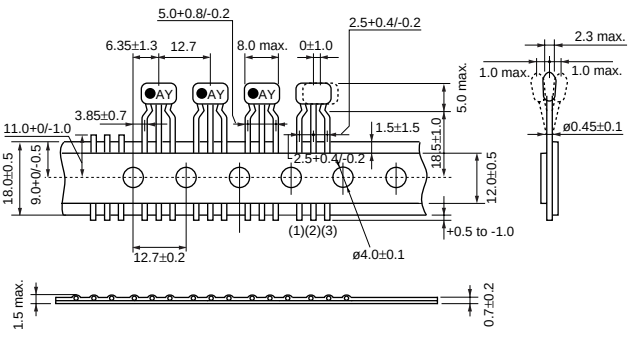
VFS9V_Q91/Q92/Q93



H
Q91 Type : 20±1.0
Q92 Type : 16.5±1.0
Q93 Type : 18.5±1.0

*1 Coating extending on leads does not exceed the start of bend. (Point A)
Exposed electrodes are covered with solder.
*2 H: to be measured from the forming point A.
*3 The deviation between two ferrite beads should be less than 1.2mm.

VFR3V_U31



(in mm)

● Part Numbering

Disc Type EMIFIL®

(Part Number)

DS	S	9	H	B3	2E	271	Q55	B
❶	❷	❸	❹	❺	❻	❼	❽	❾

❶Product ID

Product ID	
DS	Three-terminals Capacitor

❷Structure

Code	Structure
N	No Ferrite Beads Type
S	Built-in Ferrite Beads Type
T	with Ferrite Beads Type

❸Style

Code	Style
6	Diameter 8.0mm max.
9	Diameter 12.0mm max.

❹Category

Code	Category
N	for General Use
H	for Heavy-duty

❺Temperature Characteristics

Code	Capacitance Change
B3/P3	±10% (Temperature Range: -25˚C to +85˚C)
C5	±22% (Temperature Range: -25˚C to +85˚C)
T3	+20/-30% (Temperature Range: -25˚C to +85˚C)
E5	+22/-56% (Temperature Range: -25˚C to +85˚C)
F3	+30/-80% (Temperature Range: -25˚C to +85˚C)
Z8	+30/-85% (Temperature Range: -10˚C to +60˚C)

❻Rated Voltage

Code	Rated Voltage
1C	16V
1H	50V
2A	100V
2E	250V

❼Capacitance

Expressed by three figures. The unit is in pico-farad (pF). The first and second figures are significant digits, and the third figure expresses the number of zeros which follow the two figures.

❽Lead Type/❾Packaging

Code	Lead Type	Lead Length* (in mm)	Packaging	Series
Q55B	Straight	25.0 min.	Bulk	All series
Q50B		4.0±0.5		**DST9N/H**
Q52B		6.0±1.0		**DST9N**
Q54B		4.0±0.5		**DSN6N/9N**, **DSS6N/9N**, **DSS9H**
Q56B		6.0±1.0		
T41B	Incrimp	4.0±0.5		**DSS6N**
T51B		25.0 min.		
Q91J	Straight	20.0±1.0	Paper Reel (ø320mm)	**DSS9N/H**
Q92J		16.5±1.0		
Q93J		18.5±1.0		
Q91A		20.0±1.0	Ammo Pack	**DS□6N**, **DSN9N/H**
Q92A		16.5±1.0		All series except **DSS9N/H**
Q93A		18.5±1.0		
U21A	Incrimp	16.5±1.0		**DSS6N**
U31A		18.5±1.0		

*****Lead Distance between Reference and Bottom Planes except Bulk.