

## Ceramic Disc Capacitors Class 1, 100 V (DC) Narrow Tolerance

### FEATURES

- Low losses
- High stability
- High capacitance in small size
- Kinked (preferred) or straight leads.
- Lead (Pb)-free available.



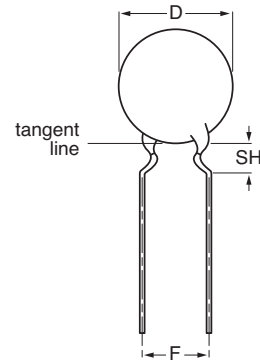
### APPLICATIONS

- Bypassing
- Coupling
- Resonant circuit.

### DESIGN

The capacitors consist of a ceramic disc both sides of which are silver-plated. Connection leads are made of tinned copper having a diameter of 0.6 mm.

The capacitors have inward kinked leads with a spacing of 5 mm (0.200") and a lead length from 4 to 30 mm. Encapsulation is made of phenolic resin.



Capacitors with 5 mm (0.20") lead spacing.

### CAPACITANCE RANGE:

Class 1, at 1 MHz, 1.2 V (RMS); 1.5 to 560 pF  
1 kHz,  $1 \pm 0.2V$  (RMS) for capacitance values higher than 1000 pF.

### TEMPERATURE COEFFICIENTS:

Class 1 NP0; P100; N150; N750; N1500

### RATED DC VOLTAGE:

100 V

### SECTIONAL SPECIFICATIONS:

Class 1 IEC 60 384-8,  
EIA 198

### DIELECTRIC STRENGTH:

250 % of rated voltage

### CLIMATIC CATEGORY:

Class 1 55/125/56

### INSULATION RESISTANCE AT 100V (DC):

$\geq 10\,000\ M\Omega$

### OPERATING TEMPERATURE RANGE:

Class 1 - 55 to + 125 °C

### TOLERANCE ON CAPACITANCE:

$\pm 0.25\ pF$ ;  $\pm 0.5\ pF$ ;  $\pm 2\ \%$

### DISSIPATION FACTOR:

Class 1,  $C \leq 30\ pF$ ;  $\leq 20 \times (10/C + 0.7) \times 10^{-4}$  maximum

Class 1,  $C > 30\ pF$ ;  $\leq 20 \times 10^{-4}$

### MARKING

Marking indicates capacitance value and tolerance in accordance with "EIA 198".

The capacitors meet the essential requirements of "EIA 198". Unless stated otherwise all electrical values apply at an ambient temperature of  $25 \pm 3\ ^\circ C$ , at normal atmospheric conditions

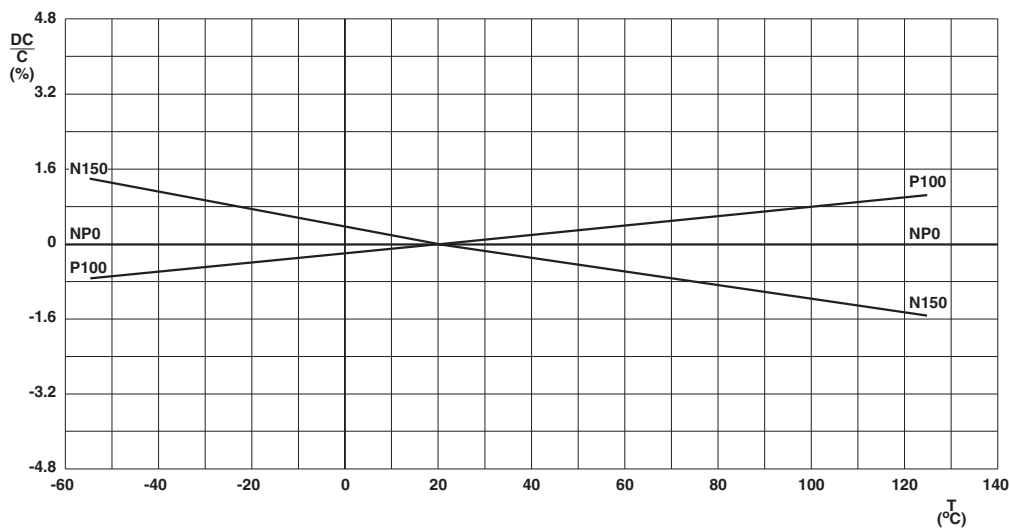
# LV 100 V Narrow Tolerance

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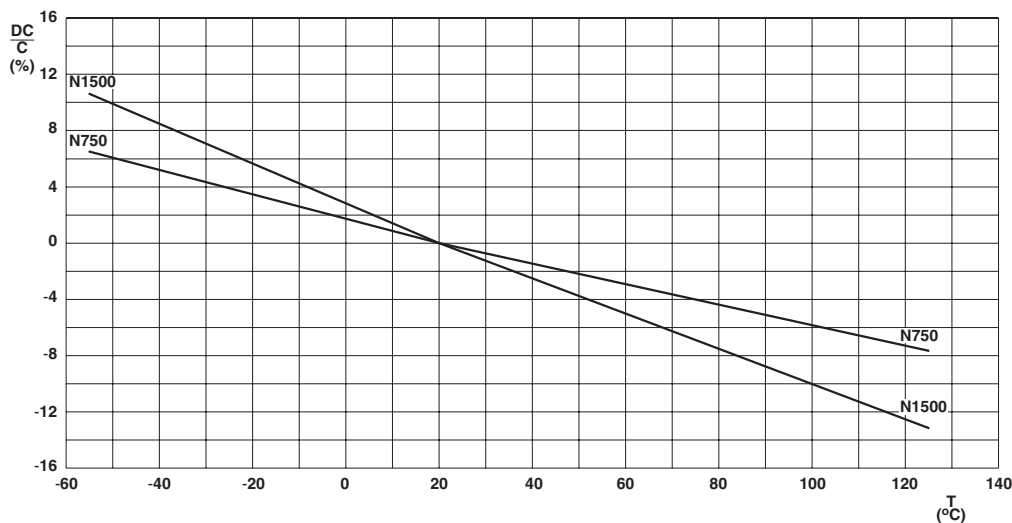
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TEMPERATURE COEFFICIENT IN ACCORDANCE WITH "RS198"		
C = 0.0	0 = - 1	G = ± 30
M = 1.0	1 = - 10	H = ± 60
P = 1.5	2 = - 100	J = ± 120
R = 2.2	3 = - 1000	K = ± 250
S = 3.3	5 = + 1	L = ± 500
T = 4.7	6 = + 10	M = ± 1000
U = 7.5	7 = + 100	N = ± 2500
-	8 = + 1000	-



Capacitance change as a function of temperature



Capacitance change as a function of temperature



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ORDERING INFORMATION, CLASS 1, 100 V (DC), KINKED									
C (pF)	TOL. (%)	D <sub>max</sub> (mm)	LEAD SPACING <sup>(2)</sup> F (mm)	SH <sup>(3)</sup> (mm)	CLEAR TEXT CODE  13 <sup>th</sup> DIGIT: T = REEL; U = AMMO; 3 = BULK 16 <sup>th</sup> DIGIT: R = RoHS COMPLIANT	PACKAGING CODE 8 <sup>th</sup> AND 9 <sup>th</sup> DIGIT <sup>(4)</sup>			CATALOG NUMBER <sup>(5)</sup>  3 <sup>rd</sup> DIGIT: 5 = STANDARD 8 = RoHS COMPLIANT
						REEL	AMMO	BULK	
<b>CLASS 1 P100</b>									
1.5	± 0.25 pF	5.0	5.0	4.0	D159C20M7GH6.J5.	06	08	10	22.2 596 ..144
2.2					D229C20M7GH6.J5.				22.2 596 ..244
3.3					D339C20M7GH6.J5.				22.2 596 ..344
4.7					D479C20M7GH6.J5.				22.2 596 ..444
6.8					D689C20M7GH6.J5.				22.2 596 ..644
10	± 2 %	6.5	5.0	4.0	D100G25M7GH6.J5.	06	08	10	22.2 596 ..004
15		7.5			D150G29M7GH6.J5.				22.2 596 ..104
22		8.5			D220G33M7GH6.J5.				22.2 596 ..204
33		10.0			D330G39M7GH6.J5.				22.2 596 ..304
47		11.0			D470G43M7GH6.J5.				22.2 596 ..404
<b>CLASS 1 NP0</b>									
1.5	± 0.25 pF	5.0	5.0	4.0	D159C20C0KH6.J5.	06	08	10	22.2 506 ..144
1.8					D189C20C0KH6.J5.				22.2 506 ..194
2.2					D229C20C0JH6.J5.				22.2 506 ..244
3.3					D339C20C0JH6.J5.				22.2 506 ..344
4.7					D479C20C0HH6.J5.				22.2 506 ..444
6.8	± 2 %	5.0	5.0	4.0	D689C20C0HH6.J5.	06	08	10	22.2 506 ..644
10					D100G20C0GH6.J5.				22.2 506 ..004
15					D150G20C0GH6.J5.				22.2 506 ..104
22					D220G20C0GH6.J5.				22.2 506 ..204
33					D330G20C0GH6.J5.				22.2 506 ..304
47	± 2 %	6.5	5.0	4.0	D470G25C0GH6.J5.	06	08	10	22.2 506 ..404
68		D680G25C0GH6.J5.			22.2 506 ..604				
100		7.5			D101G29C0GH6.J5.				22.2 506 ..014
150		8.5			D151G33C0GH6.J5.				22.2 506 ..114
220		11.0			D221G43C0GH6.J5.				22.2 506 ..214
<b>CLASS 1 N150</b>									
3.9	± 0.25 pF	5.0	5.0	4.0	D399C20P2JH6.J5.	06	08	10	22.2 516 ..394
4.7					D479C20P2HH6.J5.				22.2516 ..444
6.8					D689C20P2HH6.J5.				22.2 516 ..644
10	± 2 %	5.0	5.0	4.0	D100G20P2GH6.J5.	06	08	10	22.2 516 ..004
15					D150G20P2GH6.J5.				22.2 516 ..104
22					D220G20P2GH6.J5.				22.2 516 ..204
33					D330G20P2GH6.J5.				22.2 516 ..304
47					± 2 %				6.5
68	D680G25P2GH6.J5.	22.2 516 ..604							
100	7.5	D101G29P2GH6.J5.	22.2 516 ..014						
150	10.0	D151G39P2GH6.J5.	22.2 516 ..114						
220	11.0	D221G43P2GH6.J5.	22.2 516 ..214						

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ORDERING INFORMATION, CLASS 1, 100 V (DC), KINKED									
C (pF)	TOL. (%)	D <sub>max</sub> (mm)	LEAD SPACING <sup>(2)</sup> F (mm)	SH <sup>(3)</sup> (mm)	CLEAR TEXT CODE	PACKAGING CODE 8 <sup>th</sup> AND 9 <sup>th</sup> DIGIT <sup>(4)</sup>			CATALOG NUMBER <sup>(5)</sup> 3 <sup>rd</sup> DIGIT: 5 = STANDARD 8 = RoHS COMPLIANT
					13 <sup>th</sup> DIGIT: T = REEL; U = AMMO; 3 = BULK 16 <sup>th</sup> DIGIT: R = RoHS COMPLIANT	REEL	AMMO	BULK	
<b>CLASS 1 N750</b>									
6.8	± 0.25 pF	5.0	5.0	4.0	D689C20U2JH6.J5.	06	08	10	22.2 556 ..644
10	± 2 %				D100G20U2JH6.J5.				22.2 556 ..004
15					D150G20U2JH6.J5.				22.2 556 ..104
22					D220G20U2JH6.J5.				22.2 556 ..204
33					D330G20U2JH6.J5.				22.2 556 ..304
47					D470G20U2JH6.J5.				22.2 556 ..404
68					D680G25U2JH6.J5.				22.2 556 ..604
100					D101G29U2JH6.J5.				22.2 556 ..014
150					D151G33U2JH6.J5.				22.2 556 ..114
220					D221G39U2JH6.J5.				22.2 556 ..214
330		D331G47U2JH6.J5.	22.2 556 ..314						
<b>CLASS 1 N1500</b>									
18	± 2 %	5.0	5.0	4.0	D180G20P3KH6.J5.	06	08	10	22.2 586 ..154
22					D220G20P3KH6.J5.				22.2 586 ..204
33					D330G20P3KH6.J5.				22.2 586 ..304
47					D470G20P3KH6.J5.				22.2 586 ..404
68					D680G20P3KH6.J5.				22.2 586 ..604
100					D101G25P3KH6.J5.				22.2 586 ..014
150					D151G29P3KH6.J5.				22.2 586 ..114
220					D221G33P3KH6.J5.				22.2 586 ..214
330					D331G39P3KH6.J5.				22.2 586 ..314
470					D471G43P3KH6.J5.				22.2 586 ..414
560					D561G47P3KH6.J5.				22.2 586 ..514

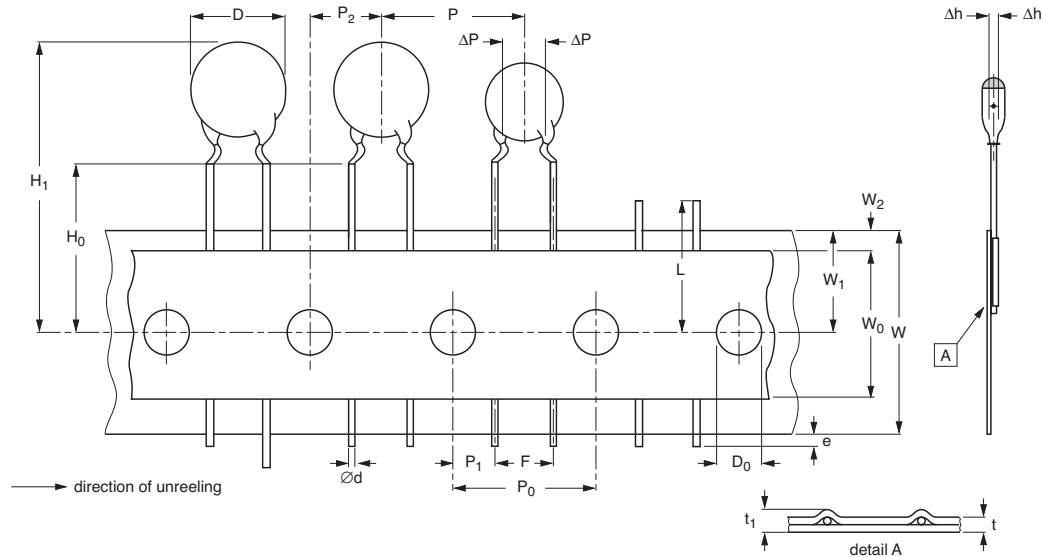
## Notes

- Maximum thickness 4.0 mm.
- 2.5 mm lead spacing is available on request. Straight leads leadstyle L2. Digit 14 (L) and 15 (2) Clear Text Code
- SH = seated height.
- Packaging codes refer to inward kinked leads. Other styles available on request.
- 3<sup>rd</sup> digit to complete RoHS catalog number. 8<sup>th</sup> and 9<sup>th</sup> digit of the catalog number to be completed with the packaging code.

PACKAGING				
D <sub>max</sub> (mm)	SIZE CODE	PACKAGING QUANTITIES		
		BULK	REEL	AMMO
5.0 (0.20")	20	1000	2500	2000
6.5 (0.25")	25			
7.5 (0.29")	29			
8.5 (0.33")	33			
10.0 (0.39")	39			
11.0 (0.43")	43			
12.0 (0.47")	47			

## Note

- The capacitors are supplied in bulk packaging (cardboard boxes), in tape on reel or in ammpack.



Kinked capacitors on tape, lead spacing 5.0 mm (0.2").

#### DIMENSIONS OF TAPE

SYMBOL	PARAMETER	DIMENSIONS (mm)	
		NOMINAL	TOLERANCE
D	body diameter	11.0 maximum	-
d	lead diameter	0.6	± 0.05
P	pitch between capacitors	12.7	± 1.0
P <sub>0</sub>	feed-hole pitch	12.7	± 0.3; note 1
ΔP	plane deviation	1.0 maximum	-
P <sub>1</sub>	feed-hole centre to lead centre	3.85	± 0.7; note 2
P <sub>2</sub>	feed-hole centre to component centre	6.35	± 1.3; note 2
F	lead spacing	5.0	+ 0.6 - 0.4
Δh	component alignment	0	± 1.0
Δs	deviation along tape, left or right	0	± 1.0
W	tape width	18.0	+ 1.0 - 0.5
W <sub>0</sub>	hold-down tape width	5.0 minimum	-
W <sub>1</sub>	hole position	9.0	+ 0.75 - 0.5
W <sub>2</sub>	hold-down tape margin	3.0 maximum	-
H <sub>0</sub>	height to seating plane	16.0	± 0.5
H <sub>1</sub>	maximum component height	32.0	-
e	lead end protrusion	1.0 maximum	-
L	maximum length of snapped lead	11.0	-
D <sub>0</sub>	feed-hole diameter	4.0	± 0.2
t	total tape thickness	0.9 maximum	-
t <sub>1</sub>	maximum thickness of tape and wires	1.5 maximum	-

#### Notes

- Cumulative pitch error:  $\pm \leq 1 \text{ mm} / 20 \text{ pitches}$ .
- Obliquity maximum 3°.

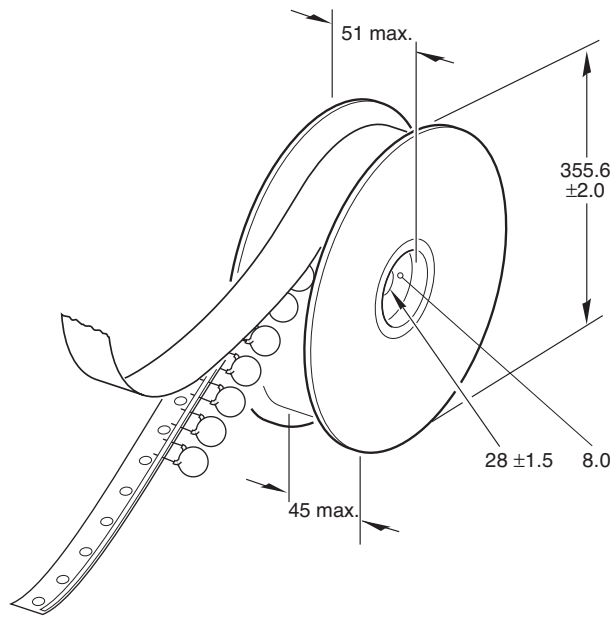
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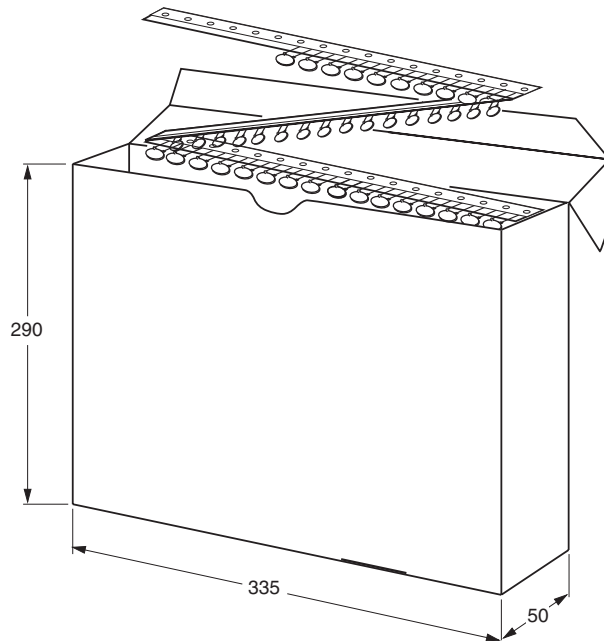
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## REEL AND TAPE DATA in millimeters



Reel with capacitors on tape.



Ammopack with capacitors on tape.