

Radial Leaded Ceramic Disc Capacitor

Features

- High capacitance in small size
- Capacitance range: 1pF to 0.22uF
- Insulation resistance $\geq 10000M\Omega$
- Operating temperature: -25 to 85°C
- Available in bulk, tape& reel, or ammo package
- RoHS compliant



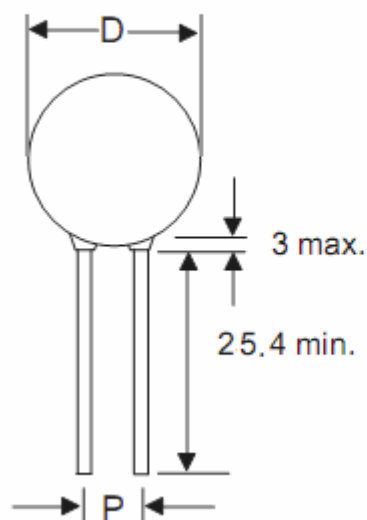
Applications

- Temperature Compensating
- Bypassing, Coupling and Decoupling
- Barrier

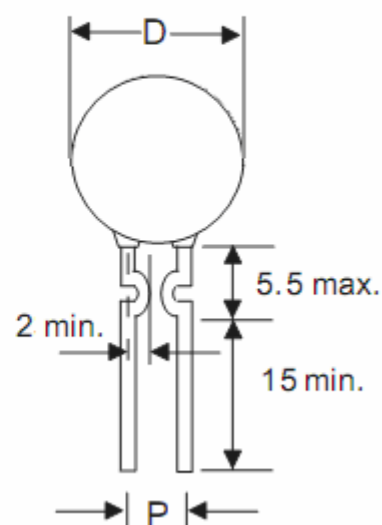
Lead Style and Dimension

BULK AND TAPED STYLES

Default Style



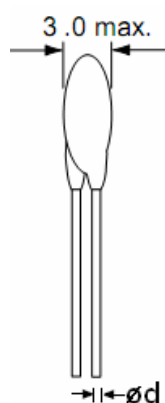
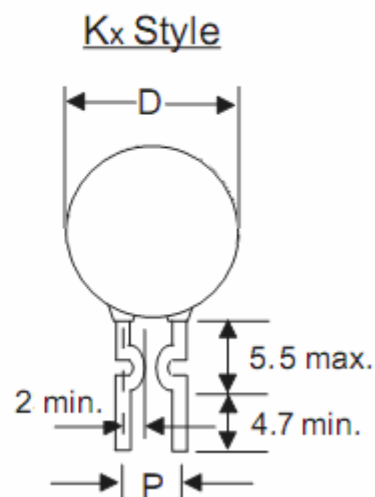
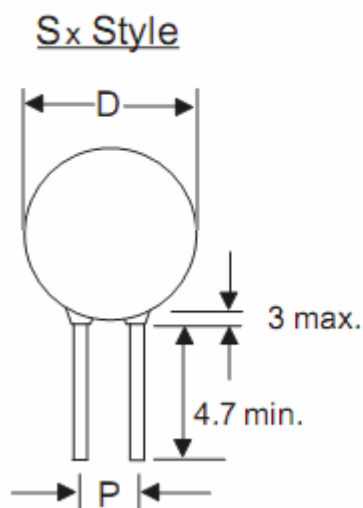
K Style



Radial Leaded Ceramic Disc Capacitor

TCDS Series

BULK ONLY



Unit: mm

D	P	Remark
5	2.5	Optional
	5	Default
	6.35	Optional
6 ~ 10	5	Default
	6.35	Optional
	7.5	Optional
> 10	5	Optional
	10	Default

Unit: mm

Style	Decription	L	Φ d	Packing	D vs. P
Default	Straight Lead	25.4 min.	0.5 or 0.6	Bulk Tape & Ammo Tape & Reel	See above table
K	Kink and Inward Formed Lead	15 min.			
Sx	Cut x mm Below Body	4.7 min.			
Kx	Cut x mm Below Kink	4.7 min.		Bulk	

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Characteristics Class I Temperature Compensating

Temperature Coefficient	NPO	N750	SL
Operation Temperature Range(°C)	-25 to +85		
Capacitance Range (pF)	1~330	10~270	22~1000
Capacitance Change	within tolerance at 1MHz and 25°C 1-3Vrms.		
Minimum Capacitance Tolerance	0.5~5pF: ±0.25pF ; 5~10pF: ±0.5pF ; >10pF :±5%,10%		
Rated Voltage	50V ,500V, 1000V		
Test Voltage	3 times rated voltage for 1.5 seconds		
Insulation Resistance	10000MΩ min at WV dc		
Q Factor	see Fig.1		
Life Test	2 times rated voltage at 85°C for 500 hrs.		

Class I Capacitance Table

Dia. (mm)	WV TC	Capacitance (pF)								
		50 V			500 V			1000 V		
		NPO	N750	SL	NPO	N750	SL	NPO	N750	SL
5		1-47	15-47	22-150	1-15	10-15	22-33	1-15	10-15	22-33
6		56-82	56-68	180-220	27	27	47	27	27	47
7		120	82-120	330	33	33	68-100	33	33	68-100
8		180	180	470	47	47	150	47	47	150
9		220	220	680	68	68	180	68	68	180
10		330	270	820	82	82	220	82	82	220
11		-	-	-	100	100	330	100	100	330
12		-	-	1000	-	-	-	-	-	-

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Characteristics Class II By-Passed & Coupling

Temperature Coefficient		Y5E	Y5P	Z5U	Z5V
Operation Temperature Range(° C)		-25 to +85	-25 to +85	+10 to +85	+10 to +85
Capacitance Range (pF)		100-3300	100-10000	1000-22000	1000-47000
Capacitance Change(see Fig. 2)	at 25 °C	within tolerance at 1KHz and 1-3Vrms.			
	over temp. range	±4.7%	±10%	+22% / -56%	+22% / -82%
Minimum Capacitance Tolerance at 25 °C		±10%	±10%	±20%	+80 / -20%
Rated Voltage		50V , 500V, 1000V, 3000V			
Test Voltage		3 times rated voltage for 1.5 seconds			
Insulation Resistance		10,000MΩ min at WV dc			
Power Factor		2.5% (Z5V 5%) max at 1KHz and 25°C			
Life Test		2 times working voltage at 85°C for 500 hrs.			

Class II Capacitance Table

Dia. (mm)	WV TC	Capacitance (pF)												
		50 V				500 V				1000 V				3000 V
		Y5E	Y5P	Z5U	Z5V	Y5E	Y5P	Z5U	Z5V	Y5E	Y5P	Z5U	Z5V	Y5P
5	100 -680	100 -152	1000 -4700	1000 -6800	100 -330	100 -1000	1000 -2200	1000 -3300	100 -330	100 -680	1000	1000		
6	820 -1000	1800 -2200	6800	10000	470 -680	1200	3300	4700	470	1000	1500	2200		
7	1200 -1500	2700 -3300	10000	22000	820	1500	4700	-	560	1200	2200	4700		
8	2200	4700	15000	27000	1000	2200	6800	10000	1000	1500	3300	6800		
9	3300	6800	20000	33000	1500	3300	8200	15000	1200	2200	4700	8200		
10	-	10000	22000	47000	1800	3900	10000	20000	1500	2700	6800	10000		
11	-	--	-	-	2200	4700	-	22000	1800	3300	-	15000	1000	
12	-	-	-	-	-	5600	15000	-	2200	3900	10000	-		
13	-	-	-	-	-	6800	22000	33000	-	4700	-	22000		
15	-	-	-	-	-	10000	-	-	-	6800	15000	33000		
18	-	-	-	-	-		-	-	-	10000	22000	47000		

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Characteristics Class III Barrier

Temperature Coefficient	Y5P	Y5U	Y5V
Operation Temperature Range(°C)	-25 to +85	-25 to +85	-25 to +85
Capacitance Range (pF)	10000-100000	100000	22000-100000
Minimum Capacitance Tolerance	±10%, ±20%, +80 / -20%		
Capacitance Change	within tolerance at 1KHz and 25°C 0.1Vrms. (see Fig.3)		
Rated Voltage	12V , 16V, 25V, 50V		
Test Voltage	2 times rated voltage for 1.5 seconds		
Power Factor	5% max at 1KHz. 0.1Vrms		
Life Test	apply rated voltage at 85°C for 500 hrs.		

Class III Capacitance Table

Dia. (mm)	WV TC	Capacitance (pF)								
		12/16 V			25 V			50 V		
		Y5P	Y5U	Y5V	Y5P	Y5U	Y5V	Y5P	Y5U	Y5V
5		-	-	-	10000	-	22000 -47000	10000	-	22000- 33000
6		-	100000	100000	22000	-	-	22000	-	47000
7		-	-	-	33000	100000	100000	33000	-	-
8		-	-	-	47000	-	-	47000	100000	100000
9		-	-	-	100000	-	220000	-	-	-
10		-	-	-	-	-	-	100000	-	-

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Electrical Characteristics

Fig.1 Minimum Q vs. Capacitance

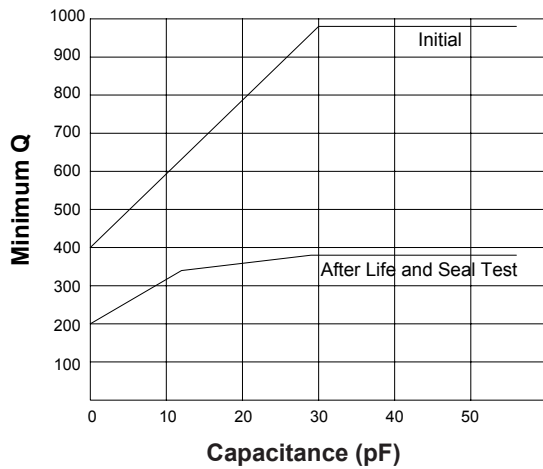


Fig.2 Capacitance Change vs. Temperature

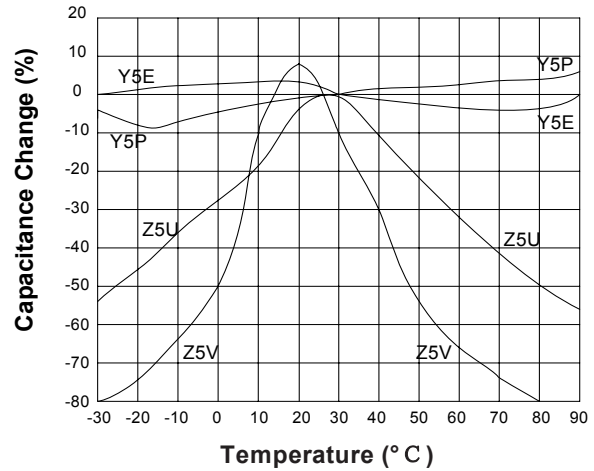
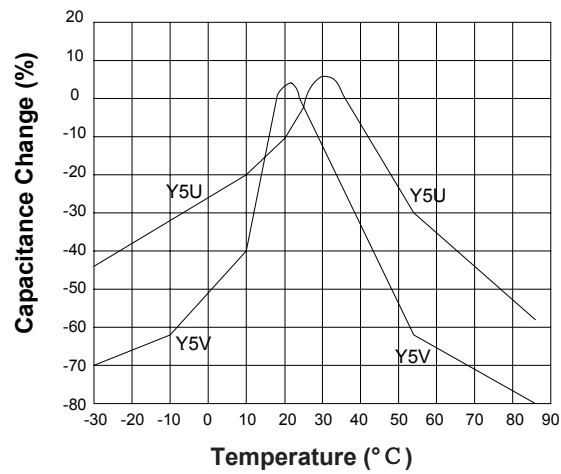


Fig.3 Capacitance Change vs. Temperature

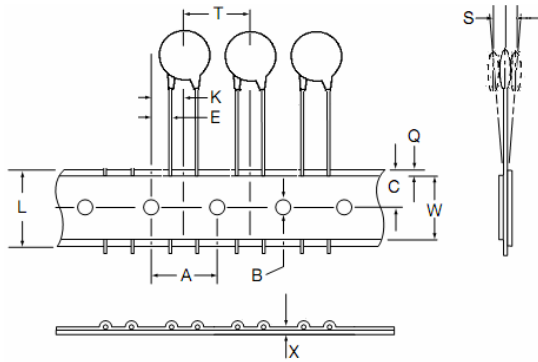


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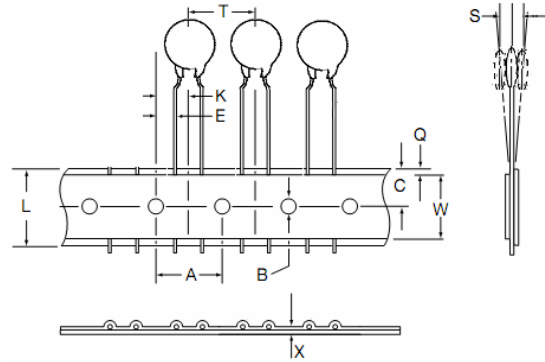
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Packing Information

Tape Dimensions for Straight Lead

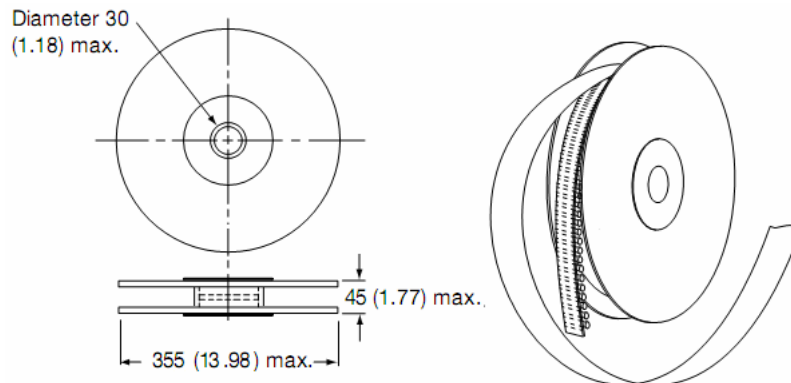


Tape Dimensions for Formed Lead



Description	Symbol	Dimensions	
		MM	Inch
Component Pitch	T	12.7±1.0	0.500±0.039
Feed Hole Pitch	A	12.7±0.3	0.500±0.012
Component Lead Location	E	3.85±0.50	0.152±0.020
Component Body Location	K	6.35±1.00	0.250±0.040
Feed Hole Diameter	B	4.0±0.2	0.157±0.008
Feed Hole Location	C	9.0±0.5	0.354±0.020
Adhesive Tape Border	Q	3.0 max.	0.118 max.
Adhesive Tape Width	W	13 min.	0.512 min.
Carrier Tape Width	L	18.0±0.5	0.709±0.020
Component Misalignment	S	2.0 max.	0.08 max.
Carrier Tape Thickness	X	0.7±0.2	0.028±0.008

Reel Dimensions



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Ammo Box Dimensions

Unit: mm(inch) max.

Length 330(13), Width 240(9.45)

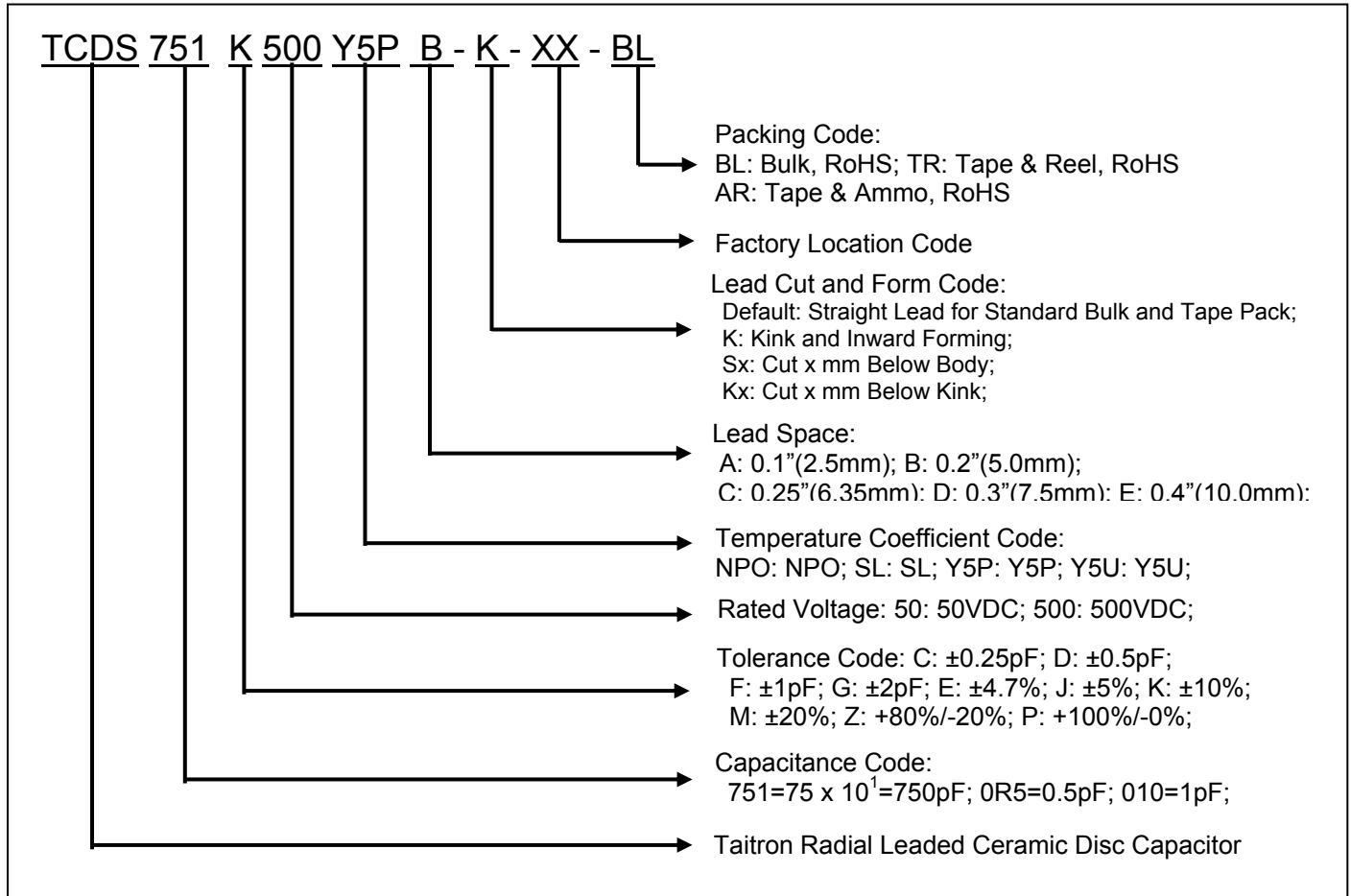
Packing Quantities

Packing Type	Lead Style	Quantities (pcs)
Bulk	Straight Lead Formed Lead	1000
Tape and Ammo		2000
Tape and Reel		2500

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TCDS Series

How to Order



How to contact us:

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