PART NUMBERING SYSTEM

CD - 1KO / 103 Z 0Z5V 1 E __ TR __

CERAMIC DISC

COMPUTER CODE

TR	=	Tape/Reel
TA	=	Tape/Ammo
–	=	Bulk

MAX DIAMETER only if required

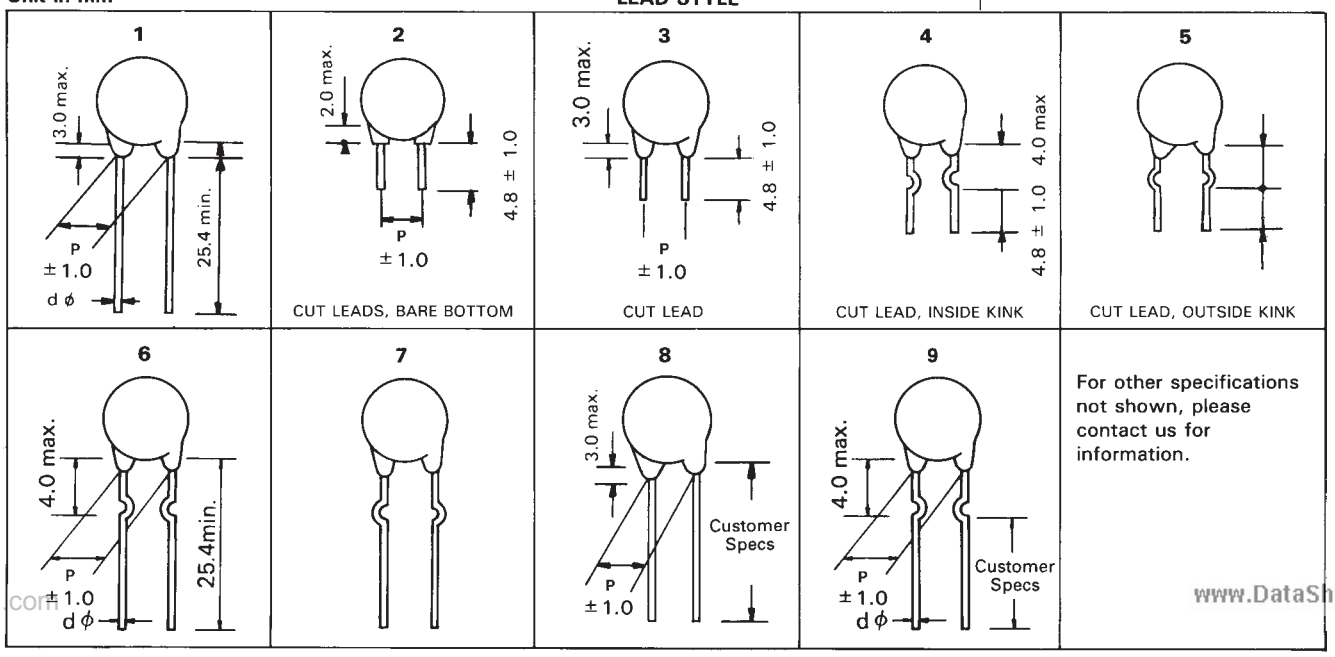
LEAD SPACING

	mm	(in)
A-	2.5	(.1)
B-	5.0	(.2)
C-	6.35	(.25)
D-	7.5	(.3)
E-	9.5	(.37)
F-	10	(.4)

RATED VOLTAGE	NOMINAL CAPACITANCE	STANDARD TOLERANCES	T.C. TEMPERATURE COEFFICIENT
(V)	First two digits are	F = ±1%	OPERATING RANGE
-012	significant, third digit is	J = ±5%	Class II & III
-016	the number of zeros to	K = ±10%	
-025	be added.	M = ±20%	First Digit / Second Digit / Third Digit
-050	103 =10,000pf = 0.01uf		LOW temp / HIGH temp / % Δ cap.
-100		Z = +80 - 20%	Z +10°C / 4 + 65°C / F ± 7.5
-250	1R0 = 1 pf	P = +100 - 0%	Y - 30°C / 5 + 85°C / P ± 10
-500	3R3 = 3.3 pf	(G.M.V.)	X - 55°C / 6 + 105°C / R ± 15
-1K0	100 = 10 pf		7 + 125°C / S ± 22
-2K0	220 = 22 pf	B = ±0.1 pf	T + 22
-3K0	101 = 100 pf	C = ±0.25 pf	OPERATING RANGE / - 33
	221 = 220 pf	D = ±0.5 pf	U + 22
	102 = 1000 pf		Class I / -56
	222 = 2200 pf		-30°C to +85°C / V + 22
	103 = .01 uf		NPO ∅ N1500 / -82
	223 = .022 uf		SL (N330 ± 500ppm)
	104 = .1 uf		
	224 = .22 uf		

Unit in mm

LEAD STYLE



DISC CAPACITOR REFERENCE DATA

CLASS 1 SERIES (T.C. TYPE) NPO, N150, N1500, SL. . .

CAPACITANCE

Test Frequency: 1 MHz ± 100KHz For<1000pf.
1 KHz ± 100Hz For>1000pf.
Test Voltage: Shall not exceed 1 ± 0.2 Vrms.
Test Temperature: 25° ± 2°C

Applications:
- Resonant circuit.
- High Q. requirement.
- High stability capacitor charactoristics.

DISIPATION FACTOR: < 0.1 @ 25°C

QUALITY FACTOR(Q).

For NPO to N1500 When C < 30pf Q = 400 + 20 x Cpf. C > 30pf Q > 1000.
Over N1500 When C < 30pf Q = 200 + 10 x Cpf. C > 30pf Q > 500.
For C above 1000pf at 1 KHz DF 0.2% Max

INSULATION RESISTANCE

10000 MΩ Min. Shall be measured after 1 minute at rated voltage.

DIELECTRIC WITHSTANDING VOLTAGE

Capacitors shall withstand, for not less than 1 second, a D.C. test Voltage of 2.5 times rated working voltage.

CLASS 2 SERIES (HI-K TYPE) Y5F, Y5P, Z5U. . .

CAPACITANCE

Test Frequency: 1 KHz
Test Voltage: 1 ± 0.2 Vrms.
Test Temperature: 25° ± 2°C

Applications:
- By-pass and coupling.
- Frequency discriminating where "Q" and stability of capacitor charactoristics are not major importance

DISSIPATION FACTOR(DF)

The DF shall not be greater than 2.5%.

INSULATION RESISTANCE

7500 MΩ Min. Shall be measured after 1 minute at rated voltage.

DIELECTRIC WITHSTANDING VOLTAGE

Capacitors shall withstand, for not less than 1 second, a D.C. test Voltage of 2.5 times rated working voltage.

CLASS 3 SERIES (S.C. TYPE) Y5R, Y5T, Y5V. . .

Smaller sizes than Class-2, but lower ''Q"

CAPACITANCE

Test Frequency: 1 KHz at 25° ± 2°C.
Test Voltage: Not greater than 0.1 Vrms.

Applications:
- Transistorized.
- Low voltage electronic circuits for by-pass coupling.

DISSIPATION FACTOR

At 3 VDC shall not exceed 5%, above 3 VDC shall not exceed 8%.

INSULATION RESISTANCE

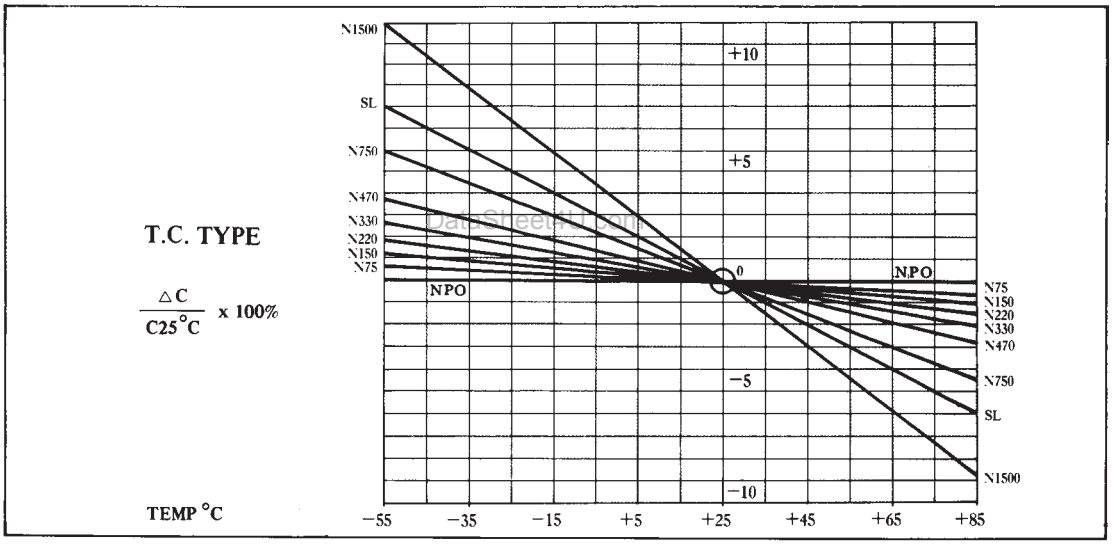
3.0 VDC-0.004MΩ-MFD 10-12VDC-0.04MΩ-MFD.
16-24 VDC-0.10MΩ-MFD 25-50VDC-1,00MΩ-MFD.

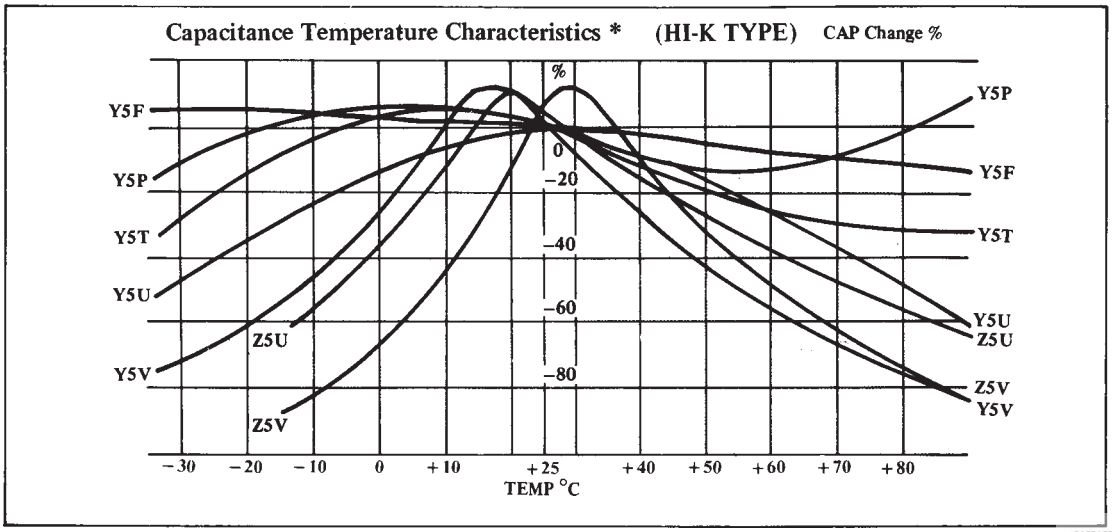
DISC CAPACITOR REFERENCE DATA

CAPACITANCE TOLERANCE

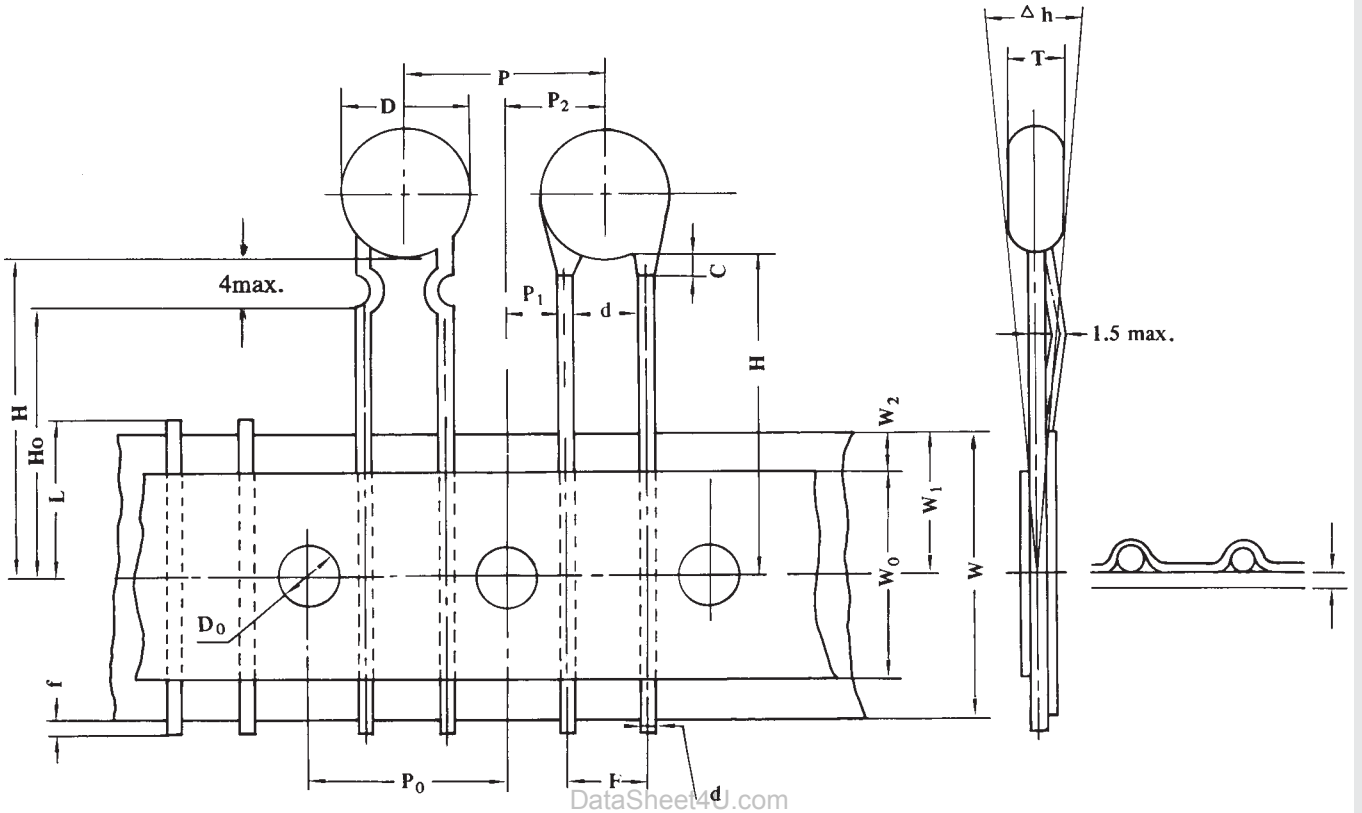
CODE	TOLERANCE VALUE	APPLY T.C.	REMARK
C	±0.25pf	NPO - N750	FOR SMALLER THAN 10pf
D	±0.50pf	NPO - N750	FOR SMALLER THAN 10pf
F	±1.00pf	NPO - N750	FOR SMALLER THAN 10pf
J	±5%	NPO - N3300	FOR OVER 10pf
K	±10%	NPO - N3300 (Y5F, Y5P)	FOR OVER 10pf
M	±20%	NPO - N3300 (Y5F, Y5P) (Y5U, Z5U)	FOR OVER 10pf
S	+50%-20%	Y5U, Z5U, Z5V.	
Z	+80%-20%	Y5U, Z5U, Z5V.	
P	+100%-0	Y5U, Z5U, Z5V.	

T.C. CHART





CERAMIC DISC
TAPING SPECIFICATIONS



Item	Symbol	Specification		Remarks
Body diameter	D	10.0	max.	
Body thickness	T	3.5	max.	
Lead-wire diameter	d	0.6	±0.05	0.5 ± 0.05 for CP wires
Pitch of component	P	12.7	±1.0	
Feed hole pitch	P_0	12.7	±0.3	Cumulative pitch error: 1.0mm/20 pitch
Feed hole center to lead	P_1	3.85	±0.7	
Hole center to component center	P_2	6.35	±1.3	
Lead-to-lead distance	F	5.0	±0.8	
Component alignment, F-R	Δh	0	±2.0 mm	
Tape width	W	18.0	±0.5	
Hold-down tape width	W_0	11.0	min.	
Hole position	W_1	9.0	±0.5	
Hold-down tape position	W_2	3.0	max.	
Height of component from tape center	H	20.0	±1	
Component height	H_1	32.25	max.	
Lead-wire protrusion	ℓ	2.0	max.	
Feed hole diameter	D_0	4.0	±0.3	
Total tape thickness	t	0.7	±0.2	Ground paper: 0.5 + 0.1mm
Length of snipped lead	L	11.0	max.	
Coating rundown on leads	C	2.0	max.	

DISC NPO, NEG. TC, SL

CD CLASS 1

100WVDC & UNDER

(pf)

DIAMETER	TEMPERATURE CHARACTERISTIC								
Dø ± 1m/m	NPO	N75	N150	N220	N330	N470	N750	SL(GP)	N1500
4	1-24	1-12	1-24	1-27	1-27	1-33	1-43	1-68	27-56
5	25-47	13-22	25-47	28-47	28-47	34-47	44-82	72-100	62-100
6	50-100	24-33	50-100	50-100	50-100	50-100	83-100	120-220	120-220
8	120-150	35-68	120-150	120-150	120-150	120-150	120-150	250-470	250-470
10	180-220	72-130	180-220	180-220	180-220	180-220	180-250	500-620	500-620
12	250-300	140-180	250-300	250-300	250-300	250-300	270-390	680-1000	620-1000

500WVDC

DIAMETER	TEMPERATURE CHARACTERISTIC								
Dø ± 1m/m	NPO	N75	N150	N220	N330	N470	N750	SL(GP)	N1500
5	1-22	1-15	1-22	1-22	1-22	1-22	1-27	1-47	27-47
6	25-39	18-22	25-39	25-39	25-39	25-39	30-39	50-100	50-100
8	47-82	25-47	47-82	47-82	47-82	47-82	40-82	120-180	120-180
10	91-120	50-68	91-120	91-120	91-120	91-120	91-150	200-330	200-330
12	150-220	72-120	150-220	150-220	150-220	150-220	180-220	350-500	350-500

1KWVDC

DIAMETER	TEMPERATURE CHARACTERISTIC						
Dø ± 1m/m	NPO	N150	N220	N330	N470	N750	SL(GP)
5	1-15	1-15	1-15	1-15	1-15	1-22	1-47
6	18-33	18-33	18-33	18-33	18-33	24-39	50-100
8	35-68	35-68	35-68	35-68	35-68	40-82	120-180
10	72-120	72-120	72-120	72-120	72-120	91-150	200-330
12	150-180	150-180	150-180	150-180	150-180	180-220	350-500

DISC HI-K, Y5F, Y5P, Z5U TO Z5V

CD CLASS 2

100WVDC & UNDER

(pf)

DIAMETER	TEMPERATURE CHARACTERISTIC			
Dø ± 1m/m	Y5F	Y5P	Z5U	Z5V
4	100-470	200-1000	1000-2700	1000-5000
5	500-680	1200-1500	3000-3900	5600-8200
6	820-1000	1800-2200	4000-5600	10000
8	1200-2700	2500-5600	6800-10000	22000-33000
10	3000-5600	6200-10000	22000-100000	40000-100000

500WVDC

DIAMETER	TEMPERATURE CHARACTERISTIC			
Dø ± 1m/m	Y5F	Y5P	Z5U	Z5V
5	100-330	200-560	1000-3000	2000-3300
6	350-500	620-1000	3300-3900	3900-4700
8	560-1200	1200-2200	4700-6800	5000-8200
10	1500-2200	2500-3900	8200-10000	10000-15000
12	2500-3300	4000-5600	12000-15000	20000
14	3500-5000	6200-10000	18000-33000	22000-50000

1KWVDC

DIAMETER	TEMPERATURE CHARACTERISTIC			
Dø ± 1m/m	Y5F	Y5P	Z5U	Z5V
5	100-220	100-500	500-1200	1000-2200
6	250-500	560-1000	1500-2200	2500-3300
8	560-1200	1200-2000	2500-5000	3500-5600
10	1500-2000	2200-3300	5000-8200	6200-10000
12	2200-3000	3500-5000	10000-12000	
14	3300-3900	5600-6800	15000-18000	
16	4200-5600	7200-10000	20000-22000	

Voltages values for sizes of TC not listed above,
consult Factory or Area Representative.

DISC SC, SMALL SIZES, Y5R TO Y5V

CD CLASS 3

3.0 WVDC - 16 WVDC

(MFD)

DIAMETER	TEMPERATURE CHARACTERISTIC			
Dø ± 1m/m	Y5R	Y5T	Y5U	Y5V
5	.001-.022	.01-.033	.01-.033	.01-.047
6	.027-.047	.047	.047	.068-.1
8	.056-.1	.068-.1	.068-.1	
10				.22

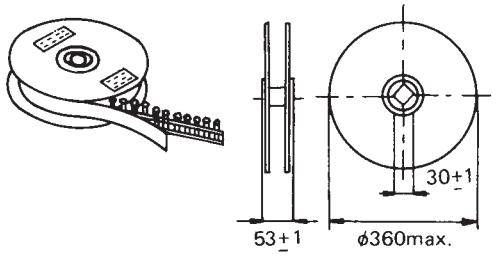
25 WVDC

DIAMETER	TEMPERATURE CHARACTERISTIC			
Dø ± 1m/m	Y5R	Y5T	Y5U	Y5V
5	.001-.01	.01-.022	.01-.033	.01-.022
6	.012-.022	.033-.047	.047	.033-.1
8	.027-.047	.068-.1	.068-.1	
10	.056-.1			

50 WVDC

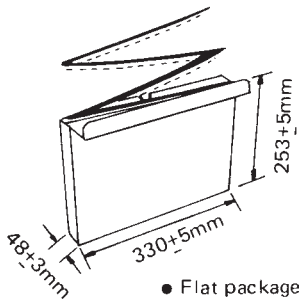
DIAMETER	TEMPERATURE CHARACTERISTIC		
Dø ± 1m/m	Y5R	Y5T	Y5U
5	.001-.0056		.01-.022
6	.0068-.015	.01-.022	.033-.047
8	.018-.022	.033-.047	.056-.1
10	.0027-.047	.056-.1	

REEL PACK



2000 – or 2500 pcs. per reel depending upon dia. of capacitor

AMMO PACK



2000 – 3000 pcs. per box.

Tecate Industries 858.513.2300 Fax 858.513.2345 Web Site: www.TecateGroup.com