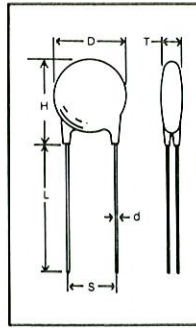


CLASS I - Extended Range Temperature Compensating Capacitors

General

Maida also offers Class I extended range temperature compensating ceramic disk capacitors in accordance with EIA RS-198-C. These capacitors have more negative temperature coefficients which range from N1500 to N5600 (PPM/degree C). Dielectric constants may range from 40 to 2000, but values of 150 to 600 are more typical. They have very slight dependence of capacitance and Q upon voltage, frequency, and time.



Specifications

Capacitance and Dissipation Factor (Q):

Capacitance and dissipation factor (Q) shall be measured at 25C with less than 2.0 volts A.C. applied. The frequency shall be 1 MHz for capacitance values below 1000 pF and 1 KHz for values of 1000 pF or higher. The dissipation factor shall be 0.2% maximum (Q=500 minimum).

Standard Capacitance Tolerances Available:

Tolerance	Code Letter
± 5%	J
± 10%	K
± 20%	M

Tighter tolerances by special order only.

Voltage Ratings:

500 VDC - 30 KVDC (see tables)

Insulation Resistance:

The insulation resistance shall not be less than 10,000 megohms at 25C when measured between terminals after a 2-minute charge at 100 volts D.C. with the charging current limited to 50 mA.

Dielectric Withstand Voltage:

After applying twice rated D.C. voltage for 5 ± 1 seconds, capacitors shall meet original requirements.

Temperature Coefficients Available:

A 3-digit code per EIA RS-198-C is used. The first letter defines the significant figures of temperature coefficient. A number denotes a multiplier to be applied to the significant figures. The last letter is a tolerance code for the temperature coefficient in PPM/degree C.

1st Letter (Sign. Fig)	Number (Mult)	Last Letter (Tolerance)
P = 1.5	3 = -1000	K = 250
R = 2.2		L = 500
S = 3.3		M = 1000
T = 4.7		N = 2500
W = 5.6		

Temperature Ratings:

Class I extended TC capacitors operate in the range of -55C to +85C, and may be stored from -55C to +125C without affecting performance.

Life Test:

Capacitors shall withstand a potential of 1.5 times the rated D.C. voltage for a period of 1000 hours at 85C. When tested 24 hours after the completion of the test, the capacitance change shall be no more than 10%; the D.F. shall be no more 0.5% (minimum Q = 200); and the I.R. shall be 1000 megohms minimum.

Humidity Resistance:

Capacitors exposed to a relative humidity of 95% for 100 hours at 40C shall have an I.R. of 1000 megohms minimum and a maximum D.F. of 0.5% (minimum Q=200).

Construction

Coating Materials:

Maida's standard disk capacitors are conformally coated either with a dry-process fluid-bed epoxy or with a baked-on phenolic coating applied by a wet-dip method. Diameter and thickness dimensions shown in the tables are for the epoxy-coated units. These sizes are typically 1/32 inch (.031) larger in diameter than for phenolic-coated capacitors of identical values. Each coating is flame retardant.

Coating Control on Leads:

Straight leads - the coating will not extend more than 1/8" onto the leads as measured from a tangent line drawn to the bottom of the disk.

Formed leads - the coating will not extend below that kink which defines the "seating plane" of the capacitor.

Lead Wires:

Material - Standard leads are tin-plated copper, either 22 AWG or 20 AWG. All capacitors which are both smaller than 1/2" maximum diameter and rated below 8 KVDC use 22 AWG. All others have 20 AWG.

Configuration - Standard leads are straight and long (1" minimum). Cut and/or formed leads are available. See page 25 for some of the many lead forms available.

Lead Spacing - On standard capacitors, nominal lead spacing is determined primarily by disk diameter. See capacitance tables. Other lead spacings are available on request.

Marking

Laser marking and ink-stamp marking methods are used. All units shall be marked with "MDC", rated capacitance, capacitance tolerance, temperature characteristic code, and rated voltage. 500-volt capacitors shall have no voltage marking. On smaller units where space is limited the "MDC" may be omitted. Date coding is available.

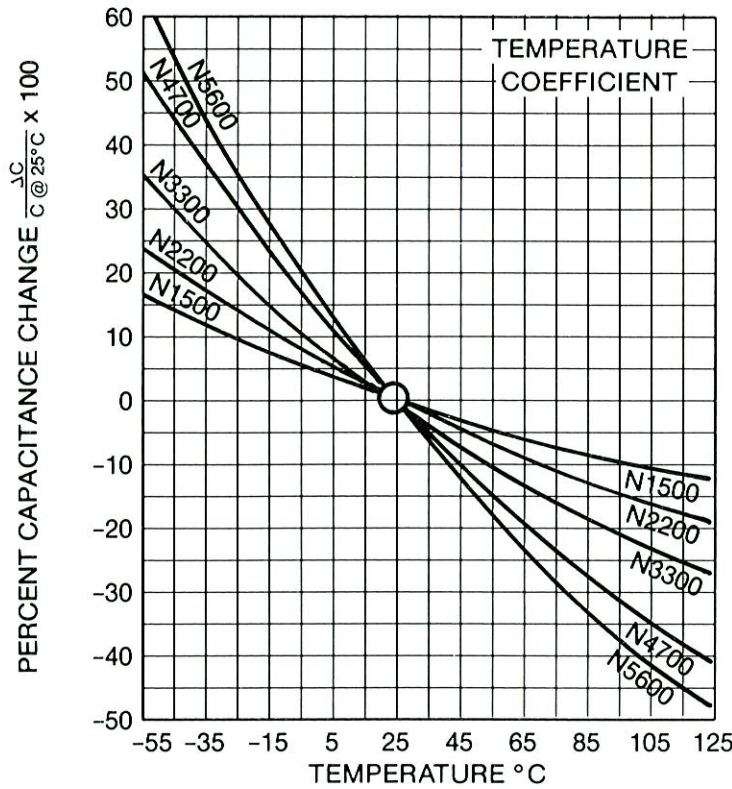
How To Order

Standard disk capacitors from the tables should be ordered by complete style number according to the following format:

D64P3K	151	K	8KV
Style	Capacitance Code	Tolerance Code	DC Voltage
size & temp. coeff. first column of table	3 digits-2 are significant figures, last is a multiplier.	J = ± 5% K = ± 10% M = ± 20%	from table (omit for 500V ratings.)
Phenolic coating available for voltages 2KV and less.	multipliers		
Omit leading "D" in style number.	0 = × 1 1 = × 10 2 = × 100 3 = × 1000 9 = × 0.1		

CLASS I - Extended Range Temperature Compensating Capacitors

Capacitance vs. Temperature Extended Range T.C. Capacitors

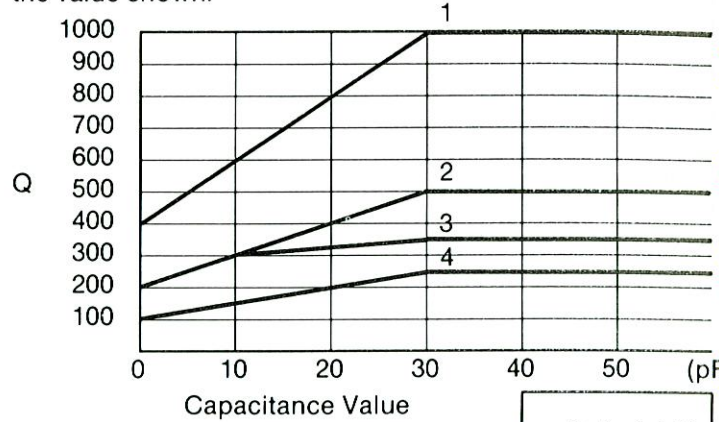


Quality Factor (Q) vs. Capacitance Value (Before and After Life Test)

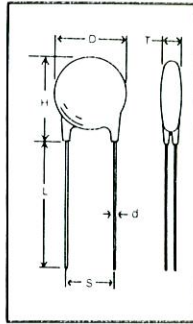
Extended Range T.C. Capacitors

Quality Factor (Q) - N1500 thru N5600

For capacitance values 1000 pF or less at 1 MHz. When determined as specified in RS-198-C-1 shall not be less than the value shown.



- Curve 1 - Initial Q for temperature coefficient values -1500 ppm/°C
- Curve 2 - Initial Q for temperature coefficient values above -1500 ppm/°C
- Curve 3 - Q after life test, -1500 ppm/°C
- Curve 4 - Q after life test, above -1500 ppm/°C



Maximum Capacitance Available (pF) - N1500 Temperature Coefficient (PPM/°C)

STYLE	D MAX	L.S.	500V	1KV	2KV	3KV	4KV	5KV	6KV	8KV	9KV	10KV	12KV	15KV	18KV	20KV	22KV	25KV	30KV
	MAX. THICKNESS		.160	.170	.200	.220	.240	.260	.280	.320	.340	.360	.400	.460	.520	.560	*	*	*
D59P3K	.282	.200	43	30	24	16	12	9.1	7.5										
D58P3K	.312	.200	68	43	33	24	18	15	12										
D60P3K	.344	.250	91	62	47	33	24	20	16										
D73P3K	.375	.250	120	82	62	43	33	27	22										
D68P3K	.407	.250	150	100	82	56	43	33	30	24	22	20	16	13	11	9.1			
D61P3K	.469	.300	220	160	120	82	62	51	43	33	30	27	22	18	15	15	12	10	6.8
D71P3K	.532	.375	330	220	180	120	91	75	62	47	43	36	20	24	20	18	18	15	11
D62P3K	.594	.375	430	300	220	150	120	100	82	62	56	47	39	33	27	24	22	20	16
D69P3K	.656	.500	560	390	300	200	150	120	100	75	68	62	51	43	33	30	27	24	20
D64P3K	.720	.500	680	470	360	240	200	150	130	91	82	75	62	51	43	39	33	30	27
D63P3K	.782	.500	820	560	430	300	220	180	150	110	100	91	75	62	51	47	43	36	30
D67P3K	.844	.500	1000	680	510	360	270	220	180	150	120	110	91	75	62	56	51	43	36
D65P3K	.906	.500	1100	820	620	430	330	270	220	160	150	130	110	82	68	62	56	51	43
D76P3K	.969	.500	1300	910	750	510	360	300	240	180	160	150	120	100	82	75	68	62	51
D66P3K	1.100	.500	→	1200	1000	620	470	390	330	240	220	200	160	130	110	100	91	75	62
D70P3K	1.350	.500	→	2000	1500	1000	750	620	510	390	330	300	270	200	180	150	150	120	100

*Various encapsulation available, contact our Engineering Department.

CLASS I - Extended Range Temperature Compensating Capacitors

Maximum Capacitance Available (pF) - N2200 Temperature Coefficient (PPM/°C)

STYLE	D MAX	L.S.	500V	1KV	2KV	3KV	4KV	5KV	6KV	8KV	9KV	10KV	12KV	15KV	18KV	20KV	22KV	25KV	30KV
MAX. THICKNESS			.160	.170	.200	.220	.240	.260	.280	.320	.340	.360	.400	.460	.520	.560	*	*	*
D59R3K	.282	.200	62	43	33	22	18	13	11										
D58R3K	.312	.200	91	68	51	33	27	20	18										
D60R3K	.344	.250	130	91	68	47	36	30	24										
D73R3K	.375	.250	180	120	91	62	47	39	33										
D68R3K	.407	.250	220	150	120	82	62	51	43	33	30	27	22	18	15	13			
D61R3K	.469	.300	330	220	180	120	91	75	62	51	43	39	33	27	22	20	18	15	10
D71R3K	.532	.375	470	330	240	180	130	110	91	68	62	56	43	36	30	27	24	22	16
D62R3K	.594	.375	620	430	330	220	180	150	120	91	75	68	62	47	39	36	33	27	24
D69R3K	.656	.500	820	560	430	300	220	180	150	110	100	91	75	62	51	43	39	36	30
D64R3K	.720	.500	1000	680	510	360	270	220	180	150	120	110	91	75	62	56	51	43	36
D63R3K	.782	.500	1200	820	620	430	330	270	220	160	150	130	110	91	75	68	62	51	43
D67R3K	.844	.500	1500	1000	750	510	390	330	270	200	180	160	130	110	91	82	75	62	51
D65R3K	.906	.500	1600	1200	910	620	470	360	300	240	200	180	150	120	100	91	82	75	62
D76R3K	.969	.500	1800	1500	1100	750	560	430	360	270	240	220	180	150	120	110	100	91	75
D66R3K	1.100	.500	→	1800	1500	910	680	560	470	360	300	270	240	180	150	150	130	110	91
D70R3K	1.350	.500	→	3000	2200	1500	1100	910	750	560	470	430	360	300	240	220	200	180	150

*Various encapsulation available, contact our Engineering Department.

Maximum Capacitance Available (pF) - N3300 Temperature Coefficient (PPM/°C)

STYLE	D MAX	L.S.	500V	1KV	2KV	3KV	4KV	5KV	6KV	8KV	9KV	10KV	12KV	15KV	18KV	20KV	22KV	25KV	30KV
MAX. THICKNESS			.160	.170	.200	.220	.240	.260	.280	.320	.340	.360	.400	.460	.520	.560	*	*	*
D59S3L	.282	.200	110	75	56	39	30	22	18										
D58S3L	.312	.200	160	110	82	56	43	36	30										
D60S3L	.344	.250	220	150	120	82	62	47	39										
D73S3L	.375	.250	300	200	150	110	82	68	56										
D68S3L	.407	.250	360	270	200	150	100	82	68	56	51	47	39	30	27	22			
D61S3L	.469	.300	560	390	300	200	160	130	110	82	75	68	56	43	36	33	30	27	16
D71S3L	.532	.375	820	560	430	300	220	180	150	110	100	91	75	62	51	47	43	36	27
D62S3L	.594	.375	1100	750	560	390	300	240	200	150	130	120	100	82	68	62	56	47	39
D69S3L	.656	.500	1300	910	680	470	360	300	240	180	160	150	120	100	82	75	68	62	51
D64S3L	.720	.500	1800	1200	910	620	470	360	300	240	200	180	150	120	100	91	82	75	62
D63S3L	.782	.500	2000	1500	1100	750	560	430	360	270	240	220	180	150	120	110	100	91	75
D67S3L	.844	.500	2400	1800	1300	910	680	560	430	330	300	270	220	180	150	130	120	110	91
D65S3L	.906	.500	2700	2000	1500	1000	750	620	510	390	360	300	270	200	180	150	150	120	100
D76S3L	.969	.500	3000	2400	1800	1200	910	750	620	470	390	360	300	240	200	180	160	150	120
D66S3L	1.100	.500	→	3000	2400	1600	1200	910	820	620	510	470	390	330	270	240	220	200	160
D70S3L	1.350	.500	→	4700	3600	2400	1800	1500	1200	910	820	750	620	510	430	360	330	300	240

*Various encapsulation available, contact our Engineering Department.

CLASS I - Extended Range Temperature Compensating Capacitors

Maximum Capacitance Available (pF) - N4700 Temperature Coefficient (PPM/° C)

STYLE	D MAX	L.S.	500V	1KV	2KV	3KV	4KV	5KV	6KV	8KV	9KV	10KV	12KV	15KV	18KV	20KV	22KV	25KV	30KV
MAX. THICKNESS			.160	.170	.200	.220	.240	.260	.280	.320	.340	.360	.400	.460	.520	.560	*	*	*
D59T3M	.282	.200	330	240	180	120	91	68	56										
D58T3M	.312	.200	510	360	270	180	150	110	91										
D60T3M	.344	.250	680	470	360	270	200	150	130										
D73T3M	.375	.250	910	620	470	330	270	200	180										
D68T3M	.407	.250	1200	820	620	430	330	270	220	180	160	150	120	100	82	75			
D61T3M	.469	.300	1800	1200	910	620	510	390	330	270	240	220	180	150	120	110	100	82	51
D71T3M	.532	.375	2400	1800	1300	910	680	560	470	360	330	300	240	200	160	150	130	110	91
D62T3M	.594	.375	3300	2200	1800	1200	910	750	620	470	430	360	300	240	200	180	180	150	120
D69T3M	.656	.500	4300	3000	2200	1500	1200	910	820	620	510	470	390	330	270	240	220	200	160
D64T3M	.720	.500	5600	3600	2700	2000	1500	1200	1000	750	680	560	470	390	330	300	270	240	200
D63T3M	.782	.500	6800	4300	3300	2400	1800	1500	1200	910	820	680	620	470	390	360	330	300	240
D67T3M	.844	.500	7500	5600	3900	2700	2200	1800	1500	1100	910	820	680	560	470	430	390	330	270
D65T3M	.906	.500	8200	6200	4700	3300	2400	2000	1600	1200	1100	1000	820	680	560	510	430	390	330
D76T3M	.969	.500	10000	7500	5600	3900	3000	2200	2000	1500	1300	1100	1000	750	620	560	510	470	390
D66T3M	1.100	.500	→	10000	7500	5100	3600	3000	2400	1800	1600	1500	1200	1000	820	750	680	620	510
D70T3M	1.350	.500	→	15000	12000	7500	5600	4700	3900	3000	2700	2400	2000	1500	1300	1200	1100	910	750

*Various encapsulation available, contact our Engineering Department.

Maximum Capacitance Available (pF) - N5600 Temperature Coefficient (PPM/° C)

STYLE	D MAX	L.S.	500V	1KV	2KV	3KV	4KV	5KV	6KV	8KV	9KV	10KV	12KV	15KV	18KV	20KV	22KV	25KV	30KV
MAX. THICKNESS			.160	.170	.200	.220	.240	.260	.280	.320	.340	.360	.400	.460	.520	.560	*	*	*
D59W3M	.282	.200	180	120	91	62	47	36	30										
D58W3M	.312	.200	270	180	150	100	75	56	47										
D60W3M	.344	.250	360	270	200	130	100	82	68										
D73W3M	.375	.250	470	330	270	180	130	110	91										
D68W3M	.407	.250	620	430	330	220	180	150	120	100	91	75	62	51	43	39			
D61W3M	.469	.300	910	620	510	330	270	220	180	150	120	110	91	75	62	56	51	43	27
D71W3M	.532	.375	1300	910	680	470	360	300	270	200	180	150	130	100	82	75	68	62	47
D62W3M	.594	.375	1800	1200	910	620	470	390	330	240	220	200	160	130	110	100	91	82	68
D69W3M	.656	.500	2200	1500	1200	820	620	510	430	300	270	240	200	160	150	120	110	100	82
D64W3M	.720	.500	3000	2000	1500	1000	750	620	510	390	330	300	270	200	180	150	150	120	100
D63W3M	.782	.500	3600	2400	1800	1200	910	750	620	470	430	360	300	240	200	180	180	150	120
D67W3M	.844	.500	4300	3000	2200	1500	1100	910	750	560	510	430	360	300	240	220	200	180	150
D65W3M	.906	.500	4300	3300	2700	1800	1300	1000	910	680	560	510	430	360	300	270	240	200	180
D76W3M	.969	.500	5100	3900	3000	2000	1500	1200	1000	750	680	620	510	390	330	300	270	240	200
D66W3M	1.100	.500	→	5100	3900	2700	2000	1600	1300	1000	910	820	680	510	430	390	360	330	270
D70W3M	1.350	.500	→	8200	6200	4300	3000	2400	2000	1500	1500	1200	1000	820	680	620	560	510	430

*Various encapsulation available, contact our Engineering Department.