Application

NPO (COG) dielectric properties; suited for precision circuits, requiring stable dielectric characteristics:

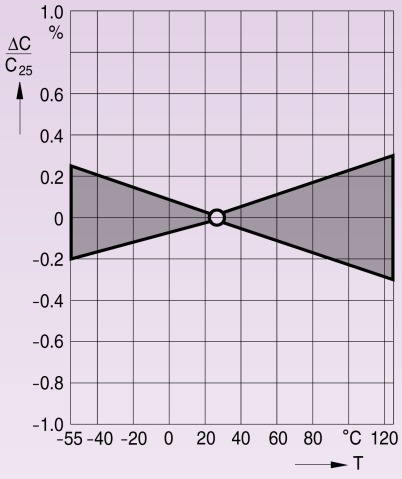
- Negligible dependence of capacitance and dissipation factor on time, voltage, and frequency
- Low-loss (High Q)
- Predictable linear temperature coefficient
- No piezoelectric behavior

General Specification

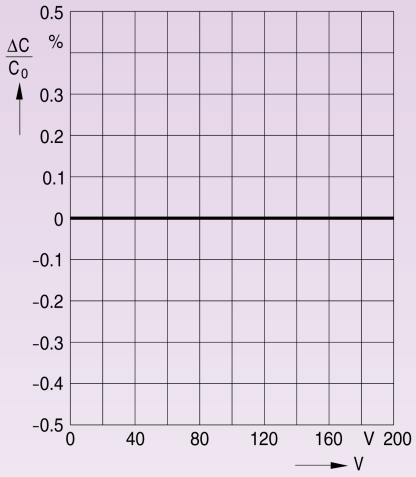
- Operating temperature range : –55℃ +125℃
- Temperature coefficient: 0 ±30ppm/℃
- Capacitance Range: 0.5pF 0.22uF (Test condition: 1.0 ±0.2 Vrms, 1KHz, for≦1000pF use 1 MHz)
- Capacitance Tolerance: Preferred ±1% , ±2% ±5%, ±10% . (10PF＜: ±0.05pF, ±0.1pF, ±0.25pF, ±0.5Pf)
- Rated Voltage: 25VDC, 50VDC, 100VDC, 250VDC, 500VDC, 1KVDC, 2KVDC, 3KVDC
- Q value : C＜30pF : Q≧400+20C, C≧30pF : Q≧1000 (Test condition: 1MHz, 1KHZ for C≧1000pF, 1Vrms, 25℃)
- Insulation resistance: 100,000 MΩ or 1,000 Ω-F min, whichever is less. (rated voltage applied at 25℃)
- Dielectric strength: > 250% of rated voltage for 10 100V, 200% for 200&250V, 150% for 500V, 120% for≧1000V

Characteristics

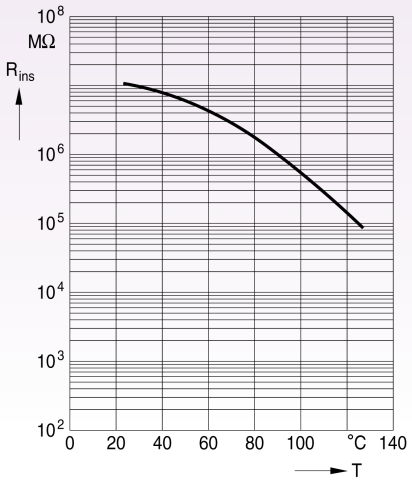
Capacitance change△C/C_{25} versus temperature T (tolerance range)



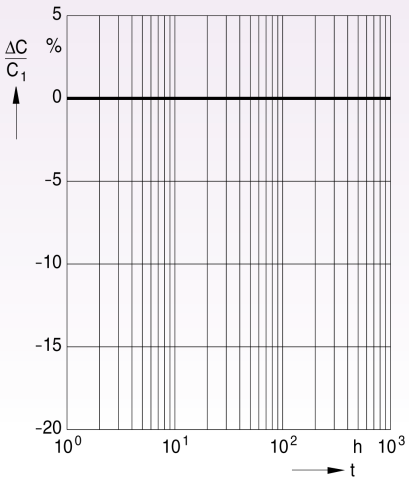
Capacitance change△C/C_0 versus superimposed dc voltage V



Insulation resistance Rins versus Temperature T



Capacitance change△C/C_1 versus time (aging rate)



Size And Values Available (NPO) 25v~100v

Size		0402		0603			0805			1206			1210		1812	
(L)Length	mm	1.00±0.05		1.60±0.10			2.00±0.20			3.20±0.20			3.20±0.30		4.50±0.30	
(W)Width	mm	0.50±0.05		0.80±0.10			1.25±0.20			1.60±0.20			2.50±0.20		3.20±0.30	
(T)Max. Thickness	mm	0.50±0.05		0.80±0.10			1.25±0.10			1.65±0.20			2.50±0.30		3.20±0.30	
(t)Terminal	mm	0.15±0.35		0.27~0.60			0.30~0.70			0.30~0.70			0.30~0.70		0.35~1.00	
Capacitance		25	50	25	50	100	25	50	100	25	50	100	50	100	50	100
0.47 - 0.82	pF		S		P	P		A	A		H	H				
1 - 9.1	pF		S		P	P		A	A		H	H				
10	pF		S		P	P		A	A		H	H				
12	pF		S		P	P		A	A		H	H				
15	pF		S		P	P		A	A		H	H				
18	pF		S		P	P		A	A		H	H				
22	pF		S		P	P		A	A		H	H				
27	pF		S		P	P		A	A		H	H				
33	pF		S		P	P		A	A		H	H				
39	pF		S		P	P		A	A		H	H				
47	pF		S		P	P		A	A		H	H				
56	pF		S		P	P		A	A		H	H				
68	pF		S		P	P		A	A		H	H				
82	pF		S		P	P		A	A		H	H				
100	pF		S		P	P		A	A		H	H				
120	pF		S		P	P		A	A		H	H				
150	pF		S		P	P		A	A		H	H				
180	pF		S		P	P		A	A		H	H				
220	pF		S		P	P		A	A		H	H				
270	pF		S		P	P		A	A		H	H				
330	pF	S	S		P	P		A	A		H	H				
390	pF	S	S		P	P		A	A		H	H				
470	pF	S	S		P	P		A	A		H	H				
560	pF	S			P	P		A	A		H	H				
680	pF	S			P			A	A		H	H				
820	pF	S			P			A	A		H	H				
1.0	nF	S			P			H	A		H	H				
1.2	nF				P			H	H		H	H				X
1.5	nF				P			H	H		H	H				X
1.8	nF				P			H	H		H	H				X
2.2	nF				P			H	H		H	H				X
2.7	nF				P			X	X		H	H				X
3.3	nF				P			X	X		H	H				X
3.9	nF			P			A	X	X		H	H				X
4.7	nF			P			A	X			H	H				X
5.6	nF			P			A	X			H	H				X
6.8	nF			P			A	X			C	C				X
8.2	nF			P			A	X		H	X	X		C		X
10	nF			P			A	X		H	X			C	X	X
15	nF						H			H	X		X	X	X	X
22	nF						X			H	X		X		X	X
33	nF						X			X	L		X		X	X
47	nF									X			Z		L	
68	nF									L			Z		L	
100	nF									L			G		Z	
220	nF														U	

Size And Values Available (NPO) 250v~3000v

Size		0805		1206				1210					1808					1812				
(L)		2.00±0.20		3.20±0.20				3.20±0.30					4.50±0.30					4.50±0.30				
(W)		1.25±0.20		1.60±0.20				2.50±0.20					2.00±0.20					3.20±0.30				
(T)		0.80±0.10		1.65±0.20				1.65±0.20					2.00±0.20					2.00±0.20				
(t)		0.30~0.70		0.30~0.70				0.30~0.70					0.35~1.00					0.35~1.00				
Cap./ W.V.		250	500	250	500	1KV	2KV	250	500	1KV	2KV	3KV	250	500	1KV	2KV	3KV	250	500	1KV	2KV	3KV
10	pF	A	A	H	H	L	L			L	L	L			F	F	F			L	L	L
12	pF	A	A	H	H	L	L			L	L	L			F	F	F			L	L	L
15	pF	A	A	H	H	L	L			L	L	L			F	F	F			L	L	L
18	pF	A	A	H	H	L	L			L	L	L			F	F	F			L	L	L
22	pF	A	A	H	H	L	L			L	L	L			F	F	F			L	L	L
27	pF	A	A	H	H	L	L			L	L	L			F	F	F			L	L	L
33	pF	A	A	H	H	L	L			L	L	L			F	F	F			L	L	L
39	pF	A	A	H	H	L	L			L	L	L			F	F	F			L	L	L
47	pF	A	A	H	H	L	L			L	L	L			F	F	F			L	L	L
56	pF	A	A	H	H	L	L			L	L	L			F	F	F			L	L	L
68	pF	A	A	H	H	L	L			L	L	L			F	F	F			L	L	L
82	pF	A	H	H	H	L	L			L	L	L			F	F	F			L	L	L
100	pF	H	H	H	H	L	L			L	L	L			F	F	F			L	L	L
120	pF	H	X	H	H	L	L			L	L	L			F	F	F			L	L	L
150	pF	X	X	H	H	L	L			L	L	L			F	F	F			L	L	L
180	pF	X	X	H	H	L	L			L	L	L			F	F	F			L	L	L
220	pF	X	X	H	H	L	L			L	L	L			L	L	L			L	L	L
270	pF	X	X	C	C	L	L			L	L	L			L	L	L			L	L	L
330	pF	X	X	C	C	L				L	L				L	L	L			L	L	L
390	pF	X	X	C	C	L				L	L				Z	Z				L	L	Z
470	pF			C	C	L				L	L				Z	Z				L	L	
560	pF			X	X	L				L	L				Z	Z				L	L	
680	pF			X	X	L				L					Z					L	L	
820	pF			L	L	L				L					Z					L	L	
1000	pF			L	L	L		X	X	L					Z			X	X	L	L	
1200	pF							X	X						Z			X	X	L	L	
1500	pF							X	X									X	X	L		
1800	pF							X	X									X	X	L		
2200	pF							X										X	X	L		
2700	pF							X										X	X			
3300	pF																	X	X			
3900	pF																					
4700	pF																					
5600	pF																					
6800	pF																					
8200	pF																					