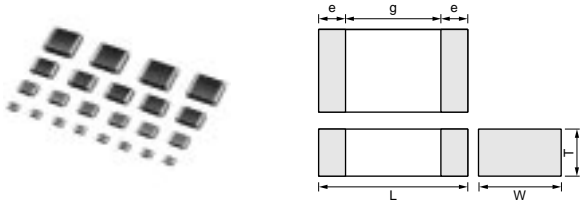


Monolithic Ceramic Capacitors Temperature Compensating EIA

Temperature Compensating Type 25/50V



Part Number	Dimensions (mm)				
	L	W	T	e	g min.
GRP155	1.0 ±0.05	0.5 ±0.05	0.5 ±0.05	0.15 to 0.3	0.4
GRM155					
GRM188*	1.6 ±0.1	0.8 ±0.1	0.8 ±0.1	0.2 to 0.5	0.5
GRM216	2.0 ±0.1	1.25 ±0.1	0.6 ±0.1	0.2 to 0.7	0.7
GRM219			0.85 ±0.1		
GRM21B			1.25 ±0.1		
GRM319	3.2 ±0.15	1.6 ±0.15	0.85 ±0.1	0.3 to 0.8	1.5
GRM31M			1.15 ±0.1		
GRM31C			1.6 ±0.2		

* Bulk Case : 1.6 ±0.07(L)×0.8 ±0.07(W)×0.8 ±0.07(T)

Part Number	TC Code	Rated Voltage (Vdc)	Capacitance*	Length L (mm)	Width W (mm)	Thickness T (mm)
GRP1555C1HR50CZ01	COG (EIA)	50	0.5pF ±0.25pF	1.0	0.5	0.50
GRP1555C1HR75CZ01	COG (EIA)	50	0.75pF ±0.25pF	1.0	0.5	0.50
GRP1555C1H1R0CZ01	COG (EIA)	50	1pF ±0.25pF	1.0	0.5	0.50
GRP15X5C1H1R0CD11	COG (EIA)	50	1pF ±0.25pF	1.0	0.5	0.25
GRP1555C1H2R0CZ01	COG (EIA)	50	2pF ±0.25pF	1.0	0.5	0.50
GRP15X5C1H2R0CD11	COG (EIA)	50	2pF ±0.25pF	1.0	0.5	0.25
GRP1555C1H3R0CZ01	COG (EIA)	50	3pF ±0.25pF	1.0	0.5	0.50
GRP15X5C1H3R0CD11	COG (EIA)	50	3pF ±0.25pF	1.0	0.5	0.25
GRP1555C1H4R0CZ01	COG (EIA)	50	4pF ±0.25pF	1.0	0.5	0.50
GRP15X5C1H4R0CD11	COG (EIA)	50	4pF ±0.25pF	1.0	0.5	0.25
GRP1555C1H5R0CZ01	COG (EIA)	50	5pF ±0.25pF	1.0	0.5	0.50
GRP15X5C1H5R0CD11	COG (EIA)	50	5pF ±0.25pF	1.0	0.5	0.25
GRP1555C1H6R0DZ01	COG (EIA)	50	6pF ±0.5pF	1.0	0.5	0.50
GRP15X5C1H6R0DD11	COG (EIA)	50	6pF ±0.5pF	1.0	0.5	0.25
GRP1555C1H7R0DZ01	COG (EIA)	50	7pF ±0.5pF	1.0	0.5	0.50
GRP15X5C1H7R0DD11	COG (EIA)	50	7pF ±0.5pF	1.0	0.5	0.25
GRP1555C1H8R0DZ01	COG (EIA)	50	8pF ±0.5pF	1.0	0.5	0.50
GRP15X5C1H8R0DD11	COG (EIA)	50	8pF ±0.5pF	1.0	0.5	0.25
GRP1555C1H9R0DZ01	COG (EIA)	50	9pF ±0.5pF	1.0	0.5	0.50
GRP15X5C1H9R0DD11	COG (EIA)	50	9pF ±0.5pF	1.0	0.5	0.25
GRP1555C1H100JZ01	COG (EIA)	50	10pF ±5%	1.0	0.5	0.50
GRP15X5C1H100JD11	COG (EIA)	50	10pF ±5%	1.0	0.5	0.25
GRP1555C1H120JZ01	COG (EIA)	50	12pF ±5%	1.0	0.5	0.50
GRP15X5C1H120JD11	COG (EIA)	50	12pF ±5%	1.0	0.5	0.25
GRP1555C1H150JZ01	COG (EIA)	50	15pF ±5%	1.0	0.5	0.50
GRP15X5C1H150JD11	COG (EIA)	50	15pF ±5%	1.0	0.5	0.25
GRP1555C1H180JZ01	COG (EIA)	50	18pF ±5%	1.0	0.5	0.50
GRP15X5C1H180JD11	COG (EIA)	50	18pF ±5%	1.0	0.5	0.25
GRP1555C1H220JZ01	COG (EIA)	50	22pF ±5%	1.0	0.5	0.50
GRP15X5C1H220JD11	COG (EIA)	50	22pF ±5%	1.0	0.5	0.25
GRP1555C1H270JZ01	COG (EIA)	50	27pF ±5%	1.0	0.5	0.50
GRP15X5C1H270JD11	COG (EIA)	50	27pF ±5%	1.0	0.5	0.25
GRP1555C1H330JZ01	COG (EIA)	50	33pF ±5%	1.0	0.5	0.50
GRP15X5C1H330JD11	COG (EIA)	50	33pF ±5%	1.0	0.5	0.25
GRP1555C1H390JZ01	COG (EIA)	50	39pF ±5%	1.0	0.5	0.50

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Part Number	TC Code	Rated Voltage (Vdc)	Capacitance*	Length L (mm)	Width W (mm)	Thickness T (mm)
GRP15X5C1H390JD11	C0G (EIA)	50	39pF ±5%	1.0	0.5	0.25
GRP1555C1H470JZ01	C0G (EIA)	50	47pF ±5%	1.0	0.5	0.50
GRP15X5C1H470JD11	C0G (EIA)	50	47pF ±5%	1.0	0.5	0.25
GRP1555C1H560JD01	C0G (EIA)	50	56pF ±5%	1.0	0.5	0.50
GRP15X5C1H560JD11	C0G (EIA)	50	56pF ±5%	1.0	0.5	0.25
GRP1555C1H680JD01	C0G (EIA)	50	68pF ±5%	1.0	0.5	0.50
GRP15X5C1H680JD11	C0G (EIA)	50	68pF ±5%	1.0	0.5	0.25
GRP1555C1H820JD01	C0G (EIA)	50	82pF ±5%	1.0	0.5	0.50
GRP15X5C1H820JD11	C0G (EIA)	50	82pF ±5%	1.0	0.5	0.25
GRP1555C1H101JD01	C0G (EIA)	50	100pF ±5%	1.0	0.5	0.50
GRP15X5C1H101JD11	C0G (EIA)	50	100pF ±5%	1.0	0.5	0.25
GRP1555C1H121JA01	C0G (EIA)	50	120pF ±5%	1.0	0.5	0.50
GRP1555C1H151JA01	C0G (EIA)	50	150pF ±5%	1.0	0.5	0.50
GRP1555C1H181JA01	C0G (EIA)	50	180pF ±5%	1.0	0.5	0.50
GRP1555C1H221JA01	C0G (EIA)	50	220pF ±5%	1.0	0.5	0.50
GRP1555C1H271JA01	C0G (EIA)	50	270pF ±5%	1.0	0.5	0.50
GRP1555C1H331JA01	C0G (EIA)	50	330pF ±5%	1.0	0.5	0.50
GRP1555C1H391JA01	C0G (EIA)	50	390pF ±5%	1.0	0.5	0.50
GRP1555C1H471JA01	C0G (EIA)	50	470pF ±5%	1.0	0.5	0.50
GRP15X5C1E121JD11	C0G (EIA)	25	120pF ±5%	1.0	0.5	0.25
GRP15X5C1E151JD11	C0G (EIA)	25	150pF ±5%	1.0	0.5	0.25
GRP15X5C1E181JD11	C0G (EIA)	25	180pF ±5%	1.0	0.5	0.25
GRP15X5C1E221JD11	C0G (EIA)	25	220pF ±5%	1.0	0.5	0.25
GRM1885C1HR50CZ01	C0G (EIA)	50	0.5pF ±0.25pF	1.6	0.8	0.80
GRM1885C1HR75CZ01	C0G (EIA)	50	0.75pF ±0.25pF	1.6	0.8	0.80
GRM1885C1H1R0CZ01	C0G (EIA)	50	1pF ±0.25pF	1.6	0.8	0.80
GRM1885C1H2R0CZ01	C0G (EIA)	50	2pF ±0.25pF	1.6	0.8	0.80
GRM1885C1H3R0CZ01	C0G (EIA)	50	3pF ±0.25pF	1.6	0.8	0.80
GRM1885C1H4R0CZ01	C0G (EIA)	50	4pF ±0.25pF	1.6	0.8	0.80
GRM1885C1H5R0CZ01	C0G (EIA)	50	5pF ±0.25pF	1.6	0.8	0.80
GRM1885C1H6R0DZ01	C0G (EIA)	50	6pF ±0.5pF	1.6	0.8	0.80
GRM1885C1H7R0DZ01	C0G (EIA)	50	7pF ±0.5pF	1.6	0.8	0.80
GRM1885C1H8R0DZ01	C0G (EIA)	50	8pF ±0.5pF	1.6	0.8	0.80
GRM1885C1H9R0DZ01	C0G (EIA)	50	9pF ±0.5pF	1.6	0.8	0.80
GRM1885C1H100JA01	C0G (EIA)	50	10pF ±5%	1.6	0.8	0.80
GRM1885C1H120JA01	C0G (EIA)	50	12pF ±5%	1.6	0.8	0.80
GRM1885C1H150JA01	C0G (EIA)	50	15pF ±5%	1.6	0.8	0.80
GRM1885C1H180JA01	C0G (EIA)	50	18pF ±5%	1.6	0.8	0.80
GRM1885C1H220JA01	C0G (EIA)	50	22pF ±5%	1.6	0.8	0.80
GRM1885C1H270JA01	C0G (EIA)	50	27pF ±5%	1.6	0.8	0.80
GRM1885C1H330JA01	C0G (EIA)	50	33pF ±5%	1.6	0.8	0.80
GRM1885C1H390JA01	C0G (EIA)	50	39pF ±5%	1.6	0.8	0.80
GRM1885C1H470JA01	C0G (EIA)	50	47pF ±5%	1.6	0.8	0.80
GRM1885C1H560JA01	C0G (EIA)	50	56pF ±5%	1.6	0.8	0.80
GRM1885C1H680JA01	C0G (EIA)	50	68pF ±5%	1.6	0.8	0.80
GRM1885C1H820JA01	C0G (EIA)	50	82pF ±5%	1.6	0.8	0.80
GRM1885C1H101JA01	C0G (EIA)	50	100pF ±5%	1.6	0.8	0.80
GRM1885C1H121JA01	C0G (EIA)	50	120pF ±5%	1.6	0.8	0.80
GRM1885C1H151JA01	C0G (EIA)	50	150pF ±5%	1.6	0.8	0.80
GRM1885C1H181JA01	C0G (EIA)	50	180pF ±5%	1.6	0.8	0.80
GRM1885C1H221JA01	C0G (EIA)	50	220pF ±5%	1.6	0.8	0.80
GRM1885C1H271JA01	C0G (EIA)	50	270pF ±5%	1.6	0.8	0.80
GRM1885C1H331JA01	C0G (EIA)	50	330pF ±5%	1.6	0.8	0.80
GRM1885C1H391JA01	C0G (EIA)	50	390pF ±5%	1.6	0.8	0.80
GRM1885C1H471JA01	C0G (EIA)	50	470pF ±5%	1.6	0.8	0.80

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Part Number	TC Code	Rated Voltage (Vdc)	Capacitance*	Length L (mm)	Width W (mm)	Thickness T (mm)
GRM1885C1H561JA01	C0G (EIA)	50	560pF ±5%	1.6	0.8	0.80
GRM1885C1H681JA01	C0G (EIA)	50	680pF ±5%	1.6	0.8	0.80
GRM1885C1H821JA01	C0G (EIA)	50	820pF ±5%	1.6	0.8	0.80
GRM1885C1H102JA01	C0G (EIA)	50	1000pF ±5%	1.6	0.8	0.80
GRM1885C1H122JA01	C0G (EIA)	50	1200pF ±5%	1.6	0.8	0.80
GRM1885C1H152JA01	C0G (EIA)	50	1500pF ±5%	1.6	0.8	0.80
GRM1885C1H182JA01	C0G (EIA)	50	1800pF ±5%	1.6	0.8	0.80
GRM1885C1H222JA01	C0G (EIA)	50	2200pF ±5%	1.6	0.8	0.80
GRM2165C1H182JA01	C0G (EIA)	50	1800pF ±5%	2.0	1.25	0.60
GRM2165C1H222JA01	C0G (EIA)	50	2200pF ±5%	2.0	1.25	0.60
GRM2165C1H272JA01	C0G (EIA)	50	2700pF ±5%	2.0	1.25	0.60
GRM2165C1H332JA01	C0G (EIA)	50	3300pF ±5%	2.0	1.25	0.60
GRM2195C1H392JA01	C0G (EIA)	50	3900pF ±5%	2.0	1.25	0.90
GRM2195C1H472JA01	C0G (EIA)	50	4700pF ±5%	2.0	1.25	0.90
GRM2195C1H562JA01	C0G (EIA)	50	5600pF ±5%	2.0	1.25	0.90
GRM2195C1H682JA01	C0G (EIA)	50	6800pF ±5%	2.0	1.25	0.90
GRM2195C1H822JA01	C0G (EIA)	50	8200pF ±5%	2.0	1.25	0.90
GRM2195C1H103JA01	C0G (EIA)	50	10000pF ±5%	2.0	1.25	0.90
GRM3195C1H562JA01	C0G (EIA)	50	5600pF ±5%	3.2	1.6	0.90
GRM3195C1H682JA01	C0G (EIA)	50	6800pF ±5%	3.2	1.6	0.90
GRM3195C1H822JA01	C0G (EIA)	50	8200pF ±5%	3.2	1.6	0.90
GRM3195C1H103JA01	C0G (EIA)	50	10000pF ±5%	3.2	1.6	0.90
GRM3195C1H273JA01	C0G (EIA)	50	27000pF ±5%	3.2	1.6	0.90
GRM3195C1H333JA01	C0G (EIA)	50	33000pF ±5%	3.2	1.6	0.90
GRM31M5C1H473JA01	C0G (EIA)	50	47000pF ±5%	3.2	1.6	1.15
GRM1886C1E561JD01	C0H (EIA)	25	560pF ±5%	1.6	0.8	0.80
GRM21B6C1E272JD01	C0H (EIA)	25	2700pF ±5%	2.0	1.25	1.25
GRM21B6C1E332JD01	C0H (EIA)	25	3300pF ±5%	2.0	1.25	1.25
GRM21B6C1E392JD01	C0H (EIA)	25	3900pF ±5%	2.0	1.25	1.25
GRM3196C1E682JD01	C0H (EIA)	25	6800pF ±5%	3.2	1.6	0.90
GRM31M6C1E822JD01	C0H (EIA)	25	8200pF ±5%	3.2	1.6	1.15
GRP1556P1H3R0CZ01	P2H (EIA)	50	3pF ±0.25pF	1.0	0.5	0.50
GRP1556P1H4R0CZ01	P2H (EIA)	50	4pF ±0.25pF	1.0	0.5	0.50
GRP1556P1H5R0CZ01	P2H (EIA)	50	5pF ±0.25pF	1.0	0.5	0.50
GRP1556P1H6R0DZ01	P2H (EIA)	50	6pF ±0.5pF	1.0	0.5	0.50
GRP1556P1H7R0DZ01	P2H (EIA)	50	7pF ±0.5pF	1.0	0.5	0.50
GRP1556P1H8R0DZ01	P2H (EIA)	50	8pF ±0.5pF	1.0	0.5	0.50
GRP1556P1H9R0DZ01	P2H (EIA)	50	9pF ±0.5pF	1.0	0.5	0.50
GRP1556P1H100JZ01	P2H (EIA)	50	10pF ±5%	1.0	0.5	0.50
GRP1556P1H120JZ01	P2H (EIA)	50	12pF ±5%	1.0	0.5	0.50
GRP1556P1H150JZ01	P2H (EIA)	50	15pF ±5%	1.0	0.5	0.50
GRP1556P1H180JZ01	P2H (EIA)	50	18pF ±5%	1.0	0.5	0.50
GRP1556P1H220JZ01	P2H (EIA)	50	22pF ±5%	1.0	0.5	0.50
GRP1556P1H270JZ01	P2H (EIA)	50	27pF ±5%	1.0	0.5	0.50
GRM1886P1H3R0CZ01	P2H (EIA)	50	3pF ±0.25pF	1.6	0.8	0.80
GRM1886P1H4R0CZ01	P2H (EIA)	50	4pF ±0.25pF	1.6	0.8	0.80
GRM1886P1H5R0CZ01	P2H (EIA)	50	5pF ±0.25pF	1.6	0.8	0.80
GRM1886P1H6R0DZ01	P2H (EIA)	50	6pF ±0.5pF	1.6	0.8	0.80
GRM1886P1H7R0DZ01	P2H (EIA)	50	7pF ±0.5pF	1.6	0.8	0.80
GRM1886P1H8R0DZ01	P2H (EIA)	50	8pF ±0.5pF	1.6	0.8	0.80
GRM1886P1H9R0DZ01	P2H (EIA)	50	9pF ±0.5pF	1.6	0.8	0.80
GRM1886P1H100JZ01	P2H (EIA)	50	10pF ±5%	1.6	0.8	0.80
GRM1886P1H120JZ01	P2H (EIA)	50	12pF ±5%	1.6	0.8	0.80
GRM1886P1H150JZ01	P2H (EIA)	50	15pF ±5%	1.6	0.8	0.80
GRM1886P1H180JZ01	P2H (EIA)	50	18pF ±5%	1.6	0.8	0.80

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Part Number	TC Code	Rated Voltage (Vdc)	Capacitance*	Length L (mm)	Width W (mm)	Thickness T (mm)
GRM1886P1H220JZ01	P2H (EIA)	50	22pF ±5%	1.6	0.8	0.80
GRM1886P1H270JZ01	P2H (EIA)	50	27pF ±5%	1.6	0.8	0.80
GRM1886P1H330JZ01	P2H (EIA)	50	33pF ±5%	1.6	0.8	0.80
GRM1886P1H390JZ01	P2H (EIA)	50	39pF ±5%	1.6	0.8	0.80
GRM1886P1H470JZ01	P2H (EIA)	50	47pF ±5%	1.6	0.8	0.80
GRM1886P1H560JZ01	P2H (EIA)	50	56pF ±5%	1.6	0.8	0.80
GRM1886P1H680JZ01	P2H (EIA)	50	68pF ±5%	1.6	0.8	0.80
GRM1886P1H820JZ01	P2H (EIA)	50	82pF ±5%	1.6	0.8	0.80
GRM1886P1H101JZ01	P2H (EIA)	50	100pF ±5%	1.6	0.8	0.80
GRM1886P1H121JZ01	P2H (EIA)	50	120pF ±5%	1.6	0.8	0.80
GRM1886P1H151JZ01	P2H (EIA)	50	150pF ±5%	1.6	0.8	0.80
GRM2196P1H181JZ01	P2H (EIA)	50	180pF ±5%	2.0	1.25	0.90
GRM2196P1H221JZ01	P2H (EIA)	50	220pF ±5%	2.0	1.25	0.90
GRM2196P1H271JZ01	P2H (EIA)	50	270pF ±5%	2.0	1.25	0.90
GRM2196P1H331JZ01	P2H (EIA)	50	330pF ±5%	2.0	1.25	0.90
GRM21B6P1H391JZ01	P2H (EIA)	50	390pF ±5%	2.0	1.25	1.25
GRM21B6P1H471JZ01	P2H (EIA)	50	470pF ±5%	2.0	1.25	1.25
GRM21B6P1H561JZ01	P2H (EIA)	50	560pF ±5%	2.0	1.25	1.25
GRM3196P1H681JZ01	P2H (EIA)	50	680pF ±5%	3.2	1.6	0.90
GRM3196P1H821JZ01	P2H (EIA)	50	820pF ±5%	3.2	1.6	0.90
GRM31M6P1H102JZ01	P2H (EIA)	50	1000pF ±5%	3.2	1.6	1.15
GRM31M6P1H122JZ01	P2H (EIA)	50	1200pF ±5%	3.2	1.6	1.15
GRM31M6P1H152JZ01	P2H (EIA)	50	1500pF ±5%	3.2	1.6	1.15
GRP1556R1H3R0CZ01	R2H (EIA)	50	3pF ±0.25pF	1.0	0.5	0.50
GRP1556R1H4R0CZ01	R2H (EIA)	50	4pF ±0.25pF	1.0	0.5	0.50
GRP1556R1H5R0CZ01	R2H (EIA)	50	5pF ±0.25pF	1.0	0.5	0.50
GRP1556R1H6R0DZ01	R2H (EIA)	50	6pF ±0.5pF	1.0	0.5	0.50
GRP1556R1H7R0DZ01	R2H (EIA)	50	7pF ±0.5pF	1.0	0.5	0.50
GRP1556R1H8R0DZ01	R2H (EIA)	50	8pF ±0.5pF	1.0	0.5	0.50
GRP1556R1H9R0DZ01	R2H (EIA)	50	9pF ±0.5pF	1.0	0.5	0.50
GRP1556R1H100JZ01	R2H (EIA)	50	10pF ±5%	1.0	0.5	0.50
GRP1556R1H120JZ01	R2H (EIA)	50	12pF ±5%	1.0	0.5	0.50
GRP1556R1H150JZ01	R2H (EIA)	50	15pF ±5%	1.0	0.5	0.50
GRP1556R1H180JZ01	R2H (EIA)	50	18pF ±5%	1.0	0.5	0.50
GRP1556R1H220JZ01	R2H (EIA)	50	22pF ±5%	1.0	0.5	0.50
GRP1556R1H270JZ01	R2H (EIA)	50	27pF ±5%	1.0	0.5	0.50
GRP1556R1H330JZ01	R2H (EIA)	50	33pF ±5%	1.0	0.5	0.50
GRM1886R1H3R0CZ01	R2H (EIA)	50	3pF ±0.25pF	1.6	0.8	0.80
GRM1886R1H4R0CZ01	R2H (EIA)	50	4pF ±0.25pF	1.6	0.8	0.80
GRM1886R1H5R0CZ01	R2H (EIA)	50	5pF ±0.25pF	1.6	0.8	0.80
GRM1886R1H6R0DZ01	R2H (EIA)	50	6pF ±0.5pF	1.6	0.8	0.80
GRM1886R1H7R0DZ01	R2H (EIA)	50	7pF ±0.5pF	1.6	0.8	0.80
GRM1886R1H8R0DZ01	R2H (EIA)	50	8pF ±0.5pF	1.6	0.8	0.80
GRM1886R1H9R0DZ01	R2H (EIA)	50	9pF ±0.5pF	1.6	0.8	0.80
GRM1886R1H100JZ01	R2H (EIA)	50	10pF ±5%	1.6	0.8	0.80
GRM1886R1H120JZ01	R2H (EIA)	50	12pF ±5%	1.6	0.8	0.80
GRM1886R1H150JZ01	R2H (EIA)	50	15pF ±5%	1.6	0.8	0.80
GRM1886R1H180JZ01	R2H (EIA)	50	18pF ±5%	1.6	0.8	0.80
GRM1886R1H220JZ01	R2H (EIA)	50	22pF ±5%	1.6	0.8	0.80
GRM1886R1H270JZ01	R2H (EIA)	50	27pF ±5%	1.6	0.8	0.80
GRM1886R1H330JZ01	R2H (EIA)	50	33pF ±5%	1.6	0.8	0.80
GRM1886R1H390JZ01	R2H (EIA)	50	39pF ±5%	1.6	0.8	0.80
GRM1886R1H470JZ01	R2H (EIA)	50	47pF ±5%	1.6	0.8	0.80
GRM1886R1H560JZ01	R2H (EIA)	50	56pF ±5%	1.6	0.8	0.80
GRM1886R1H680JZ01	R2H (EIA)	50	68pF ±5%	1.6	0.8	0.80

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Part Number	TC Code	Rated Voltage (Vdc)	Capacitance*	Length L (mm)	Width W (mm)	Thickness T (mm)
GRM1886R1H820JZ01	R2H (EIA)	50	82pF ±5%	1.6	0.8	0.80
GRM1886R1H101JZ01	R2H (EIA)	50	100pF ±5%	1.6	0.8	0.80
GRM1886R1H121JZ01	R2H (EIA)	50	120pF ±5%	1.6	0.8	0.80
GRM1886R1H151JZ01	R2H (EIA)	50	150pF ±5%	1.6	0.8	0.80
GRM1886R1H181JZ01	R2H (EIA)	50	180pF ±5%	1.6	0.8	0.80
GRM2196R1H221JZ01	R2H (EIA)	50	220pF ±5%	2.0	1.25	0.90
GRM2196R1H271JZ01	R2H (EIA)	50	270pF ±5%	2.0	1.25	0.90
GRM2196R1H331JZ01	R2H (EIA)	50	330pF ±5%	2.0	1.25	0.90
GRM2196R1H391JZ01	R2H (EIA)	50	390pF ±5%	2.0	1.25	0.90
GRM2196R1H471JZ01	R2H (EIA)	50	470pF ±5%	2.0	1.25	0.90
GRM21B6R1H561JZ01	R2H (EIA)	50	560pF ±5%	2.0	1.25	1.25
GRM21B6R1H681JZ01	R2H (EIA)	50	680pF ±5%	2.0	1.25	1.25
GRM3196R1H821JZ01	R2H (EIA)	50	820pF ±5%	3.2	1.6	0.90
GRM31M6R1H102JZ01	R2H (EIA)	50	1000pF ±5%	3.2	1.6	1.15
GRM31M6R1H122JZ01	R2H (EIA)	50	1200pF ±5%	3.2	1.6	1.15
GRM31M6R1H152JZ01	R2H (EIA)	50	1500pF ±5%	3.2	1.6	1.15
GRP1556S1H3R0CZ01	S2H (EIA)	50	3pF ±0.25pF	1.0	0.5	0.50
GRP1556S1H4R0CZ01	S2H (EIA)	50	4pF ±0.25pF	1.0	0.5	0.50
GRP1556S1H5R0CZ01	S2H (EIA)	50	5pF ±0.25pF	1.0	0.5	0.50
GRP1556S1H6R0DZ01	S2H (EIA)	50	6pF ±0.5pF	1.0	0.5	0.50
GRP1556S1H7R0DZ01	S2H (EIA)	50	7pF ±0.5pF	1.0	0.5	0.50
GRP1556S1H8R0DZ01	S2H (EIA)	50	8pF ±0.5pF	1.0	0.5	0.50
GRP1556S1H9R0DZ01	S2H (EIA)	50	9pF ±0.5pF	1.0	0.5	0.50
GRP1556S1H100JZ01	S2H (EIA)	50	10pF ±5%	1.0	0.5	0.50
GRP1556S1H120JZ01	S2H (EIA)	50	12pF ±5%	1.0	0.5	0.50
GRP1556S1H150JZ01	S2H (EIA)	50	15pF ±5%	1.0	0.5	0.50
GRP1556S1H180JZ01	S2H (EIA)	50	18pF ±5%	1.0	0.5	0.50
GRP1556S1H220JZ01	S2H (EIA)	50	22pF ±5%	1.0	0.5	0.50
GRP1556S1H270JZ01	S2H (EIA)	50	27pF ±5%	1.0	0.5	0.50
GRP1556S1H330JZ01	S2H (EIA)	50	33pF ±5%	1.0	0.5	0.50
GRP1556S1H390JZ01	S2H (EIA)	50	39pF ±5%	1.0	0.5	0.50
GRM1886S1H3R0CZ01	S2H (EIA)	50	3pF ±0.25pF	1.6	0.8	0.80
GRM1886S1H4R0CZ01	S2H (EIA)	50	4pF ±0.25pF	1.6	0.8	0.80
GRM1886S1H5R0CZ01	S2H (EIA)	50	5pF ±0.25pF	1.6	0.8	0.80
GRM1886S1H6R0DZ01	S2H (EIA)	50	6pF ±0.5pF	1.6	0.8	0.80
GRM1886S1H7R0DZ01	S2H (EIA)	50	7pF ±0.5pF	1.6	0.8	0.80
GRM1886S1H8R0DZ01	S2H (EIA)	50	8pF ±0.5pF	1.6	0.8	0.80
GRM1886S1H9R0DZ01	S2H (EIA)	50	9pF ±0.5pF	1.6	0.8	0.80
GRM1886S1H100JZ01	S2H (EIA)	50	10pF ±5%	1.6	0.8	0.80
GRM1886S1H120JZ01	S2H (EIA)	50	12pF ±5%	1.6	0.8	0.80
GRM1886S1H150JZ01	S2H (EIA)	50	15pF ±5%	1.6	0.8	0.80
GRM1886S1H180JZ01	S2H (EIA)	50	18pF ±5%	1.6	0.8	0.80
GRM1886S1H220JZ01	S2H (EIA)	50	22pF ±5%	1.6	0.8	0.80
GRM1886S1H270JZ01	S2H (EIA)	50	27pF ±5%	1.6	0.8	0.80
GRM1886S1H330JZ01	S2H (EIA)	50	33pF ±5%	1.6	0.8	0.80
GRM1886S1H390JZ01	S2H (EIA)	50	39pF ±5%	1.6	0.8	0.80
GRM1886S1H470JZ01	S2H (EIA)	50	47pF ±5%	1.6	0.8	0.80
GRM1886S1H560JZ01	S2H (EIA)	50	56pF ±5%	1.6	0.8	0.80
GRM1886S1H680JZ01	S2H (EIA)	50	68pF ±5%	1.6	0.8	0.80
GRM1886S1H820JZ01	S2H (EIA)	50	82pF ±5%	1.6	0.8	0.80
GRM1886S1H101JZ01	S2H (EIA)	50	100pF ±5%	1.6	0.8	0.80
GRM1886S1H121JZ01	S2H (EIA)	50	120pF ±5%	1.6	0.8	0.80
GRM1886S1H151JZ01	S2H (EIA)	50	150pF ±5%	1.6	0.8	0.80
GRM1886S1H181JZ01	S2H (EIA)	50	180pF ±5%	1.6	0.8	0.80
GRM1886S1H221JZ01	S2H (EIA)	50	220pF ±5%	1.6	0.8	0.80

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Part Number	TC Code	Rated Voltage (Vdc)	Capacitance*	Length L (mm)	Width W (mm)	Thickness T (mm)
GRM2196S1H271JZ01	S2H (EIA)	50	270pF ±5%	2.0	1.25	0.90
GRM2196S1H331JZ01	S2H (EIA)	50	330pF ±5%	2.0	1.25	0.90
GRM2196S1H391JZ01	S2H (EIA)	50	390pF ±5%	2.0	1.25	0.90
GRM2196S1H471JZ01	S2H (EIA)	50	470pF ±5%	2.0	1.25	0.90
GRM21B6S1H561JZ01	S2H (EIA)	50	560pF ±5%	2.0	1.25	1.25
GRM21B6S1H681JZ01	S2H (EIA)	50	680pF ±5%	2.0	1.25	1.25
GRM21B6S1H821JZ01	S2H (EIA)	50	820pF ±5%	2.0	1.25	1.25
GRM3196S1H102JZ01	S2H (EIA)	50	1000pF ±5%	3.2	1.6	0.90
GRM31M6S1H122JZ01	S2H (EIA)	50	1200pF ±5%	3.2	1.6	1.15
GRM31M6S1H152JZ01	S2H (EIA)	50	1500pF ±5%	3.2	1.6	1.15
GRM31M6S1H182JZ01	S2H (EIA)	50	1800pF ±5%	3.2	1.6	1.15
GRP1556T1H3R0CD01	T2H (EIA)	50	3pF ±0.25pF	1.0	0.5	0.50
GRP1556T1H4R0CD01	T2H (EIA)	50	4pF ±0.25pF	1.0	0.5	0.50
GRP1556T1H5R0CD01	T2H (EIA)	50	5pF ±0.25pF	1.0	0.5	0.50
GRP1556T1H6R0DD01	T2H (EIA)	50	6pF ±0.5pF	1.0	0.5	0.50
GRP1556T1H7R0DD01	T2H (EIA)	50	7pF ±0.5pF	1.0	0.5	0.50
GRP1556T1H8R0DD01	T2H (EIA)	50	8pF ±0.5pF	1.0	0.5	0.50
GRP1556T1H9R0DD01	T2H (EIA)	50	9pF ±0.5pF	1.0	0.5	0.50
GRP1556T1H100JD01	T2H (EIA)	50	10pF ±5%	1.0	0.5	0.50
GRP1556T1H120JD01	T2H (EIA)	50	12pF ±5%	1.0	0.5	0.50
GRP1556T1H150JD01	T2H (EIA)	50	15pF ±5%	1.0	0.5	0.50
GRP1556T1H180JD01	T2H (EIA)	50	18pF ±5%	1.0	0.5	0.50
GRP1556T1H220JD01	T2H (EIA)	50	22pF ±5%	1.0	0.5	0.50
GRP1556T1H270JD01	T2H (EIA)	50	27pF ±5%	1.0	0.5	0.50
GRP1556T1H330JD01	T2H (EIA)	50	33pF ±5%	1.0	0.5	0.50
GRP1556T1H390JD01	T2H (EIA)	50	39pF ±5%	1.0	0.5	0.50
GRP1556T1H470JD01	T2H (EIA)	50	47pF ±5%	1.0	0.5	0.50
GRP1556T1H560JD01	T2H (EIA)	50	56pF ±5%	1.0	0.5	0.50
GRP1556T1H680JD01	T2H (EIA)	50	68pF ±5%	1.0	0.5	0.50
GRP1556T1H820JD01	T2H (EIA)	50	82pF ±5%	1.0	0.5	0.50
GRP1556T1H101JD01	T2H (EIA)	50	100pF ±5%	1.0	0.5	0.50
GRM1886T1H3R0CD01	T2H (EIA)	50	3pF ±0.25pF	1.6	0.8	0.80
GRM1886T1H4R0CD01	T2H (EIA)	50	4pF ±0.25pF	1.6	0.8	0.80
GRM1886T1H5R0CD01	T2H (EIA)	50	5pF ±0.25pF	1.6	0.8	0.80
GRM1886T1H6R0DD01	T2H (EIA)	50	6pF ±0.5pF	1.6	0.8	0.80
GRM1886T1H7R0DD01	T2H (EIA)	50	7pF ±0.5pF	1.6	0.8	0.80
GRM1886T1H8R0DD01	T2H (EIA)	50	8pF ±0.5pF	1.6	0.8	0.80
GRM1886T1H9R0DD01	T2H (EIA)	50	9pF ±0.5pF	1.6	0.8	0.80
GRM1886T1H100JZ01	T2H (EIA)	50	10pF ±5%	1.6	0.8	0.80
GRM1886T1H120JD01	T2H (EIA)	50	12pF ±5%	1.6	0.8	0.80
GRM1886T1H150JD01	T2H (EIA)	50	15pF ±5%	1.6	0.8	0.80
GRM1886T1H180JD01	T2H (EIA)	50	18pF ±5%	1.6	0.8	0.80
GRM1886T1H220JD01	T2H (EIA)	50	22pF ±5%	1.6	0.8	0.80
GRM1886T1H270JD01	T2H (EIA)	50	27pF ±5%	1.6	0.8	0.80
GRM1886T1H330JD01	T2H (EIA)	50	33pF ±5%	1.6	0.8	0.80
GRM1886T1H390JD01	T2H (EIA)	50	39pF ±5%	1.6	0.8	0.80
GRM1886T1H470JD01	T2H (EIA)	50	47pF ±5%	1.6	0.8	0.80
GRM1886T1H560JD01	T2H (EIA)	50	56pF ±5%	1.6	0.8	0.80
GRM1886T1H680JD01	T2H (EIA)	50	68pF ±5%	1.6	0.8	0.80
GRM1886T1H820JD01	T2H (EIA)	50	82pF ±5%	1.6	0.8	0.80
GRM1886T1H101JD01	T2H (EIA)	50	100pF ±5%	1.6	0.8	0.80
GRM1886T1H121JD01	T2H (EIA)	50	120pF ±5%	1.6	0.8	0.80
GRM1886T1H151JD01	T2H (EIA)	50	150pF ±5%	1.6	0.8	0.80
GRM1886T1H181JD01	T2H (EIA)	50	180pF ±5%	1.6	0.8	0.80
GRM1886T1H221JD01	T2H (EIA)	50	220pF ±5%	1.6	0.8	0.80

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Part Number	TC Code	Rated Voltage (Vdc)	Capacitance*	Length L (mm)	Width W (mm)	Thickness T (mm)
GRM1886T1H271JD01	T2H (EIA)	50	270pF ±5%	1.6	0.8	0.80
GRM1886T1H331JD01	T2H (EIA)	50	330pF ±5%	1.6	0.8	0.80
GRM1886T1H391JD01	T2H (EIA)	50	390pF ±5%	1.6	0.8	0.80
GRM21B6T1H561JD01	T2H (EIA)	50	560pF ±5%	2.0	1.25	1.25
GRM21B6T1H681JD01	T2H (EIA)	50	680pF ±5%	2.0	1.25	1.25
GRM21B6T1H821JD01	T2H (EIA)	50	820pF ±5%	2.0	1.25	1.25
GRM21B6T1H102JD01	T2H (EIA)	50	1000pF ±5%	2.0	1.25	1.25
GRM21B6T1H122JD01	T2H (EIA)	50	1200pF ±5%	2.0	1.25	1.25
GRM21B6T1H152JD01	T2H (EIA)	50	1500pF ±5%	2.0	1.25	1.25
GRM21B6T1H182JD01	T2H (EIA)	50	1800pF ±5%	2.0	1.25	1.25
GRM31M6T1H222JD01	T2H (EIA)	50	2200pF ±5%	3.2	1.6	1.15
GRM31M6T1H272JD01	T2H (EIA)	50	2700pF ±5%	3.2	1.6	1.15
GRM31M6T1H332JD01	T2H (EIA)	50	3300pF ±5%	3.2	1.6	1.15
GRM31M6T1H392JD01	T2H (EIA)	50	3900pF ±5%	3.2	1.6	1.15
GRP1557U1H3R0CZ01	U2J (EIA)	50	3pF ±0.25pF	1.0	0.5	0.50
GRP1557U1H4R0CZ01	U2J (EIA)	50	4pF ±0.25pF	1.0	0.5	0.50
GRP1557U1H5R0CZ01	U2J (EIA)	50	5pF ±0.25pF	1.0	0.5	0.50
GRP1557U1H6R0DZ01	U2J (EIA)	50	6pF ±0.5pF	1.0	0.5	0.50
GRP1557U1H7R0DZ01	U2J (EIA)	50	7pF ±0.5pF	1.0	0.5	0.50
GRP1557U1H8R0DZ01	U2J (EIA)	50	8pF ±0.5pF	1.0	0.5	0.50
GRP1557U1H9R0DZ01	U2J (EIA)	50	9pF ±0.5pF	1.0	0.5	0.50
GRP1557U1H100JZ01	U2J (EIA)	50	10pF ±5%	1.0	0.5	0.50
GRP1557U1H120JZ01	U2J (EIA)	50	12pF ±5%	1.0	0.5	0.50
GRP1557U1H150JZ01	U2J (EIA)	50	15pF ±5%	1.0	0.5	0.50
GRP1557U1H180JZ01	U2J (EIA)	50	18pF ±5%	1.0	0.5	0.50
GRP1557U1H220JZ01	U2J (EIA)	50	22pF ±5%	1.0	0.5	0.50
GRP1557U1H270JZ01	U2J (EIA)	50	27pF ±5%	1.0	0.5	0.50
GRP1557U1H330JZ01	U2J (EIA)	50	33pF ±5%	1.0	0.5	0.50
GRP1557U1H390JZ01	U2J (EIA)	50	39pF ±5%	1.0	0.5	0.50
GRP1557U1H470JZ01	U2J (EIA)	50	47pF ±5%	1.0	0.5	0.50
GRP1557U1H560JZ01	U2J (EIA)	50	56pF ±5%	1.0	0.5	0.50
GRP1557U1H680JZ01	U2J (EIA)	50	68pF ±5%	1.0	0.5	0.50
GRP1557U1H820JZ01	U2J (EIA)	50	82pF ±5%	1.0	0.5	0.50
GRP1557U1H101JZ01	U2J (EIA)	50	100pF ±5%	1.0	0.5	0.50
GRP1557U1H121JZ01	U2J (EIA)	50	120pF ±5%	1.0	0.5	0.50
GRP1557U1H151JZ01	U2J (EIA)	50	150pF ±5%	1.0	0.5	0.50
GRP1557U1H181JZ01	U2J (EIA)	50	180pF ±5%	1.0	0.5	0.50
GRM1887U1H3R0CZ01	U2J (EIA)	50	3pF ±0.25pF	1.6	0.8	0.80
GRM1887U1H4R0CZ01	U2J (EIA)	50	4pF ±0.25pF	1.6	0.8	0.80
GRM1887U1H5R0CZ01	U2J (EIA)	50	5pF ±0.25pF	1.6	0.8	0.80
GRM1887U1H6R0DZ01	U2J (EIA)	50	6pF ±0.5pF	1.6	0.8	0.80
GRM1887U1H7R0DZ01	U2J (EIA)	50	7pF ±0.5pF	1.6	0.8	0.80
GRM1887U1H8R0DZ01	U2J (EIA)	50	8pF ±0.5pF	1.6	0.8	0.80
GRM1887U1H9R0DZ01	U2J (EIA)	50	9pF ±0.5pF	1.6	0.8	0.80
GRM1887U1H100JZ01	U2J (EIA)	50	10pF ±5%	1.6	0.8	0.80
GRM1887U1H120JZ01	U2J (EIA)	50	12pF ±5%	1.6	0.8	0.80
GRM1887U1H150JZ01	U2J (EIA)	50	15pF ±5%	1.6	0.8	0.80
GRM1887U1H180JZ01	U2J (EIA)	50	18pF ±5%	1.6	0.8	0.80
GRM1887U1H220JZ01	U2J (EIA)	50	22pF ±5%	1.6	0.8	0.80
GRM1887U1H270JZ01	U2J (EIA)	50	27pF ±5%	1.6	0.8	0.80
GRM1887U1H330JZ01	U2J (EIA)	50	33pF ±5%	1.6	0.8	0.80
GRM1887U1H390JZ01	U2J (EIA)	50	39pF ±5%	1.6	0.8	0.80
GRM1887U1H470JZ01	U2J (EIA)	50	47pF ±5%	1.6	0.8	0.80
GRM1887U1H560JZ01	U2J (EIA)	50	56pF ±5%	1.6	0.8	0.80
GRM1887U1H680JZ01	U2J (EIA)	50	68pF ±5%	1.6	0.8	0.80

Continued on the following page.

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Continued from the preceding page.

Part Number	TC Code	Rated Voltage (Vdc)	Capacitance*	Length L (mm)	Width W (mm)	Thickness T (mm)
GRM1887U1H820JZ01	U2J (EIA)	50	82pF ±5%	1.6	0.8	0.80
GRM1887U1H101JZ01	U2J (EIA)	50	100pF ±5%	1.6	0.8	0.80
GRM1887U1H121JZ01	U2J (EIA)	50	120pF ±5%	1.6	0.8	0.80
GRM1887U1H151JZ01	U2J (EIA)	50	150pF ±5%	1.6	0.8	0.80
GRM1887U1H181JZ01	U2J (EIA)	50	180pF ±5%	1.6	0.8	0.80
GRM1887U1H221JZ01	U2J (EIA)	50	220pF ±5%	1.6	0.8	0.80
GRM1887U1H271JZ01	U2J (EIA)	50	270pF ±5%	1.6	0.8	0.80
GRM1887U1H331JZ01	U2J (EIA)	50	330pF ±5%	1.6	0.8	0.80
GRM1887U1H391JZ01	U2J (EIA)	50	390pF ±5%	1.6	0.8	0.80
GRM1887U1H471JZ01	U2J (EIA)	50	470pF ±5%	1.6	0.8	0.80
GRM1887U1H561JZ01	U2J (EIA)	50	560pF ±5%	1.6	0.8	0.80
GRM1887U1H681JZ01	U2J (EIA)	50	680pF ±5%	1.6	0.8	0.80
GRM2167U1H821JZ01	U2J (EIA)	50	820pF ±5%	2.0	1.25	0.60
GRM2167U1H102JZ01	U2J (EIA)	50	1000pF ±5%	2.0	1.25	0.60
GRM2167U1H122JZ01	U2J (EIA)	50	1200pF ±5%	2.0	1.25	0.60
GRM2197U1H152JZ01	U2J (EIA)	50	1500pF ±5%	2.0	1.25	0.90
GRM2197U1H182JZ01	U2J (EIA)	50	1800pF ±5%	2.0	1.25	0.90
GRM2197U1H222JZ01	U2J (EIA)	50	2200pF ±5%	2.0	1.25	0.90
GRM21B7U1H272JZ01	U2J (EIA)	50	2700pF ±5%	2.0	1.25	1.25
GRM21B7U1H332JZ01	U2J (EIA)	50	3300pF ±5%	2.0	1.25	1.25
GRM3197U1H392JZ01	U2J (EIA)	50	3900pF ±5%	3.2	1.6	0.90
GRM3197U1H472JZ01	U2J (EIA)	50	4700pF ±5%	3.2	1.6	0.90
GRM3197U1H562JZ01	U2J (EIA)	50	5600pF ±5%	3.2	1.6	0.90
GRM31M7U1H682JZ01	U2J (EIA)	50	6800pF ±5%	3.2	1.6	1.15
GRM31M7U1H822JZ01	U2J (EIA)	50	8200pF ±5%	3.2	1.6	1.15

Monolithic Ceramic Capacitors Temperature Compensating EIA

Temperature Compensating Type 100V

Part Number	TC Code	Rated Voltage (Vdc)	Capacitance*	Length L (mm)	Width W (mm)	Thickness T (mm)
GRM1885C2A120JZ01	C0G (EIA)	100	12pF ±5%	1.6	0.8	0.80
GRM1885C2A150JZ01	C0G (EIA)	100	15pF ±5%	1.6	0.8	0.80
GRM1885C2A180JZ01	C0G (EIA)	100	18pF ±5%	1.6	0.8	0.80
GRM1885C2A220JZ01	C0G (EIA)	100	22pF ±5%	1.6	0.8	0.80
GRM1885C2A270JZ01	C0G (EIA)	100	27pF ±5%	1.6	0.8	0.80
GRM1885C2A390JZ01	C0G (EIA)	100	39pF ±5%	1.6	0.8	0.80
GRM1885C2A330JZ01	C0G (EIA)	100	33pF ±5%	1.6	0.8	0.80
GRM1885C2A470JZ01	C0G (EIA)	100	47pF ±5%	1.6	0.8	0.80
GRM1885C2A560JZ01	C0G (EIA)	100	56pF ±5%	1.6	0.8	0.80
GRM1885C2A680JZ01	C0G (EIA)	100	68pF ±5%	1.6	0.8	0.80
GRM1885C2A820JZ01	C0G (EIA)	100	82pF ±5%	1.6	0.8	0.80
GRM1885C2A101JZ01	C0G (EIA)	100	100pF ±5%	1.6	0.8	0.80
GRM1885C2A121JD01	C0G (EIA)	100	120pF ±5%	1.6	0.8	0.80
GRM1885C2A151JD01	C0G (EIA)	100	150pF ±5%	1.6	0.8	0.80
GRM2195C2A680JZ01	C0G (EIA)	100	68pF ±5%	2.0	1.25	0.90
GRM2195C2A820JZ01	C0G (EIA)	100	82pF ±5%	2.0	1.25	0.90
GRM2195C2A101JZ01	C0G (EIA)	100	100pF ±5%	2.0	1.25	0.90
GRM2195C2A121JZ01	C0G (EIA)	100	120pF ±5%	2.0	1.25	0.90
GRM2195C2A151JZ01	C0G (EIA)	100	150pF ±5%	2.0	1.25	0.90
GRM2195C2A181JZ01	C0G (EIA)	100	180pF ±5%	2.0	1.25	0.90
GRM2195C2A221JZ01	C0G (EIA)	100	220pF ±5%	2.0	1.25	0.90
GRM2195C2A271JZ01	C0G (EIA)	100	270pF ±5%	2.0	1.25	0.90
GRM2195C2A331JZ01	C0G (EIA)	100	330pF ±5%	2.0	1.25	0.90
GRM21B5C2A391JZ01	C0G (EIA)	100	390pF ±5%	2.0	1.25	1.25
GRM21B5C2A471JZ01	C0G (EIA)	100	470pF ±5%	2.0	1.25	1.25
GRM21B5C2A561JD01	C0G (EIA)	100	560pF ±5%	2.0	1.25	1.25
GRM21B5C2A681JD01	C0G (EIA)	100	680pF ±5%	2.0	1.25	1.25
GRM21B5C2A821JD01	C0G (EIA)	100	820pF ±5%	2.0	1.25	1.25
GRM21B5C2A102JD01	C0G (EIA)	100	1000pF ±5%	2.0	1.25	1.25

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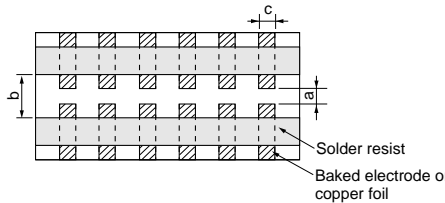
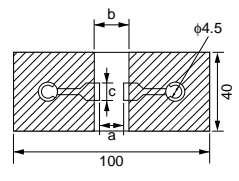
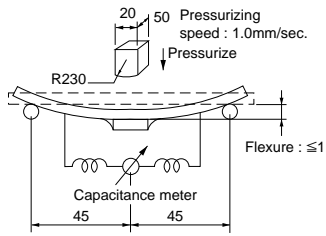
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Specifications and Test Methods

No.	Item	Specification		Test Method																								
		Temperature Compensating Type	High Dielectric Type																									
1	Operating Temperature	-55 to +125°C	R6 : -55 to +85°C R7 : -55 to +125°C E4 : +10 to +85°C F5 : -30 to +85°C																									
2	Rated Voltage	See the previous page.		The rated voltage is defined as the maximum voltage which may be applied continuously to the capacitor. When AC voltage is superimposed on DC voltage, V ^{P-P} or V ^{O-P} , whichever is larger, shall be maintained within the rated voltage range.																								
3	Appearance	No defects or abnormalities.		Visual inspection.																								
4	Dimensions	Within the specified dimensions.		Using calipers on micrometer.																								
5	Dielectric Strength	No defects or abnormalities.		No failure shall be observed when *300% of the rated voltage (C0Δ to U2J and SL) or *250% of the rated voltage (X5R, X7R, Z5U and Y5V) is applied between the terminations for 1 to 5 seconds, provided the charge/discharge current is less than 50mA. *200% for 500V																								
6	Insulation Resistance	More than 10,000MΩ or 500Ω • F (Whichever is smaller)		The insulation resistance shall be measured with a DC voltage not exceeding the rated voltage at 25°C and 75%RH max. and within 2 minutes of charging.																								
7	Capacitance	Within the specified tolerance.		The capacitance/Q/D.F. shall be measured at 25°C at the frequency and voltage shown in the table.																								
8	Q/ Dissipation Factor (D.F.)	30pFmin. : Q≥1000 30pFmax. : Q≥400+20C C : Nominal Capacitance (pF)	[R6, R7] W.V. : 25Vmin. : 0.025max. W.V. : 16/10V : 0.035max. W.V. : 6.3V 0.05max.(C<3.3μF) 0.1max.(C≥3.3μF)	<table border="1"> <thead> <tr> <th>Item</th> <th>Char.</th> <th>Frequency</th> <th>Voltage</th> </tr> </thead> <tbody> <tr> <td>ΔC to 7U, 1X (1000pF and below)</td> <td></td> <td>1±0.1MHz</td> <td>0.5 to 5Vrms</td> </tr> <tr> <td>ΔC to 7U, 1X (more than 1000pF)</td> <td></td> <td>1±0.1kHz</td> <td>1±0.2Vrms</td> </tr> <tr> <td>R6, R7, F5 (10μF and below)</td> <td></td> <td>1±0.1kHz</td> <td>1±0.2Vrms</td> </tr> <tr> <td>R6, R7, F5 (more than 10μF)</td> <td></td> <td>120±24Hz</td> <td>0.5±0.1Vrms</td> </tr> <tr> <td>E4</td> <td></td> <td>1±0.1kHz</td> <td>0.5±0.05Vrms</td> </tr> </tbody> </table>	Item	Char.	Frequency	Voltage	ΔC to 7U, 1X (1000pF and below)		1±0.1MHz	0.5 to 5Vrms	ΔC to 7U, 1X (more than 1000pF)		1±0.1kHz	1±0.2Vrms	R6, R7, F5 (10μF and below)		1±0.1kHz	1±0.2Vrms	R6, R7, F5 (more than 10μF)		120±24Hz	0.5±0.1Vrms	E4		1±0.1kHz	0.5±0.05Vrms
			Item		Char.	Frequency	Voltage																					
ΔC to 7U, 1X (1000pF and below)		1±0.1MHz	0.5 to 5Vrms																									
ΔC to 7U, 1X (more than 1000pF)		1±0.1kHz	1±0.2Vrms																									
R6, R7, F5 (10μF and below)		1±0.1kHz	1±0.2Vrms																									
R6, R7, F5 (more than 10μF)		120±24Hz	0.5±0.1Vrms																									
E4		1±0.1kHz	0.5±0.05Vrms																									
[E4] W.V. : 25Vmin. : 0.025max.																												
[F5] W.V. : 25Vmin. : 0.05max.(C<10μF) : 0.09max.(C≥1.0μF) W.V. : 16V : 0.07max.(C<1.0μF) : 0.09max.(C≥1.0μF) W.V. : 10Vmax. : 0.125max.																												
9	Capacitance Change	Within the specified tolerance. (Table A)	R6 : Within±15% (-55 to +85°C) R7 : Within±15% (-55 to +125°C) E4 : Within +22/-56% (+10 to +85°C) F5 : Within +22/-82% (-30 to +85°C)	<p>The capacitance change shall be measured after 5 Min. at each specified temperature stage.</p> <p>(1) Temperature Compensating Type</p> <p>The temperature coefficient is determined using the Capacitance measured in step 3 as a reference.</p> <p>When cycling the temperature sequentially from step 1 through 5 (C0Δ : +25°C to +125°C : other temp. coeffs. : +25°C to +85°C) the capacitance shall be within the specified tolerance for the temperature coefficient and capacitance change as Table A.</p> <p>The capacitance drift is calculated by dividing the differences between the maximum and minimum measured values in the step 1,3 and 5 by the cap value in step 3.</p> <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature(°C)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>25±2</td> </tr> <tr> <td>2</td> <td>-55±3 (for ΔC to 7U/1X/R6/R7) -30±3 (for F5) 10±3 (for E4)</td> </tr> <tr> <td>3</td> <td>25±2</td> </tr> <tr> <td>4</td> <td>125±3 (for ΔC/R7) 85±3 (for other TC)</td> </tr> <tr> <td>5</td> <td>25±2</td> </tr> </tbody> </table> <p>(2) High Dielectric Constant Type</p> <p>The ranges of capacitance change compared with the above 25°C value over the temperature ranges shown in the table shall be within the specified ranges.</p>	Step	Temperature(°C)	1	25±2	2	-55±3 (for ΔC to 7U/1X/R6/R7) -30±3 (for F5) 10±3 (for E4)	3	25±2	4	125±3 (for ΔC/R7) 85±3 (for other TC)	5	25±2												
		Step	Temperature(°C)																									
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4	125±3 (for ΔC/R7) 85±3 (for other TC)																											
5	25±2																											
Temperature Coefficient	Within the specified tolerance. (Table A)	—																										
Capacitance Drift	Within ±0.2% or ±0.05pF (Whichever is larger.) *Not apply to 1X/25V	—																										

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No.	Item	Specification		Test Method																																				
		Temperature Compensating Type	High Dielectric Type																																					
10	Adhesive Strength of Termination	No removal of the terminations or other defect shall occur.		<p>Solder the capacitor to the test jig (glass epoxy board) shown in Fig.1 using a eutectic solder. Then apply 10N* force in parallel with the test jig for 10±1sec. The soldering shall be done either with an iron or using the reflow method and shall be conducted with care so that the soldering is uniform and free of defects such as heat shock. *2N (GRP03) 5N (GRP15, GRM18)</p>  <table border="1" data-bbox="938 616 1452 840"> <thead> <tr> <th>Type</th> <th>a</th> <th>b</th> <th>c</th> </tr> </thead> <tbody> <tr> <td>GRP03</td> <td>0.3</td> <td>0.9</td> <td>0.3</td> </tr> <tr> <td>GRP15</td> <td>0.4</td> <td>1.5</td> <td>0.5</td> </tr> <tr> <td>GRM18</td> <td>1.0</td> <td>3.0</td> <td>1.2</td> </tr> <tr> <td>GRM21</td> <td>1.2</td> <td>4.0</td> <td>1.65</td> </tr> <tr> <td>GRM31</td> <td>2.2</td> <td>5.0</td> <td>2.0</td> </tr> <tr> <td>GRM32</td> <td>2.2</td> <td>5.0</td> <td>2.9</td> </tr> <tr> <td>GRM43</td> <td>3.5</td> <td>7.0</td> <td>3.7</td> </tr> <tr> <td>GRM55</td> <td>4.5</td> <td>8.0</td> <td>5.6</td> </tr> </tbody> </table> <p style="text-align: right;">(in mm)</p>	Type	a	b	c	GRP03	0.3	0.9	0.3	GRP15	0.4	1.5	0.5	GRM18	1.0	3.0	1.2	GRM21	1.2	4.0	1.65	GRM31	2.2	5.0	2.0	GRM32	2.2	5.0	2.9	GRM43	3.5	7.0	3.7	GRM55	4.5	8.0	5.6
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GRM55	4.5	8.0	5.6																																					
Fig.1																																								
11	Appearance	No defects or abnormalities.		<p>Solder the capacitor to the test jig (glass epoxy board) in the same manner and under the same conditions as (10). The capacitor shall be subjected to a simple harmonic motion having a total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10 and 55Hz. The frequency range, from 10 to 55Hz and return to 10Hz, shall be traversed in approximately 1 minute. This motion shall be applied for a period of 2 hours in each 3 mutually perpendicular directions (total of 6 hours).</p>																																				
	Capacitance	Within the specified tolerance.																																						
11	Vibration Resistance	Q/D.F.	<p>30pFmin. : $Q \geq 1000$ 30pFmax. : $Q \geq 400 + 20C$ C : Nominal Capacitance (pF)</p>	<p>[R6, R7] W.V. : 25Vmin. : 0.025max. W.V. : 16/10V : 0.035max. W.V. : 6.3V : 0.05max. (C<3.3μF) 0.1max. (C≥3.3μF)</p> <p>[E4] W.V. : 25Vmin. : 0.025max.</p> <p>[F5] W.V. : 25Vmin. : 0.05max. (C<1.0μF) : 0.09max. (C≥1.0μF)</p> <p>W.V. : 16V : 0.07max. (C<1.0μF) : 0.09max. (C≥1.0μF)</p> <p>W.V. : 10Vmax.:0.125max.</p>																																				
			No crack or marked defect shall occur.																																					
12	Deflection	 <table border="1" data-bbox="367 1758 885 1993"> <thead> <tr> <th>Type</th> <th>a</th> <th>b</th> <th>c</th> </tr> </thead> <tbody> <tr> <td>GRP03</td> <td>0.3</td> <td>0.9</td> <td>0.3</td> </tr> <tr> <td>GRP15</td> <td>0.4</td> <td>1.5</td> <td>0.5</td> </tr> <tr> <td>GRM18</td> <td>1.0</td> <td>3.0</td> <td>1.2</td> </tr> <tr> <td>GRM21</td> <td>1.2</td> <td>4.0</td> <td>1.65</td> </tr> <tr> <td>GRM31</td> <td>2.2</td> <td>5.0</td> <td>2.0</td> </tr> <tr> <td>GRM32</td> <td>2.2</td> <td>5.0</td> <td>2.9</td> </tr> <tr> <td>GRM43</td> <td>3.5</td> <td>7.0</td> <td>3.7</td> </tr> <tr> <td>GRM55</td> <td>4.5</td> <td>8.0</td> <td>5.6</td> </tr> </tbody> </table> <p style="text-align: center;">(in mm)</p>		Type	a	b	c	GRP03	0.3	0.9	0.3	GRP15	0.4	1.5	0.5	GRM18	1.0	3.0	1.2	GRM21	1.2	4.0	1.65	GRM31	2.2	5.0	2.0	GRM32	2.2	5.0	2.9	GRM43	3.5	7.0	3.7	GRM55	4.5	8.0	5.6	<p>Solder the capacitor on the test jig (glass epoxy board) shown in Fig.2 using a eutectic solder. Then apply a force in the direction shown in Fig. 3. The soldering shall be done either with an iron or using the reflow method and shall be conducted with care so that the soldering is uniform and free of defects such as heat shock.</p>  <p style="text-align: center;">Fig.3</p>
		Type	a	b	c																																			
GRP03	0.3	0.9	0.3																																					
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GRM18	1.0	3.0	1.2																																					
GRM21	1.2	4.0	1.65																																					
GRM31	2.2	5.0	2.0																																					
GRM32	2.2	5.0	2.9																																					
GRM43	3.5	7.0	3.7																																					
GRM55	4.5	8.0	5.6																																					
Fig.2																																								


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No.	Item	Specification		Test Method	
		Temperature Compensating Type	High Dielectric Type		
13	Solderability of Termination	75% of the terminations is to be soldered evenly and continuously.		Immerse the capacitor in a solution of ethanol (JIS-K-8101) and rosin (JIS-K-5902) (25% rosin in weight proportion). Preheat at 80 to 120°C for 10 to 30 seconds. After preheating, immerse in eutectic solder solution for 2±0.5 seconds at 230±5°C.	
14	Resistance to Soldering Heat	The measured and observed characteristics shall satisfy the specifications in the following table.		Preheat the capacitor at 120 to 150°C for 1 minute. Immerse the capacitor in a eutectic solder solution at 270±5°C for 10±0.5 seconds. Let sit at room temperature for 24±2 hours (temperature compensating type) or 48±4 hours (high dielectric constant type), then measure. •Initial measurement for high dielectric constant type Perform a heat treatment at 150 ±18°C for one hour and then let sit for 48±4 hours at room temperature. Perform the initial measurement. *Preheating for GRM32/43/55	
		Appearance	No marking defects.		
		Capacitance Change	Within ±2.5% or ±0.25pF (Whichever is larger)		R6, R7 : Within ±7.5% E4, F5 : Within ±20%
		Q/D.F.	30pFmin. : Q≥1000 30pFmax. : Q≥400+20C C : Nominal Capacitance (pF)		[R6, R7] W.V. : 25Vmin. : 0.025max. W.V. : 16/10V : 0.035max. W.V. : 6.3V : 0.05max. (C<3.3μF) 0.1max. (C≥3.3μF) [E4] W.V. : 25Vmin. : 0.025max. [F5] W.V. : 25Vmin. : 0.05max. (C<1.0μF) : 0.09max. (C≥1.0μF) W.V.:16V : 0.07max. (C<1.0μF) : 0.09max. (C≥1.0μF) W.V. : 10Vmax. : 0.125max.
		I.R.	More than 10,000MΩ or 500Ω • F (Whichever is smaller)		
	Dielectric Strength	No failure			
15	Temperature Cycle	The measured and observed characteristics shall satisfy the specifications in the following table.		Fix the capacitor to the supporting jig in the same manner and under the same conditions as (10). Perform the five cycles according to the four heat treatments listed in the following table. Let sit for 24±2 hours (temperature compensating type) or 48±4 hour (high dielectric constant type) at room temperature, then measure.	
		Appearance	No marking defects.		
		Capacitance Change	Within ±2.5% or ±0.25pF (Whichever is larger)		R6, R7 : Within ±7.5% E4, F5 : Within ±20%
		Q/D.F.	30pFmin. : Q≥1000 30pFmax. : Q≥400+20C C : Nominal Capacitance (pF)		[R6, R7] W.V. : 25Vmin. : 0.025max. W.V. : 16/10V : 0.035max. W.V. : 6.3V 0.05max. (C<3.3μF) 0.1max. (C≥3.3μF) [E4] W.V. : 2.5Vmin. : 0.025max. [F5] W.V. : 25Vmin. : 0.05max. (C<1.0μF) : 0.09max. (C≥1.0μF) W.V. : 16V : 0.07max. (C<1.0μF) : 0.09max. (C≥1.0μF) W.V. : 10Vmax. : 0.125max.
		I.R.	More than 10,000MΩ or 500Ω • F (Whichever is smaller)		
	Dielectric Strength	No failure			


Step	Temperature	Time
1	100°C to 120°C	1 min.
2	170°C to 200°C	1 min.

Step	1	2	3	4
Temp.(°C)	Min. Operating Temp.+0/-3	Room Temp.	Max. Operating Temp.+3/-0	Room Temp.
Time(min.)	30±3	2 to 3	30±3	2 to 3

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No.	Item	Specification		Test Method	
		Temperature Compensating Type	High Dielectric Type		
16	Humidity Steady State	The measured and observed characteristics shall satisfy the specifications in the following table.		Sit the capacitor at 40±2°C and 90 to 95% humidity for 500±12 hours. Remove and let sit for 24±2 hours (temperature compensating type) or 48±4 hours (high dielectric constant type) at room temperature, then measure.	
		Appearance	No marking defects.		
		Capacitance Change	Within ±5% or ±0.5pF (Whichever is larger)		R6, R7 : Within ±12.5% E4, F5 : Within ±30%
		Q/D.F.	30pF and over : Q≥350 10pF and over 30pF and below : Q≥275+5C/2 10pF and below : Q≥200+10C C : Nominal Capacitance (pF)		[R6, R7] W.V. : 25Vmin. : 0.05max. W.V. : 16/10V : 0.05max. W.V. : 6.3V 0.075max. (C<3.3μF) 0.125max. (C≥3.3μF) [E4] W.V. : 25Vmin. : 0.05max. [F5] W.V. : 25Vmin. : 0.075max. (C<1.0μF) : 0.125max. (C≥1.0μF) W.V. : 16V : 0.1max. (C<1.0μF) : 0.125max. (C≥1.0μF) W.V. : 10Vmax. : 0.15max.
		I.R.	More than 1,000MΩ or 50Ω • F(Whichever is smaller)		
		Dielectric Strength	No failure		
17	Humidity Load	The measured and observed characteristics shall satisfy the specifications in the following table.		Apply the rated voltage at 40±2°C and 90 to 95% humidity for 500±12 hours. Remove and let sit for 24±2 hours (temperature compensating type) or 48±4 hours (high dielectric constant type) at room temperature, then measure. The charge/discharge current is less than 50mA. •Initial measurement for F5/10Vmax. Apply the rated DC voltage for 1 hour at 40±2°C. Remove and let sit for 48±4 hours at room temperature. Perform initial measurement.	
		Appearance	No marking defects.		
		Capacitance Change	Within ±7.5% or ±0.75pF (Whichever is larger)		R6, R7 : Within ±12.5% E4 : Within ±30% F5 : Within ±30% [W.V. : 10Vmax.] F5 : Within +30/-40%
		Q/D.F.	30pF and over : Q≥200 30pF and below : Q≥100+10C/3 C : Nominal Capacitance (pF)		[R6, R7] W.V. : 25Vmin. : 0.05max. W.V. : 16/10V : 0.05max. W.V. : 6.3V 0.075max. (C<3.3μF) 0.125max. (C≥3.3μF) [E4] W.V. : 25Vmin. : 0.05max. [F5] W.V. : 25Vmin. : 0.075max. (C<1.0μF) : 0.125max. (C≥1.0μF) W.V. : 16V : 0.1max. (C<1.0μF) : 0.125max. (C≥1.0μF) W.V. : 10Vmax. : 0.15max.
		I.R.	More than 500MΩ or 25Ω • F(Whichever is smaller)		
		Dielectric Strength	No failure		

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No.	Item	Specification		Test Method
		Temperature Compensating Type	High Dielectric Type	
18		The measured and observed characteristics shall satisfy the specifications in the following table.		Apply 200% of the rated voltage for 1000±12 hours at the maximum operating temperature ±3°C. Let sit for 24±2 hours (temperature compensating type) or 48±4 hours (high dielectric constant type) at room temperature, then measure. The charge/discharge current is less than 50mA. •Initial measurement for high dielectric constant type. Apply 200% of the rated DC voltage for one hour at the maximum operating temperature ±3°C. Remove and let sit for 48±4 hours at room temperature. Perform initial measurement. *150% for 500V and C≥10μF
	Appearance	No marking defects.		
	Capacitance Change	Within ±3% or ±0.3pF (Whichever is larger)	R6, R7 : Within ±12.5% E4 : Within ±30% F5 : Within ±30% (Cap<1.0μF) F5 : Within +30/-40%(Cap≥1.0μF)	
	Q/D.F.	30pF and over : Q≥350 10pF and over : Q≥275+5C/2 30pF and below : Q≥200+10C C : Nominal Capacitance (pF)	[R6, R7] W.V. : 25Vmin. : 0.05max. W.V. : 16/10V : 0.05max. W.V. : 6.3V : 0.075max. (C<3.3μF) 0.125max. (C≥3.3μF) [E4] W.V. : 25Vmin. : 0.05max [F5] W.V. : 25Vmin. : 0.075max. (C<1.0μF) : 0.125max. (C≥1.0μF) W.V. : 16V : 0.1max. (C<1.0μF) : 0.125max. (C≥1.0μF) W.V. : 10Vmax. : 0.15max.	
	I.R.	More than 1,000MΩ or 50Ω•F(Whichever is smaller)		
	Dielectric Strength	No failure		
19	Notice	When mounting capacitor of 500V rated voltage, perform the epoxy resin coating(min.1.0mm thickness)		

Table A

Char. Code	Nominal Values (ppm/°C)*	Capacitance Change from 25°C (%)					
		-55		-30		-10	
		Max.	Min.	Max.	Min.	Max.	Min.
5C	0± 30	0.58	-0.24	0.40	-0.17	0.25	-0.11
6C	0± 60	0.87	-0.48	0.59	-0.33	0.38	-0.21
6P	-150± 60	2.33	0.72	1.61	0.50	1.02	0.32
6R	-220± 60	3.02	1.28	2.08	0.88	1.32	0.56
6S	-330± 60	4.09	2.16	2.81	1.49	1.79	0.95
6T	-470± 60	5.46	3.28	3.75	2.26	2.39	1.44
7U	-750±120	8.78	5.04	6.04	3.47	3.84	2.21
1X	+350 to -1000	-	-	-	-	-	-

*Nominal values denote the temperature coefficient within a range of 25°C to 125°C (for ΔC)/85°C (for other TC).