

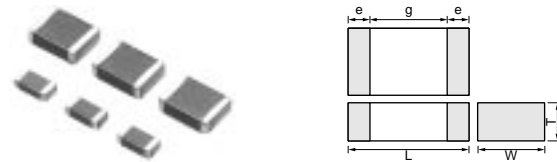
Chip Monolithic Ceramic Capacitors



Medium Voltage Low Dissipation Factor

■ Features

1. Low-loss and suitable for high frequency circuits
2. Murata's original internal electrode structure realizes high flash-over voltage.
3. A new monolithic structure for small, surface-mountable devices capable of operating at high voltage levels
4. Sn-plated external electrodes realize good solderability.
5. Use the GRM21/31 type with flow or reflow soldering, and other types with reflow soldering only.



Part Number	Dimensions (mm)				
	L	W	T	e min.	g min.
GRM21A	2.0 ±0.2	1.25 ±0.2	1.0 +0, -0.3	0.3	0.7
GRM31A	3.2 ±0.2	1.6 ±0.2	1.25 +0, -0.3		1.5*
GRM31B			1.0 +0, -0.3		
GRM32A	3.2 ±0.2	2.5 ±0.2	1.25 +0, -0.3		
GRM32B			1.0 +0, -0.3		
GRM42A	4.5 ±0.3	2.0 ±0.2	1.0 +0, -0.3		


* GRM31A7U3D, GRM32A7U3D, GRM32B7U3D : 1.8mm min.

■ Applications

Ideal for use on high frequency pulse circuits such as snubber circuits for switching power supplies, DC-DC converters, ballasts (inverter fluorescent lamps), etc.

Part Number	Rated Voltage (V)	TC Code (Standard)	Capacitance (pF)	Length L (mm)	Width W (mm)	Thickness T (mm)	Electrode g min. (mm)	Electrode e (mm)
GRM21A7U2E101JW31D	DC250	U2J (EIA)	100 ±5%	2.0	1.25	1.0	0.7	0.3 min.
GRM21A7U2E151JW31D	DC250	U2J (EIA)	150 ±5%	2.0	1.25	1.0	0.7	0.3 min.
GRM21A7U2E221JW31D	DC250	U2J (EIA)	220 ±5%	2.0	1.25	1.0	0.7	0.3 min.
GRM21A7U2E331JW31D	DC250	U2J (EIA)	330 ±5%	2.0	1.25	1.0	0.7	0.3 min.
GRM21A7U2E471JW31D	DC250	U2J (EIA)	470 ±5%	2.0	1.25	1.0	0.7	0.3 min.
GRM21A7U2E681JW31D	DC250	U2J (EIA)	680 ±5%	2.0	1.25	1.0	0.7	0.3 min.
GRM21A7U2E102JW31D	DC250	U2J (EIA)	1000 ±5%	2.0	1.25	1.0	0.7	0.3 min.
GRM21A7U2E152JW31D	DC250	U2J (EIA)	1500 ±5%	2.0	1.25	1.0	0.7	0.3 min.
GRM21A7U2E222JW31D	DC250	U2J (EIA)	2200 ±5%	2.0	1.25	1.0	0.7	0.3 min.
GRM31A7U2E332JW31D	DC250	U2J (EIA)	3300 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U2E472JW31D	DC250	U2J (EIA)	4700 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31B7U2E682JW31L	DC250	U2J (EIA)	6800 ±5%	3.2	1.6	1.25	1.5	0.3 min.
GRM31B7U2E103JW31L	DC250	U2J (EIA)	10000 ±5%	3.2	1.6	1.25	1.5	0.3 min.
GRM31A7U2J100JW31D	DC630	U2J (EIA)	10 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U2J150JW31D	DC630	U2J (EIA)	15 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U2J220JW31D	DC630	U2J (EIA)	22 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U2J330JW31D	DC630	U2J (EIA)	33 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U2J470JW31D	DC630	U2J (EIA)	47 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U2J680JW31D	DC630	U2J (EIA)	68 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U2J101JW31D	DC630	U2J (EIA)	100 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U2J151JW31D	DC630	U2J (EIA)	150 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U2J221JW31D	DC630	U2J (EIA)	220 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U2J331JW31D	DC630	U2J (EIA)	330 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U2J471JW31D	DC630	U2J (EIA)	470 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U2J681JW31D	DC630	U2J (EIA)	680 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U2J102JW31D	DC630	U2J (EIA)	1000 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM32A7U2J152JW31D	DC630	U2J (EIA)	1500 ±5%	3.2	2.5	1.0	1.5	0.3 min.
GRM32A7U2J222JW31D	DC630	U2J (EIA)	2200 ±5%	3.2	2.5	1.0	1.5	0.3 min.
GRM31A7U3A100JW31D	DC1000	U2J (EIA)	10 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U3A150JW31D	DC1000	U2J (EIA)	15 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U3A220JW31D	DC1000	U2J (EIA)	22 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U3A330JW31D	DC1000	U2J (EIA)	33 ±5%	3.2	1.6	1.0	1.5	0.3 min.

Continued on the following page.

 Continued from the preceding page.

Part Number	Rated Voltage (V)	TC Code (Standard)	Capacitance (pF)	Length L (mm)	Width W (mm)	Thickness T (mm)	Electrode g min. (mm)	Electrode e (mm)
GRM31A7U3A470JW31D	DC1000	U2J (EIA)	47 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U3A680JW31D	DC1000	U2J (EIA)	68 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U3A101JW31D	DC1000	U2J (EIA)	100 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U3A151JW31D	DC1000	U2J (EIA)	150 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U3A221JW31D	DC1000	U2J (EIA)	220 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31A7U3A331JW31D	DC1000	U2J (EIA)	330 ±5%	3.2	1.6	1.0	1.5	0.3 min.
GRM31B7U3A471JW31L	DC1000	U2J (EIA)	470 ±5%	3.2	1.6	1.25	1.5	0.3 min.
GRM31A7U3D100JW31D	DC2000	U2J (EIA)	10 ±5%	3.2	1.6	1.0	1.8	0.3 min.
GRM31A7U3D120JW31D	DC2000	U2J (EIA)	12 ±5%	3.2	1.6	1.0	1.8	0.3 min.
GRM31A7U3D150JW31D	DC2000	U2J (EIA)	15 ±5%	3.2	1.6	1.0	1.8	0.3 min.
GRM31A7U3D180JW31D	DC2000	U2J (EIA)	18 ±5%	3.2	1.6	1.0	1.8	0.3 min.
GRM31A7U3D220JW31D	DC2000	U2J (EIA)	22 ±5%	3.2	1.6	1.0	1.8	0.3 min.
GRM31A7U3D270JW31D	DC2000	U2J (EIA)	27 ±5%	3.2	1.6	1.0	1.8	0.3 min.
GRM31A7U3D330JW31D	DC2000	U2J (EIA)	33 ±5%	3.2	1.6	1.0	1.8	0.3 min.
GRM31A7U3D390JW31D	DC2000	U2J (EIA)	39 ±5%	3.2	1.6	1.0	1.8	0.3 min.
GRM31A7U3D470JW31D	DC2000	U2J (EIA)	47 ±5%	3.2	1.6	1.0	1.8	0.3 min.
GRM31A7U3D560JW31D	DC2000	U2J (EIA)	56 ±5%	3.2	1.6	1.0	1.8	0.3 min.
GRM31A7U3D680JW31D	DC2000	U2J (EIA)	68 ±5%	3.2	1.6	1.0	1.8	0.3 min.
GRM32A7U3D820JW31D	DC2000	U2J (EIA)	82 ±5%	3.2	2.5	1.0	1.8	0.3 min.
GRM32A7U3D101JW31D	DC2000	U2J (EIA)	100 ±5%	3.2	2.5	1.0	1.8	0.3 min.
GRM32A7U3D121JW31D	DC2000	U2J (EIA)	120 ±5%	3.2	2.5	1.0	1.8	0.3 min.
GRM32A7U3D151JW31D	DC2000	U2J (EIA)	150 ±5%	3.2	2.5	1.0	1.8	0.3 min.
GRM32B7U3D181JW31L	DC2000	U2J (EIA)	180 ±5%	3.2	2.5	1.25	1.8	0.3 min.
GRM32B7U3D221JW31L	DC2000	U2J (EIA)	220 ±5%	3.2	2.5	1.25	1.8	0.3 min.
GRM42A7U3F270JW31L	DC3150	U2J (EIA)	27 ±5%	4.5	2.0	1.0	2.9	0.3 min.
GRM42A7U3F330JW31L	DC3150	U2J (EIA)	33 ±5%	4.5	2.0	1.0	2.9	0.3 min.
GRM42A7U3F390JW31L	DC3150	U2J (EIA)	39 ±5%	4.5	2.0	1.0	2.9	0.3 min.
GRM42A7U3F470JW31L	DC3150	U2J (EIA)	47 ±5%	4.5	2.0	1.0	2.9	0.3 min.
GRM42A7U3F560JW31L	DC3150	U2J (EIA)	56 ±5%	4.5	2.0	1.0	2.9	0.3 min.
GRM42A7U3F680JW31L	DC3150	U2J (EIA)	68 ±5%	4.5	2.0	1.0	2.9	0.3 min.
GRM42A7U3F820JW31L	DC3150	U2J (EIA)	82 ±5%	4.5	2.0	1.0	2.9	0.3 min.
GRM42A7U3F101JW31L	DC3150	U2J (EIA)	100 ±5%	4.5	2.0	1.0	2.9	0.3 min.

11

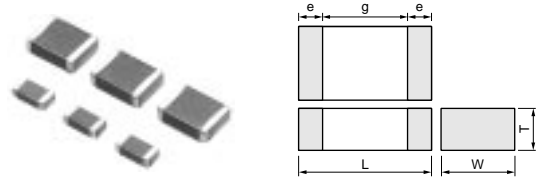
Chip Monolithic Ceramic Capacitors



Only for LCD Backlight Inverter Circuit

■ Features

1. Low-loss and suitable for high frequency circuits
2. Murata's original internal electrode structure realizes high flash-over voltage.
3. A new monolithic structure for small, surface-mountable devices capable of operating at high voltage levels.
4. Sn-plated external electrodes realize good solderability.
5. Only for reflow soldering
6. The capacitors less than 22pF can be applied maximum 4.0kV peak to peak at 100kHz or less only for the ballast or the resonance usage in the LCD backlight inverter circuit.



Part Number	Dimensions (mm)				
	L	W	T	e min.	g min.
GRM42A	4.5 ±0.3	2.0 ±0.2	1.0 +0, -0.3	0.3	2.9

■ Applications

Ideal for use as the ballast in LCD backlight inverter.

Part Number	Rated Voltage (V)	TC Code (Standard)	Capacitance (pF)	Length L (mm)	Width W (mm)	Thickness T (mm)	Electrode g min. (mm)	Electrode e (mm)
GRM42A5C3F050DW01L	DC3150	COG (EIA)	5.0 ±0.5pF	4.5	2.0	1.0	2.9	0.3 min.
GRM42A5C3F100JW01L	DC3150	COG (EIA)	10 ±5%	4.5	2.0	1.0	2.9	0.3 min.
GRM42A5C3F120JW01L	DC3150	COG (EIA)	12 ±5%	4.5	2.0	1.0	2.9	0.3 min.
GRM42A5C3F150JW01L	DC3150	COG (EIA)	15 ±5%	4.5	2.0	1.0	2.9	0.3 min.
GRM42A5C3F180JW01L	DC3150	COG (EIA)	18 ±5%	4.5	2.0	1.0	2.9	0.3 min.
GRM42A5C3F220JW01L	DC3150	COG (EIA)	22 ±5%	4.5	2.0	1.0	2.9	0.3 min.
GRM42A5C3F270JW01L	DC3150	COG (EIA)	27 ±5%	4.5	2.0	1.0	2.9	0.3 min.
GRM42A5C3F330JW01L	DC3150	COG (EIA)	33 ±5%	4.5	2.0	1.0	2.9	0.3 min.
GRM42A5C3F390JW01L	DC3150	COG (EIA)	39 ±5%	4.5	2.0	1.0	2.9	0.3 min.
GRM42A5C3F470JW01L	DC3150	COG (EIA)	47 ±5%	4.5	2.0	1.0	2.9	0.3 min.

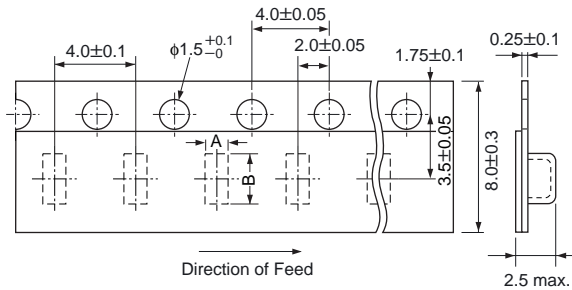
Package

Continued from the preceding page.

(2) Dimensions of Tape

① Embossed Tape

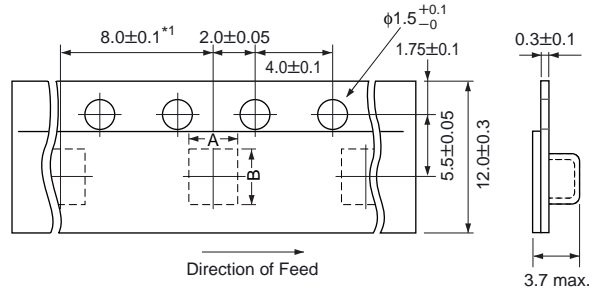
8mm width 4mm pitch Tape



Part Number	A*	B*
GRM21 (T≥1.25mm)	1.45	2.25
GRM31/GR731 (T≥1.25mm)	2.0	3.6
GRM32 (T≥1.25mm)	2.9	3.6

*Nominal Value

12mm width 8mm/4mm pitch Tape



Part Number	A*	B*
GRM42/GR442/GA242/GA342	2.5	5.1
GRM43/GR443/GA243/GA343	3.6	4.9
GA352	3.2	6.1
GRM55/GR455/GA255/GA355	5.4	6.1

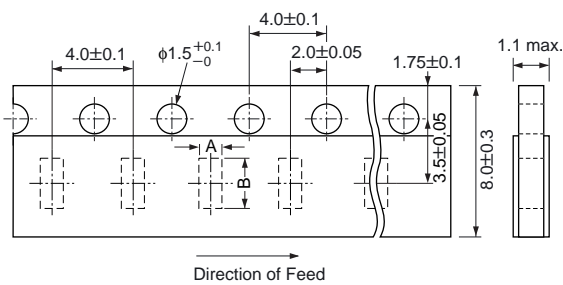
*1 4.0±0.1mm in case of GRM42/GR442/GA242/GA342

*Nominal Value

(in mm)

② Paper Tape

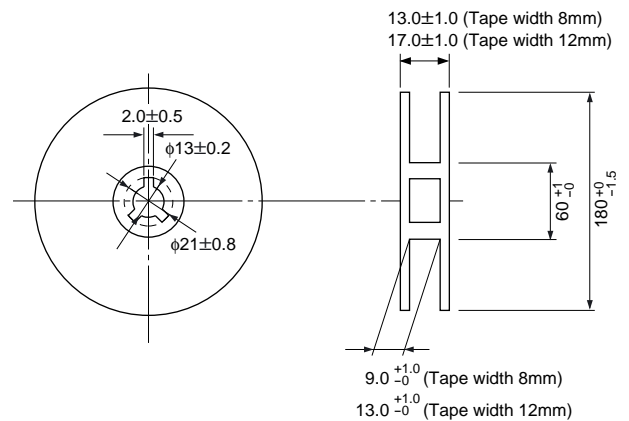
8mm width 4mm pitch Tape



Part Number	A*	B*
GRM18	1.05	1.85
GRM21 (T=1.0mm)	1.45	2.25
GRM31/GR731 (T=1.0mm)	2.0	3.6
GRM32 (T=1.0mm)	2.9	3.6

*Nominal Value
(in mm)

(3) Dimensions of Reel



(in mm)

Continued on the following page. ↗