

CD11GD Series

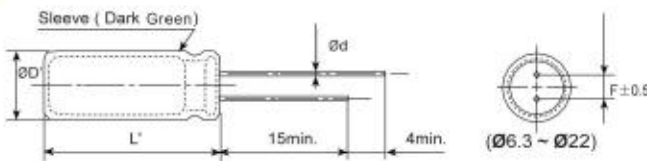
- Life time: 105°C 6,000 hours
- Miniaturized and high stability
- Suitable for output circuit and input circuit of LED driving power
- RoHS Compliant



◆ SPECIFICATIONS

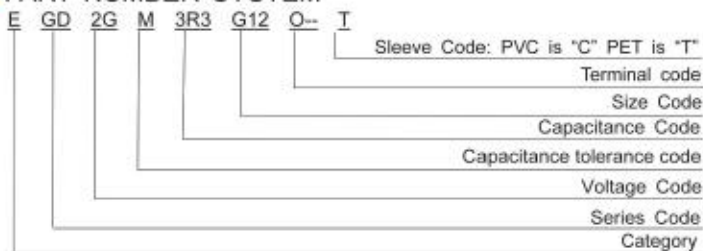
Item	Characteristics								
Temperature Range	-40 ~ +105°C(160 ~ 400V _{dc}) -25 ~ +105°C(450 ~ 500V _{dc})								
Rated Voltage Range	160 ~ 500V _{dc}								
Capacitance Tolerance	±20%(M) (20°C, 120Hz)								
Leakage Current	160 ~ 400V _{dc} I ≦ 0.02CV+10μA		450 ~ 500V _{dc} I ≦ 0.03CV+10μA		I : Leakage Current(μA), C : Nominal capacitance(μF), V : Rated Voltage (V) (20°C, 2minutes)				
Dissipation Factor (tanδ)	Rated Voltage(V _{dc})	160	200	250	350	400	450	500	(20°C, 120Hz)
	tanδ (Max.)	0.15	0.15	0.15	0.20	0.20	0.20	0.24	
Temperature Characteristics (Max.Impedance Ratio)	Rate Voltage(V _{dc})	160	200	250	350	400	450	500	(120Hz)
	Z(-25°C)/Z(+20°C)	3	3	3	5	5	6	6	
	Z(-40°C)/Z(+20°C)	6	6	6	6	6	--	--	
Endurance	After application of DC voltage with rated ripple current (the voltage peak is not more than rated voltage) at 105°C 6,000 hours, measuring the parameters when the capacitors are restored to 20°C,the capacitors shall meet the requirements as below								
	Capacitance Change	≤ ±20% of the initial value							
	D.F.(tanδ)	≤200% of the initial specified value							
	Leakage Current	≤the initial specified value							
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage application.								
	Capacitance Change	≤ ±20% of the initial value							
	D.F.(tanδ)	≤200% of the initial specified value							
	Leakage Current	≤200% of the initial specified value							

◆ DIMENSIONS [mm]



ØD	6.3	8	10	12.5	16	18	22
Ød	0.5	0.5	0.6	0.6	0.8	0.8	0.8
F	2.5	3.5	5.0	5.0	7.5	7.5	10
ØD'	ØD+0.5max.						
L'	L+2max.						

◆ PART NUMBER SYSTEM



◆ RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

WV(V _{dc})	Freq.(Hz)	120	1k	10k	100k
160 ~ 500		0.50	0.80	0.90	1.00

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◆ STANDARD RATINGS

WV (V _{ac})	Cap (μF)	Size ΦD×L(mm)	tanδ	Ripple current (mA _{rms} /105°C, 100kHz)
160V(2C)	1	6.3×9	0.15	36
		6.3×12	0.15	40
	1.5	6.3×12	0.15	50
		1.8	6.3×9	0.15
	6.3×12		0.15	56
	2.2	6.3×9	0.15	56
		6.3×12	0.15	60
	2.8	6.3×9	0.15	60
		6.3×12	0.15	65
	3.3	6.3×9	0.15	65
		6.3×12	0.15	68
	3.9	6.3×9	0.15	68
		4.7	6.3×9	0.15
	6.3×12		0.15	72
	5.6	6.3×9	0.15	72
		8×12	0.15	76
	6.8	8×9	0.15	86
		8×12	0.15	96
	8.2	8×9	0.15	135
			0.15	165
	10	8×12	0.15	206
		8×16	0.15	216
	12	8×9	0.15	180
			0.15	225
15	8×16	0.15	225	
	10×9	0.15	200	
22	8×20	0.15	360	
	10×16	0.15	360	
33	10×20	0.15	450	
		0.15	450	
47	10×20	0.15	500	
		0.15	600	
68	12.5×20	0.15	600	
		0.15	722	
100	12.5×25	0.15	722	
	16×20	0.15	722	
150	16×25	0.15	798	
		0.15	38	
200V(2D)	1	6.3×9	0.15	38
		6.3×12	0.15	42
	1.2	6.3×9	0.15	42
		1.5	6.3×9	0.15
	6.3×12		0.15	54
	1.8	6.3×9	0.15	54
		6.3×12	0.15	60
	2.2	6.3×9	0.15	60
		6.3×12	0.15	68
	2.8	6.3×9	0.15	68
		6.3×12	0.15	71
	3.3	6.3×9	0.15	72
		6.3×12	0.15	78
	4.7	6.3×12	0.15	85
		8×9	0.15	88
	5.6	8×9	0.15	92
		8×12	0.15	98
	6.8	8×9	0.15	98
		8×16	0.15	103
	8.2	8×9	0.15	145
			0.15	216
	10	8×16	0.15	190
		10×9	0.15	190
	15	8×16	0.15	225
8×20		0.15	250	
22	8×20	0.15	380	
	10×16	0.15	380	
33	10×20	0.15	450	
	12.5×16	0.15	450	
47	12.5×16	0.15	520	
	12.5×20	0.15	580	
68	12.5×25	0.15	665	
		0.15	760	
100	16×25	0.15	760	
		0.15	895	
150	16×30	0.15	895	
		0.15	895	

WV (V _{ac})	Cap (μF)	Size ΦD×L(mm)	tanδ	Ripple current (mA _{rms} /105°C, 100kHz)
250V(2E)	1	6.3×9	0.15	40
		6.3×12	0.15	46
	1.2	6.3×9	0.15	46
		1.5	6.3×9	0.15
	6.3×12		0.15	58
	1.8	6.3×9	0.15	58
		6.3×12	0.15	62
	2.2	6.3×9	0.15	62
		6.3×12	0.15	70
	2.8	6.3×9	0.15	70
		6.3×12	0.15	78
	3.3	6.3×9	0.15	75
		6.3×12	0.15	80
	4.7	8×9	0.15	92
		8×12	0.15	102
	5.6	8×9	0.15	95
		8×12	0.15	105
	6.8	8×9	0.15	105
		8×16	0.15	115
	8.2	8×16	0.15	120
		10×9	0.15	110
	10	8×16	0.15	216
		10×9	0.15	175
	15	8×20	0.15	250
			0.15	380
	22	10×16	0.15	380
		33	12.5×16	0.15
	12.5×20		0.15	470
	47	12.5×16	0.15	520
		12.5×20	0.15	580
	68	16×25	0.15	720
			0.15	836
	100	16×30	0.15	836
			0.15	978
	150	16×35	0.15	978
			0.20	45
350V(2V)	1	6.3×9	0.20	45
		6.3×12	0.20	50
	1.2	6.3×9	0.20	50
		1.5	6.3×9	0.20
	6.3×12		0.20	60
	1.8	6.3×9	0.20	60
		6.3×12	0.20	64
	2.2	6.3×12	0.20	70
		8×9	0.20	72
	2.8	8×9	0.20	76
		8×12	0.20	80
	3.3	8×9	0.20	78
		8×12	0.20	82
	4.7	8×12	0.20	102
		10×9	0.20	104
	5.6	8×16	0.20	110
		10×9	0.20	106
	6.8	8×20	0.20	128
		10×9	0.20	120
	8.2	8×20	0.20	144
		10	8×20	0.20
	15	10×20	0.20	285
		22	12.5×20	0.20
	33	12.5×25	0.20	480
0.20			600	
47	16×20	0.20	600	
		0.20	720	
68	18×20	0.20	720	
		0.20	900	
100	18×30	0.20	900	
		0.20	900	

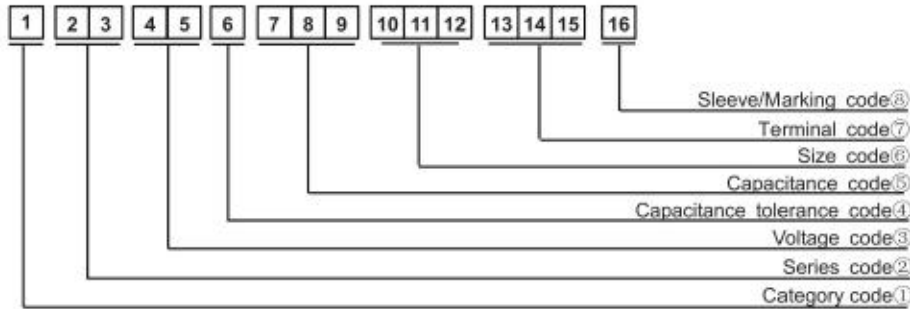
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◆ STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Size ΦD×L(mm)	tanδ	Ripple current (mA _{rms} /105°C, 100kHz)
400V(2G)	1	6.3×9	0.20	55
		6.3×12	0.20	59
	1.2	6.3×9	0.20	59
		6.3×12	0.20	63
	1.5	6.3×9	0.20	65
		8×12	0.20	72
	1.8	8×9	0.20	70
		8×12	0.20	75
	2.2	6.3×12	0.20	72
			8×9	0.20
		8×12	0.20	78
	2.8	8×9	0.20	78
		8×16	0.20	85
	3.3	8×9	0.20	85
			8×12	0.20
		8×16	0.20	95
	4.7	8×12	0.20	104
			8×16	0.20
		10×9	0.20	106
	5.6	8×20	0.20	138
		10×16	0.20	138
	6.8	8×20	0.20	148
		10×16	0.20	148
	8.2	10×16	0.20	218
		10×20	0.20	230
	10	10×16	0.20	226
		10×20	0.20	238
	15	12.5×16	0.20	270
		12.5×20	0.20	300
	22	12.5×25	0.20	420
16×20		0.20	420	
33	16×25	0.20	550	
	16×30	0.20	579	
47	12.5×40	0.20	630	
	16×30	0.20	637	
68	18×30	0.20	760	
100	18×40	0.20	1100	

WV (V _{dc})	Cap (μF)	Size ΦD×L(mm)	tanδ	Ripple current (mA _{rms} /105°C, 100kHz)
450V(2W)	1	6.3×9	0.20	55
		8×12	0.20	60
	1.2	6.3×9	0.20	60
	1.5	8×9	0.20	65
		8×12	0.20	70
	1.8	8×9	0.20	68
		8×12	0.20	72
	2.2	8×9	0.20	72
		8×16	0.20	75
	2.8	8×9	0.20	75
		8×16	0.20	79
	3.3	8×16	0.20	86
			10×9	0.20
		4.7	8×20	0.20
	5.6	10×16	0.20	115
	6.8	10×20	0.20	158
	8.2	10×20	0.20	209
	10	10×20	0.20	225
		12.5×16	0.20	225
	15	12.5×20	0.20	332
	22	12.5×25	0.20	427
	33	10×45	0.20	510
		16×25	0.20	522
	47	12.5×45	0.20	660
		16×35	0.20	700
	68	18×30	0.20	769
100	18×40	0.20	950	
500V(2H)	10	12.5×20	0.24	259
		12.5×25	0.24	272
	15	12.5×25	0.24	356
		16×20	0.24	356
	22	12.5×35	0.24	453
		16×25	0.24	453
	33	18×25	0.24	567
	47	18×30	0.24	713
	68	22×35	0.24	1000
	100	22×35	0.24	1400

Part Number System



① Category

Type	Code
	1
Electrolytic Capacitor	E
Conductive Polymer	S

② Series code

Series name	Code	
	2	3
WH	W	H
CD11GE	G	E
CD11GES	G	X
CD11GAS	G	W
CD11GHS	G	S
NR	N	R
PZ	P	Z

③ Voltage code

wv (V _{dc})	Code	
	4	5
2.5	0	E
3	0	D
4	0	G
6.3	0	J
6.8	0	C
7	0	Q
7.5	0	A
10	1	A
12	1	T
16	1	C
25	1	E
35	1	V
40	1	G
50	1	H
63	1	J
80	1	B
100	1	K
160	2	C
180	2	L
200	2	D
220	2	N
250	2	E
315	2	F
350	2	V
380	2	P
400	2	G
420	2	T
450	2	W
500	2	H
550	2	J
600	2	K

④ Capacitance tolerance

Tol. (%)	Code
	6
-10~+10	K
-20~+20	M
-10~+30	Q
-10~+20	V
-0~+20	A
-0~+30	
-5~+20	C
-10~-20	B
-5~+5	D
-0~+10	E
-5~-20	F
-15~+5	N

⑤ Capacitance code

Cap (μ F)	Code		
	7	8	9
0.10	R	1	0
0.22	R	2	2
0.33	R	3	3
0.47	R	4	7
0.68	R	6	8
1	0	1	0
2.2	2	R	2
3.3	3	R	3
4.7	4	R	7
6.8	6	R	8
10	1	0	0
22	2	2	0
33	3	3	0
47	4	7	0
68	6	8	0
100	1	0	1
220	2	2	1
330	3	3	1
470	4	7	1
680	6	8	1
1000	1	0	2
2200	2	2	2
3300	3	3	2
4700	4	7	2
6800	6	8	2
10000	1	0	3
22000	2	2	3
33000	3	3	3
68000	6	8	3

⑥ Size code

Φ D (mm)	Code	L (mm)	Code	
	10		11	12
4	C	5	0	5
5	D	7	0	7
6.3	E	11	1	1
8	F	12	1	2
10	G	16	1	6
11	H	20	2	0
12	J	25	2	5
12.5	W	30	3	0
13	K	35	3	5
14	X	40	4	0
16	L	46	4	6
18	M	50	5	0
19	Z	60	6	0
20	N	80	8	0
22	O	100	A	0
25	P	115	B	5
30	Q	120	C	0
35	R	130	D	0
40	Y	140	E	0
51.6	S	160	G	0
64.3	T	200	K	0
76.9	U	220	M	0
91	V	236	N	6
100	A	250	P	0

⑦ Terminal code

Specification	Code	Size	
	13	14	15
Bulk packing	O	-	-
Φ 4~8 Taping F=5.0mm	P	5	0
Φ 10~12.5 Taping F=5.0mm	B	5	0
Lead Cut L=3.5mm	C	3	5
Lead Cut L=11.0mm	C	B	0
Lead Forming & Cut L=4.5mm	F	-	-
Kink & Cut L=4.5mm	J	-	-
Snap-in type Terminal 4.0mm in length	K	-	-
Three Terminal	T	-	-
Ring clip mounting standard design	A	0	0
Ring clip mounting special design	S	-	-

⑧ Sleeve/Marking code

Sleeve/Marking	Code
16	
PVC	C
PET	T
Dark blue	B
Big red	R
Sky-blue	S
Light blue	T
Pink	Z
Black	H
Purple-blue	V
Red	O