GVE 105℃,Low Impedance.

Series

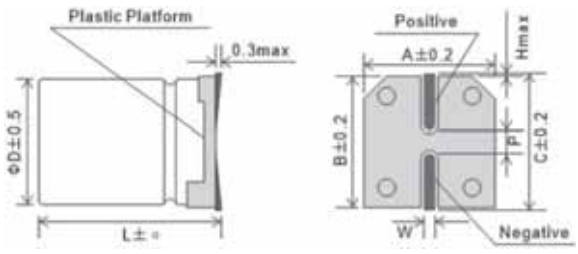
■ Features

105℃, 2000~3000 hours assured, Low Impedance.
Available for high density surface mounting.
High stability and reliability.

■ Specifications

Item	Condition		Specifications							
Category Temperature Range(℃)	——		-55℃ ~ +105℃							
Capacitance Tolerance (%)	120Hz, 20℃		±20%							
Rated Voltage (v)	——		6.3	10	16	25	35	50	63	100
Dissipation Factor (tanδ)	120Hz, 20℃ (Max.)	tanδ	0.26	0.20	0.16	0.14	0.12	0.12	0.12	0.08
		Notes	Exceeding 1,000uF, +0.02 every 1,000uF							
Leakage Current (LC)	After 2 minutes, 20℃ (uA, Max.)		0.01CV or 3uA, whichever is greater.							
Low Temperature Characteristics	Impedance Ratio (Max.)	$Z_{-25℃}/Z_{+20℃}$	4	3	2	2	2	2	2	2
		$Z_{-55℃}/Z_{+20℃}$	8	5	4	3	3	3	3	3
Endurance	105℃, Rated Voltage Applied (With the rated ripple current)	Hours	3,000 (2,000hrs. for Ø4~Ø6.3)							
		△C/C	Within ±30% of initial value							
		tanδ	300% or less of the initial specified value							
		LC	The initial specified value or less							
Shelf life	105℃	Hours	1,000							
		Other Items	same as those for the endurance.							

■ Dimensions



D	L	A	B	C	P	α	W
4	5.7	4.3	4.3	5.0	1.0	±0.3	0.5-0.8
5	5.7	5.3	5.3	6.0	1.5	±0.3	0.5-0.8
6.3	5.7	6.6	6.6	7.3	2.0	±0.3	0.5-0.8
6.3	7.7	6.6	6.6	7.3	2.0	±0.3	0.5-0.8
8	10.5	8.3	8.3	9.0	3.1	±0.5	0.7-1.2
10	10.5	10.3	10.3	11.0	4.7	±0.5	0.7-1.2

■ Rated Ripple Current Multipliers

Frequency (Hz) / Capacitance (uF)	50	120	1k	10k	100K
Under 100	0.35	0.50	0.70	0.90	1.00
100 ~ 2200uF	0.40	0.65	0.85	0.95	1.00

GVE Series

■ Dimensions

WV / uF	6.3v			10v			16v			25v			35v			50v		
	ΦDxL	Imp.	R.C.	ΦDxL	Imp.	R.C.	ΦDxL	Imp.	R.C.	ΦDxL	Imp.	R.C.	ΦDxL	Imp.	R.C.	ΦDxL	Imp.	R.C.
1																4x5.7	5.0	30
1.5																4x5.7	5.0	30
2.2																4x5.7	5.0	30
3.3													4x5.7	3.0	60	4x5.7 5x5.7	5.0 3.0	30 50
4.7													4x5.7	3.0	60	4x5.7 5x5.7	5.0 3.0	30 50
10										4x5.7	3.0	60	4x5.7 5x5.7	3.0 1.8	60 95	5x5.7 6.3x5.7	3.0 2.0	50 70
15							4x5.7	3.0	60	4x5.7	3.0	60	5x5.7	1.8	95	6.3x5.7	2.0	70
22				4x5.7	3.0	60	4x5.7 5x5.7	3.0 1.8	60 95	4x5.7 5x5.7	3.0 1.8	60 95	5x5.7	1.8	95	6.3x5.7	2.0	70
33				4x5.7	3.0	60	4x5.7 5x5.7	3.0 1.8	60 95	4x5.7 5x5.7	3.0 1.8	60 95	5x5.7 6.3x5.7	1.8 1.0	95 140	6.3x5.7 6.3x7.7	2.0 1.0	70 120
47	4x5.7	3.0	60	4x5.7 5x5.7	3.0 1.8	60 95	5x5.7 6.3x5.7	1.8 1.0	95 140	5x5.7 6.3x5.7	1.8 1.0	95 140	6.3x5.7	1.0	140	6.3x7.7	1.0	120
56	5x5.7	1.8	95	4x5.7 5x5.7	3.0 1.8	60 95	5x5.7 6.3x5.7	1.8 1.0	95 140	6.3x5.7	1.0	140	6.3x5.7	1.0	140	6.3x7.7	1.0	120
68	5x5.7	1.8	95	5x5.7	1.8	95	5x5.7 6.3x5.7	1.8 1.0	95 140	6.3x5.7	1.0	140	6.3x5.7 6.3x7.7	1.0 0.6	140 230	6.3x7.7 8x10.5	1.0 0.6	120 300
100	5x5.7	1.8	95	5x5.7 6.3x5.7	1.8 1.0	95 140	6.3x5.7 6.3x7.7	1.0 0.6	140 230	6.3x5.7 6.3x7.7	1.0 0.6	140 230	6.3x7.7	0.6	230	8x10.5 10x10.5	0.6 0.3	300 500
150	5x5.7 6.3x5.7	1.8 1.0	95 140	6.3x5.7	1.0	140	6.3x5.7 6.3x7.7	1.0 0.6	140 230	6.3x7.7 8x10.5	0.6 0.3	230 450	6.3x7.7 8x10.5	0.6 0.3	230 450	10x10.5	0.3	500
220	6.3x5.7	1.0	140	6.3x5.7 6.3x7.7	1.0 0.6	140 230	6.3x7.7	0.6	230	8x10.5	0.3	450	8x10.5 10x10.5	0.3 0.15	450 670	10x10.5 10x12.5	0.3 0.16	500 580
330	6.3x5.7 6.3x7.7	1.0 0.6	140 230	6.3x7.7	0.6	230	6.3x7.7 8x10.5	0.6 0.3	230 450	8x10.5 10x10.5	0.3 0.15	450 670	10x10.5	0.15	670			
470	6.3x7.7	0.6	230	6.3x7.7 8x10.5	0.6 0.3	230 450	8x10.5	0.3	450	10x10.5 10x12.5	0.15 0.075	670 800	10x10.5 10x12.5	0.15 0.075	670 800			
680	8x10.5	0.3	450	8x10.5	0.3	450	8x10.5 10x10.5	0.3 0.15	450 670									
1000	8x10.5	0.3	450	8x10.5 10x10.5	0.3 0.15	450 670	10x10.5	0.15	670									
1500	8x10.5 10x10.5	0.3 0.15	450 670															

Note1: Case size ΦD x L(mm), ripple current (mA, rms) at 105℃, 100KHz.
Note2: Produce custom product too, which are not found in these tables.

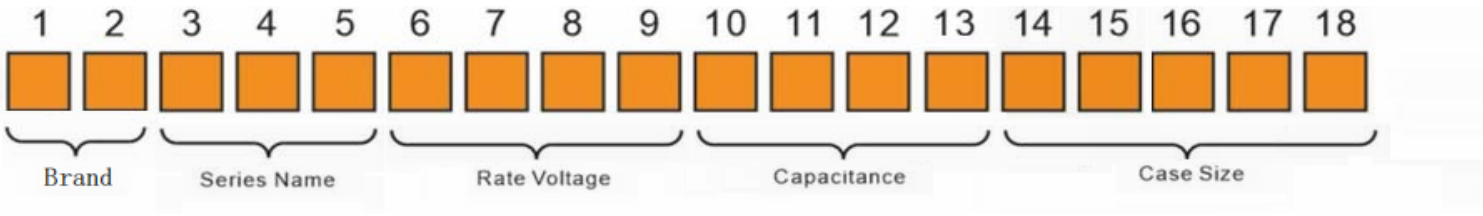
GVE Series

■ Dimensions

WV / uF	63v			80v			100v		
	ΦDxL	Imp.	R.C.	ΦDxL	Imp.	R.C.	ΦDxL	Imp.	R.C.
4.7	5x5.7	3.0	50						
10	5x5.7 6.3x5.7	3.0 1.5	50 80	6.3x5.7 6.3x7.7	3.0 2.4	40 60	6.3x7.7	2.4	60
22	6.3x5.7 6.3x7.7	1.5 1.2	80 120	6.3x7.7 8x10.5	2.4 1.5	60 110	8x10.5	1.5	110
33	6.3x7.7 8x10.5	1.2 0.7	120 250	8x10.5	1.5	110	8x10.5 10x10.5	1.5 0.8	110 170
47	8x10.5	0.65	250	8x10.5	1.5	110	10x10.5	0.8	170
56	8x10.5	0.65	250	8x10.5	1.5	110	10x10.5	0.8	170
68	8x10.5	0.65	250	10x10.5	0.8	170	10x10.5	0.8	170
82	8x10.5 10x10.5	0.65 0.35	250 400	10x10.5	0.8	170			
100	10x10.5	0.35	400	10x10.5	0.8	170			
150	10x10.5	0.35	400						

Note1: Case size ΦD x L(mm), ripple current (mA, rms) at 105℃, 100KHz.
Note2: Produce custom product too, which are not found in these tables.

■ Explanation of Part Numbers



Brand
RY

Series
GVS
GVT
GVE
GVZ
GVM
GVL
GVU
GVY
GVF
GVR
GVG
GVD
GVP
GVT
GVC
GVN
GVK
GVA

Voltage (W.V)	Code
4	4V
6.3	6.3V
10	10V
16	16V
25	25V
35	35V
50	50V
63	63V
80	80V
100	100V
125	125V
160	160V
180	180V
200	200V
220	220V
250	250V
315	315V
330	330V
350	350V
400	400V
420	420V
450	450V
500	500V

Capacitance (UF)	Code
0.1	0.1UF
0.22	0.22UF
0.33	0.33UF
0.47	0.47UF
1	1UF
2.2	2.2UF
3.3	3.3UF
4.7	4.7UF
10	10UF
22	22UF
33	33UF
47	47UF
68	68UF
100	100UF
220	220UF
330	330UF
470	470UF
680	680UF
1000	1000UF
2200	2200UF
3300	3300UF
4700	4700UF
6800	6800UF

Size φDxL	Code
4×5(5.7)	4*5
4×7	4*7
5×5(5.7)	5*5
5×7	5*7
5×11	5*11
6.3×5(5.7)	6*5
6.3×7(7.7)	6*7
6.3×11	6*11
8×5	8*5
8×6.5	8*6
8×9	8*9
8×10(10.5)	8*10
8×11(11.5)	8*11
8×12	8*12
10×10(10.5)	10*10
10×12.5	10*12
10×14	10*14
12.5×13.5	12*13
12.5×16	12*16
16×16.5	16*16
16×25	16*25
20×25	20*25
35×42	35*42

■ Taping Specifications

■ Carrier Tape

Fig.01

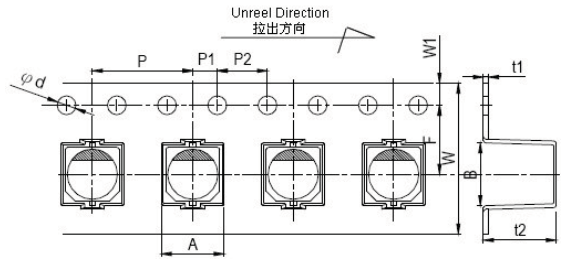


Fig.02

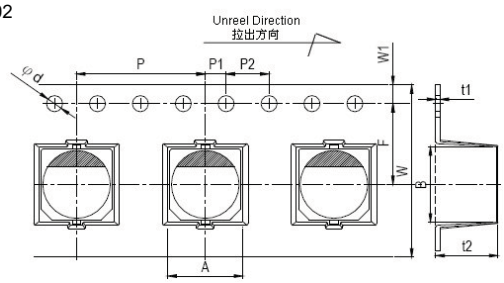
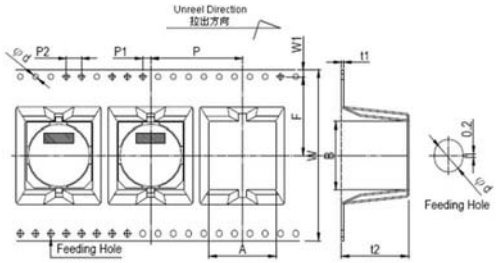
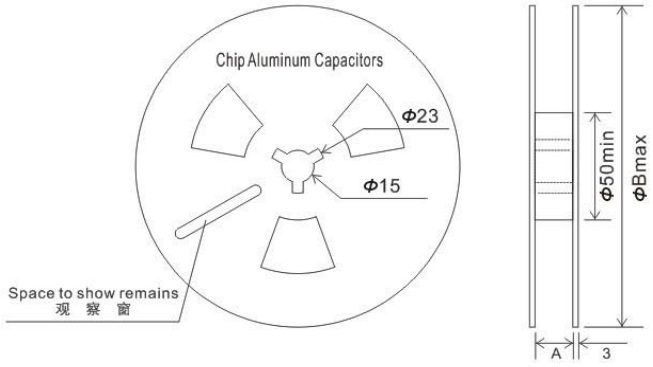


Fig.03



Case Size	W (mm)	W1 (mm)	F (mm)	P (mm)	P1 (mm)	P2 (mm)	A (mm)	B (mm)	t1 (mm)	t2 (mm)
φ4x5.7	12	1.75	5.5	8	2	4	4.7	4.7	0.4	6.3
φ5x5.7	12		5.5	12			6	6		6.3
φ6.3x5.7	16		7.5	12			7	7		6.3
φ6.3x7.7	16		7.5	12			7	7		8.3
φ8x6.5	16		7.5	12			8.7	8.7		7
φ8x10.5	24		11.5	16			8.7	8.7		11
φ10x10.5	24		11.5	16			10.7	10.7		11
φ10x13.5	24		11.5	16			10.7	10.7		14.1
φ12.5x13.5	32		14.2	24			14	14	0.5	14.1
φ12.5x16	32		14.2	24			14	14		16.4
φ16x16.5	44		20.2	28			17.5	17.5		16.9
φ16x21.5	44		20.2	28			17.5	17.5		21.9
φ18x16.5	44		20.2	32			19.5	19.5		16.9
φ18x21.5	44		20.2	32			19.5	19.5		21.9
Tolerance	±0.3	±0.15	±0.1	±0.1	±0.1	±0.1	±0.2	±0.2	±0.1	±0.2

■ Carrier Tape



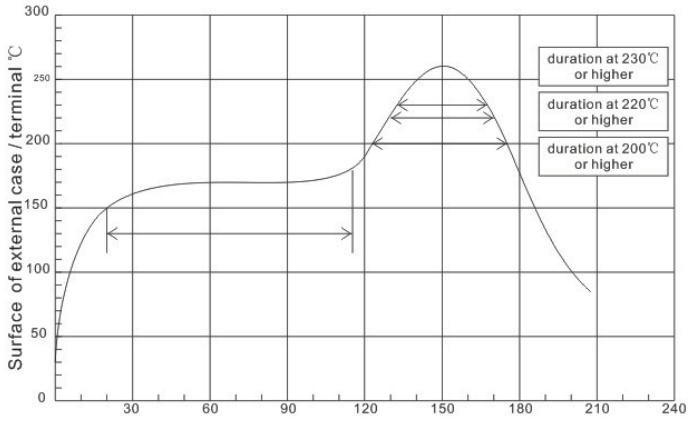
Case Size	Reel	Carton	A±0.3	B±2	Case Size	Reel	Carton	A±0.3	B±2
φ4x5.7	2000	20000	14	382	φ10x13.5	300	3000	26	382
φ5x5.7	1000	10000	14	382	φ12.5x13.5	200	600	34	332
φ6.3x5.7	1000	10000	18	382	φ12.5x16	150	450	34	332
φ6.3x7.7	1000	10000	18	382	φ16x16.5	125	250	46	332
φ8x6.5	1000	10000	18	382	φ16x21.5	75	150	46	332
φ8x10.2	500	5000	26	382	φ18x16.5	125	250	46	332
φ10x10.2	500	5000	26	382	φ18x21.5	75	150	46	332

■ Reflow Soldering Conditions

■ Recommended soldering heat conditions

1. The following conditions are recommended for air convection and infrared reflow soldering on the SMD products onto a glass epoxy circuit boards by cream solder. The temperatures shown are the surface temperature values on the top of the can and on the capacitor terminals.
2. Reflow should be performed twice or less.
3. Please ensure that the capacitor became cold enough to the room temperature (5 to 35℃) before the second reflow.

■ Classification Reflow Profile

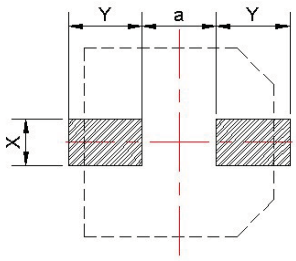


Notice:

1. Average ramp-up rate is 5℃/second max.
2. Ramp-down rate is 6℃/second max.
3. Time from 25℃ to peak temperature is 6 minutes max.

	Preheat	Time maintained above 200℃	Time maintained above 220℃	Time maintained above 230℃	Peak temp.	Reflow number
Dia. 4~10mm general	120℃ to 180℃ 120 sec. Max.	60 sec.	50 sec.	30 sec.	250℃ Max.	2 times or less
φ8x6.5		50 sec.	40 sec.	25 sec.	245℃ Max.	2 times or less
WV 160v-450v		60 sec.	50 sec.	30 sec.	240℃ Max.	2 times or less
Dia. 12.5~20mm Cap.		60 sec.	40 sec.	30 sec.	240℃ Max.	2 times or less
125℃ Category Temp.		60 sec.	40 sec.	30 sec.	250℃ Max.	2 times or less

■ Recommended Solder Land Size on PC Board



Size	X	Y	a
φ4	1.6	2.6	1.0
φ5	1.6	3.0	1.4
φ6.3	1.6	3.5	2.1
φ8x6.5	1.6	4.5	2.1
φ8x10.5	2.5	3.5	3.0
φ10	2.5	4.0	4.0
φ12.5	3.0	5.7	4.0
φ16	3.5	6.5	6.0