

TGV SERIES
125°C Low ESR, Lead Free Reflow Soldering
◆FEATURES

- Load Life : 125°C 3000~5000 hours Low ESR.
- Lead free reflow soldering is available.
- ESR standard after endurance test.
- Available for high density mounting.
- Large can size SMD.
- RoHS compliance.


◆SPECIFICATIONS

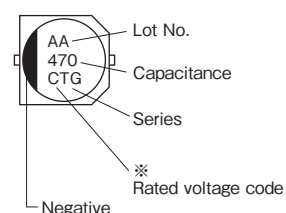
Items	Characteristics																								
Category Temperature Range	-40~+125℃																								
Rated Voltage Range	16~35Vdc																								
Capacitance Tolerance	±20%(20℃,120Hz)																								
Leakage Current(MAX)	I=0.01CV or 3μA whichever is greater. (After 2 minutes application of rated voltage) I=Leakage Current (μA) C=Capacitance (μF) V=Rated Voltage (Vdc)																								
(tanδ) Dissipation Factor(MAX)	<table border="1"><tr><td>Rated Voltage (Vdc)</td><td>16</td><td>25</td><td>35</td></tr><tr><td>φ8~10</td><td>0.23</td><td>0.18</td><td>0.16</td></tr><tr><td>φ12.5~18</td><td>0.18</td><td>0.16</td><td>0.14</td></tr></table> (20℃,120Hz) When rated capacitance is over 1000μF, tanδ shall be added 0.02 to the listed value with Increase of every 1000 μF.				Rated Voltage (Vdc)	16	25	35	φ8~10	0.23	0.18	0.16	φ12.5~18	0.18	0.16	0.14									
Rated Voltage (Vdc)	16	25	35																						
φ8~10	0.23	0.18	0.16																						
φ12.5~18	0.18	0.16	0.14																						
Endurance	After applying rated voltage for specified time at 125℃, the capacitors shall meet the following requirements. After applying rated voltage with rated ripple current for specified time at 125℃, the capacitors shall meet the following requirements. <table border="1"><tr><td>Capacitance Change</td><td>Within ±30% of the initial value.</td></tr><tr><td>Dissipation Factor</td><td>Not more than 300% of the specified value.</td></tr><tr><td>Leakage Current</td><td>Not more than the specified value.</td></tr></table> <table border="1"><tr><td>Case Size</td><td>LifeTime (hrs)</td></tr><tr><td>φD≤10</td><td>3000</td></tr><tr><td>φD≥12.5</td><td>5000</td></tr></table> <table border="1"><tr><td></td><td>8×10.5</td><td>10×10.5</td></tr><tr><td>20℃</td><td>0.6</td><td>0.4</td></tr><tr><td>-40℃</td><td>4.5</td><td>3.5</td></tr></table> (Ω/100kHz) ESR standard after endurance test (125℃, 2000 hrs with rated voltage applied)				Capacitance Change	Within ±30% of the initial value.	Dissipation Factor	Not more than 300% of the specified value.	Leakage Current	Not more than the specified value.	Case Size	LifeTime (hrs)	φD≤10	3000	φD≥12.5	5000		8×10.5	10×10.5	20℃	0.6	0.4	-40℃	4.5	3.5
Capacitance Change	Within ±30% of the initial value.																								
Dissipation Factor	Not more than 300% of the specified value.																								
Leakage Current	Not more than the specified value.																								
Case Size	LifeTime (hrs)																								
φD≤10	3000																								
φD≥12.5	5000																								
	8×10.5	10×10.5																							
20℃	0.6	0.4																							
-40℃	4.5	3.5																							
Low Temperature Stability Impedance Ratio(MAX)	<table border="1"><tr><td>Rated Voltage (Vdc)</td><td>16</td><td>25</td><td>35</td></tr><tr><td>Z(-40℃)/Z(20℃)</td><td>3</td><td>3</td><td>3</td></tr></table> (120Hz)				Rated Voltage (Vdc)	16	25	35	Z(-40℃)/Z(20℃)	3	3	3													
Rated Voltage (Vdc)	16	25	35																						
Z(-40℃)/Z(20℃)	3	3	3																						

◆MULTIPLIER FOR RIPPLE CURRENT

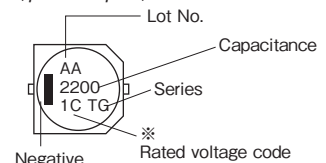
Frequency (Hz)		120	1k	10k	100k≤
Coefficient	100μF	0.50	0.80	0.95	1.00
	220~3300μF	0.60	0.85	0.95	1.00

◆MARKING

(φ8, φ10)



(φ12.5~φ18)



※ Voltage code

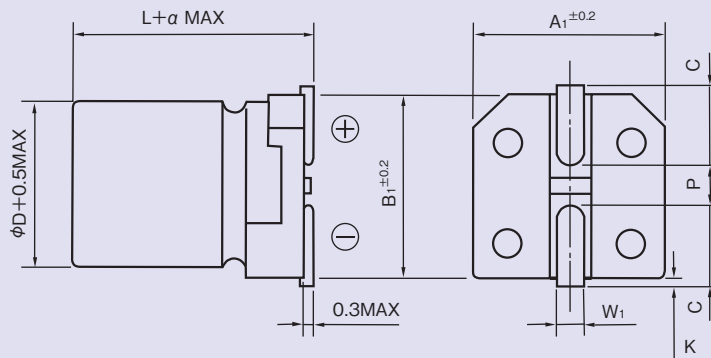
Rated voltage (Vdc)		16	25	35
Voltage code	φD≤10	C	E	V
	φD≥12.5	1C	1E	1V

◆PART NUMBER

□□□	TGV	□□□□□	M	□□□	D×L
Rated Voltage	Series	Capacitance	Capacitance Tolerance	Option	Case Size

◆ DIMENSIONS

(mm)



φD	L	A1	B1	C	W1	P	K	α
8	10.5	8.3	8.3	2.9	0.8~1.1	3.1	0.5Max	0
10	10.5	10.3	10.3	3.2	0.8~1.1	4.5	0.5Max	0
12.5	13.5	13	13	4.9	0.8~1.1	4.5	0.7±0.4	0.5
12.5	16	13	13	4.9	0.8~1.1	4.5	0.7±0.4	0.5
16	16.5	17	17	6	1.0~1.6	6.8	0.7±0.4	0.5
16	21.5	17	17	6	1.0~1.6	6.8	0.7±0.4	0.5
18	16.5	19	19	7	1.0~1.6	6.8	0.7±0.4	0.5
18	21.5	19	19	7	1.0~1.6	6.8	0.7±0.4	0.5

◆ STANDARD SIZE

Size φD×L (mm), Rated Ripple Current (mA r.m.s./125°C, 100kHz), ESR (Ω MAX/100kHz)

Vdc	Cap (μF)	Size (φD×L)	Ripple	ESR	
				20°C	-40°C
16	220	8×10.5	350	0.150	3.0
	470	10×10.5	550	0.120	2.0
	820	12.5×13.5	850	0.092	1.5
	1000	12.5×16	1000	0.074	1.4
	1500	16×16.5	1200	0.066	1.2
	1800	18×16.5	1300	0.064	1.2
	2200	16×21.5	1650	0.041	0.8
	3300	18×21.5	1800	0.039	0.8
25	220	8×10.5	350	0.150	3.0
	330	10×10.5	550	0.120	2.0
	680	12.5×13.5	850	0.092	1.5
	820	12.5×16	1000	0.074	1.4
	1200	16×16.5	1200	0.066	1.2
	1500	18×16.5	1300	0.064	1.2
	2200	16×21.5	1650	0.041	0.8
	2700	18×21.5	1800	0.039	0.8

Vdc	Cap (μF)	Size (φD×L)	Ripple	ESR	
				20°C	-40°C
35	100	8×10.5	350	0.150	3.0
	220	10×10.5	550	0.120	2.0
	470	12.5×13.5	850	0.092	1.5
	560	12.5×16	1000	0.074	1.4
	820	16×16.5	1200	0.066	1.2
	1000	18×16.5	1300	0.064	1.2
	1500	16×21.5	1650	0.041	0.8
	1800	18×21.5	1800	0.039	0.8