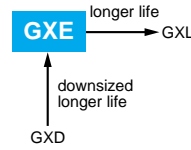


# GXE Series

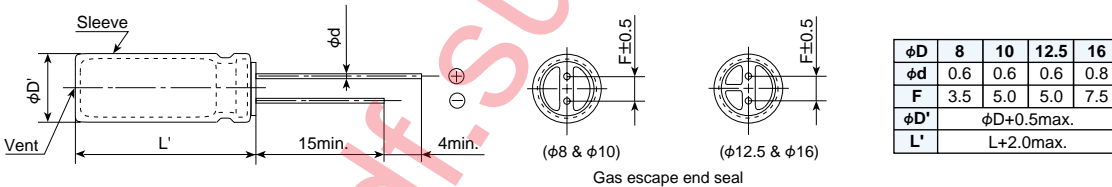
- For automobile modules and other high temperature applications
- Downsized, long life, low impedance and better low temperature characteristics
- Endurance with ripple current : 125°C 2000 to 5000 hours
- Solvent-proof type except 63 to 450V (see PRECAUTIONS AND GUIDELINES)



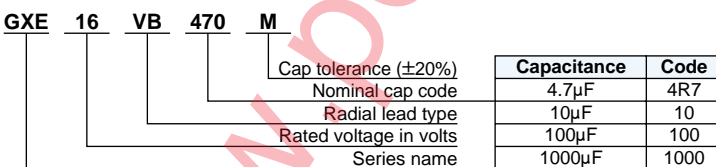
## SPECIFICATIONS

Items	Characteristics											
Category	-40 to +125°C (10 to 250V <sub>dc</sub> ) -25 to +125°C (350 to 450V <sub>dc</sub> )											
Temperature Range												
Rated Voltage Range	10 to 450V <sub>dc</sub>											
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)											
Leakage Current	10 to 100V <sub>dc</sub>					160 to 450V <sub>dc</sub>						
	I=0.03CV or 4μA, whichever is greater.					CV≤1000		I=0.1CV+40				
						CV>1000		I=0.04CV+100				
Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C, 1 minute)												
Dissipation Factor (tanδ)	Rated voltage (V <sub>dc</sub> )	10V	16V	25V	35V	50V	63V	80V	100V	160 to 250V	350 to 450V	
	tanδ (Max.)	0.20	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.20	0.24	
	When nominal capacitance exceeds 1000μF, add 0.02 to the above value for each 1000μF increase. (at 20°C, 120Hz)											
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V <sub>dc</sub> )	10V	16V	25V	35V	50V	63V	80V	100V	160 to 250V	350 to 450V	
	Z(-25°C)/Z(+20°C)	3	2	2	2	2	2	2	2	3	6	
	Z(-40°C)/Z(+20°C)	6	4	4	4	4	4	4	4	6	—	
(at 120Hz)												
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for the specified time at 125°C.											
		10 to 100V <sub>dc</sub>					160 to 450V <sub>dc</sub>					
	Time	φ8 : 2000hours φ10 : 3000hours φ12.5 & φ16 : 5000hours					2000hours					
	Capacitance change	≤±30% of the initial value					≤±20% of the initial value					
	D.F. (tanδ)	≤300% of the initial specified value					≤200% of the initial specified value					
	Leakage current	≤The initial specified value					≤The initial specified value					
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1000 hours (500 hours for 350 to 450VV) at 125°C without voltage applied.											
		10 to 100V <sub>dc</sub>					160 to 450V <sub>dc</sub>					
	Capacitance change	≤±30% of the initial value					≤±20% of the initial value					
	D.F. (tanδ)	≤300% of the initial specified value					≤200% of the initial specified value					
	Leakage current	≤The initial specified value					≤500% of the initial specified value					

## DIMENSIONS (Radial Lead Type=VB) [mm]



## PART NUMBERING SYSTEM



## RATED RIPPLE CURRENT MULTIPLIERS

● (10 to 100V<sub>dc</sub>) Frequency Multipliers

Capacitance (μF)	Frequency (Hz)			
	120	1k	10k	100k
4.7 to 100	0.40	0.75	0.90	1.00
220 to 470	0.50	0.85	0.94	1.00
1000	0.60	0.87	0.95	1.00
2200 to 3300	0.75	0.90	0.95	1.00
4700	0.85	0.95	0.98	1.00

● (160 to 450V<sub>dc</sub>) Frequency Multipliers

Capacitance (μF)	Frequency (Hz)					
	50	120	300	1k	10k	100k
4.7 to 33	0.75	1.00	1.25	1.50	1.75	1.80
47 to 150	0.80	1.00	1.15	1.30	1.40	1.50

**◆STANDARD RATINGS**

V <sub>dc</sub> Items Capacitance (μF)	10			16			25			35		
	Case size φD×L (mm)	Impedance (Ω <sub>max./</sub> 20°C, 100kHz)	Rated ripple (mA <sub>rms/</sub> 125°C, 100kHz)	Case size φD×L (mm)	Impedance (Ω <sub>max./</sub> 20°C, 100kHz)	Rated ripple (mA <sub>rms/</sub> 125°C, 100kHz)	Case size φD×L (mm)	Impedance (Ω <sub>max./</sub> 20°C, 100kHz)	Rated ripple (mA <sub>rms/</sub> 125°C, 100kHz)	Case size φD×L (mm)	Impedance (Ω <sub>max./</sub> 20°C, 100kHz)	Rated ripple (mA <sub>rms/</sub> 125°C, 100kHz)
100				8×12	0.32	340	8×12	0.32	340	8×12	0.32	340
220	8×12	0.32	340	10×12.5	0.15	620	10×12.5	0.15	620	10×12.5	0.15	620
330	10×12.5	0.15	620	10×12.5	0.15	620	10×16	0.094	790	10×16	0.094	790
470	10×12.5	0.15	620	10×16	0.094	790	10×20	0.075	950	10×20	0.075	950
1,000	10×20	0.075	950	12.5×20	0.058	1,080	12.5×25	0.040	1,350	12.5×20	0.058	1,080
2,200	12.5×25	0.040	1,350	16×25	0.031	1,620	16×31.5	0.025	1,860	16×25	0.031	1,620
3,300	16×25	0.031	1,620	16×31.5	0.025	1,860						
4,700	16×31.5	0.025	1,860									

V <sub>dc</sub> Items Capacitance (μF)	Non solvent-proof											
	50			63			80			100		
	Case size φD×L (mm)	Impedance (Ω <sub>max./</sub> 20°C, 100kHz)	Rated ripple (mA <sub>rms/</sub> 125°C, 100kHz)	Case size φD×L (mm)	Impedance (Ω <sub>max./</sub> 20°C, 100kHz)	Rated ripple (mA <sub>rms/</sub> 125°C, 100kHz)	Case size φD×L (mm)	Impedance (Ω <sub>max./</sub> 20°C, 100kHz)	Rated ripple (mA <sub>rms/</sub> 125°C, 100kHz)	Case size φD×L (mm)	Impedance (Ω <sub>max./</sub> 20°C, 100kHz)	Rated ripple (mA <sub>rms/</sub> 125°C, 100kHz)
4.7										8×12	2.0	130
10	8×12	0.75	180							8×12	1.5	150
22	8×12	0.50	250				8×12	1.50	150	10×12.5	0.80	480
33	8×12	0.50	280	8×12	1.5	150	10×12.5	0.80	480	10×12.5	0.80	480
47	8×12	0.50	280	10×12.5	0.59	530	10×12.5	0.80	480	10×16	0.55	630
100	10×12.5	0.20	520	10×16	0.41	690	10×20	0.39	790	12.5×20	0.25	990
220	10×20	0.098	880	12.5×20	0.16	1,050	12.5×25	0.18	1,240	16×25	0.11	1,500
330	12.5×20	0.081	990	12.5×25	0.12	1,290	12.5×30	0.16	1,390	16×31.5	0.079	1,790
470	12.5×25	0.059	1,150	12.5×30	0.097	1,460	16×25	0.11	1,500			
1,000	16×31.5	0.032	1,590	16×31.5	0.059	1,850						

V <sub>dc</sub> Items Capacitance (μF)	Non solvent-proof											
	160		200		250		350		400		450	
	Case size φD×L (mm)	Rated ripple (mA <sub>rms/</sub> 125°C, 120Hz)	Case size φD×L (mm)	Rated ripple (mA <sub>rms/</sub> 125°C, 120Hz)	Case size φD×L (mm)	Rated ripple (mA <sub>rms/</sub> 125°C, 120Hz)	Case size φD×L (mm)	Rated ripple (mA <sub>rms/</sub> 125°C, 120Hz)	Case size φD×L (mm)	Rated ripple (mA <sub>rms/</sub> 125°C, 120Hz)	Case size φD×L (mm)	Rated ripple (mA <sub>rms/</sub> 125°C, 120Hz)
4.7							10×20	53	10×20	53	10×25	58
10			10×20	78	10×20	78	10×25	85	10×25	86	12.5×20	86
22	10×20	115	10×25	126	12.5×20	128	12.5×25	139	12.5×30	142	16×25	154
33	10×25	154	12.5×20	157	12.5×25	171	16×25	189	16×25	189	16×31.5	203
47	12.5×20	187	12.5×25	204	16×25	225	16×31.5	243	16×31.5	243		
68	12.5×25	245	16×20	250	16×31.5	292						
100	16×25	329	16×25	329								
150	16×31.5	434										