

# GXE Series

- For automobile modules and other high temperature applications
- Downsized, long life, low impedance and better low temperature characteristics
- Endurance with ripple current : 2,000 to 5,000 hours at 125°C
- Solvent resistant type except 63 to 450V (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

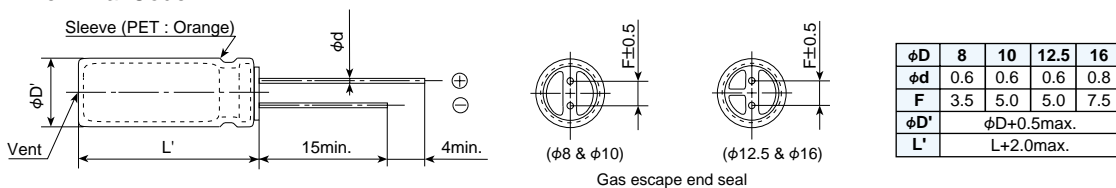


## ◆ SPECIFICATIONS

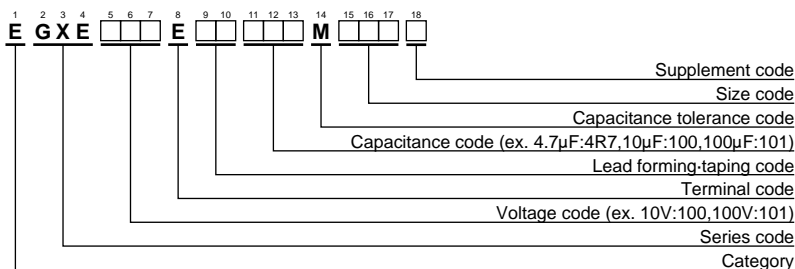
Items	Characteristics										
Category	-40 to +125°C (10 to 250V <sub>dc</sub> ) -25 to +125°C (350 to 450V <sub>dc</sub> )										
Temperature Range											
Rated Voltage Range	10 to 450V <sub>dc</sub>										
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)										
Leakage Current	10 to 100V <sub>dc</sub>					160 to 450V <sub>dc</sub>					
	I=0.03CV or 4µA, whichever is greater.					CV≤1,000 I=0.1CV+40					
						CV>1,000 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 1,000µF, add 0.02 to the above value for each 1,000µF 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 : 2,000hours φ10 : 3,000hours φ12.5 & φ16 : 5,000hours					2,000hours				
	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 1,000 hours (500 hours for 350 to 450V <sub>dc</sub> ) at 125°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.										
		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 [mm]

- Terminal Code : E



## ◆ PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

◆STANDARD RATINGS

□ is not solvent resistant.

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/20°C, 100kHz)	Rated ripple current (mA <sub>rms</sub> /125°C, Note1)	Part No.	WV (Vdc)	Cap (μF)	Case size φD×L(mm)	Impedance (Ωmax/20°C, 100kHz)	Rated ripple current (mA <sub>rms</sub> /125°C, Note1)	Part No.	
10	220	8×12	0.32	340	EGXE100E□□221MH12D	80	47	10×12.5	0.80	480	EGXE800E□□470MJC5S	
	330	10×12.5	0.15	620	EGXE100E□□331MJC5S		100	10×20	0.39	790	EGXE800E□□101MJ20S	
	470	10×12.5	0.15	620	EGXE100E□□471MJC5S		220	12.5×25	0.18	1,240	EGXE800E□□221MK25S	
	1,000	10×20	0.075	950	EGXE100E□□102MJ20S		330	12.5×30	0.16	1,390	EGXE800E□□331MK30S	
	2,200	12.5×25	0.040	1,350	EGXE100E□□222MK25S		470	16×25	0.11	1,500	EGXE800E□□471ML25S	
	3,300	16×25	0.031	1,620	EGXE100E□□332ML25S		100	4.7	8×12	2.0	130	EGXE101E□□4R7MH12D
	4,700	16×31.5	0.025	1,860	EGXE100E□□472MLN3S			10	8×12	1.5	150	EGXE101E□□100MH12D
16	100	8×12	0.32	340	EGXE160E□□101MH12D	22		10×12.5	0.80	480	EGXE101E□□220MJC5S	
	220	10×12.5	0.15	620	EGXE160E□□221MJC5S	33		10×12.5	0.80	480	EGXE101E□□330MJC5S	
	330	10×12.5	0.15	620	EGXE160E□□331MJC5S	47		10×16	0.55	630	EGXE101E□□470MJ16S	
	470	10×16	0.094	790	EGXE160E□□471MJ16S	100		12.5×20	0.25	990	EGXE101E□□101MK20S	
	1,000	12.5×20	0.058	1,080	EGXE160E□□102MK20S	220		16×25	0.11	1,500	EGXE101E□□221ML25S	
	2,200	16×25	0.031	1,620	EGXE160E□□222ML25S	330	16×31.5	0.079	1,790	EGXE101E□□331MLN3S		
	3,300	16×31.5	0.025	1,860	EGXE160E□□332MLN3S	160	22	10×20	—	115	EGXE161E□□220MJ20S	
25	100	8×12	0.32	340	EGXE250E□□101MH12D		33	10×25	—	154	EGXE161E□□330MJ25S	
	220	10×12.5	0.15	620	EGXE250E□□221MJC5S		47	12.5×20	—	187	EGXE161E□□470MK20S	
	330	10×16	0.094	790	EGXE250E□□331MJ16S		68	12.5×25	—	245	EGXE161E□□680MK25S	
	470	10×20	0.075	950	EGXE250E□□471MJ20S		100	16×25	—	329	EGXE161E□□101ML25S	
	1,000	12.5×25	0.040	1,350	EGXE250E□□102MK25S		150	16×31.5	—	434	EGXE161E□□151MLN3S	
	2,200	16×31.5	0.025	1,860	EGXE250E□□222MLN3S		200	10	10×20	—	78	EGXE201E□□100MJ20S
	35	100	8×12	0.32	340	EGXE350E□□101MH12D		22	10×25	—	126	EGXE201E□□220MJ25S
100		10×12.5	0.15	620	EGXE350E□□101MJC5S	33		12.5×20	—	157	EGXE201E□□330MK20S	
220		10×16	0.094	790	EGXE350E□□221MJ16S	47		12.5×25	—	204	EGXE201E□□470MK25S	
330		10×20	0.075	950	EGXE350E□□331MJ20S	68		16×20	—	250	EGXE201E□□680ML20S	
470		12.5×20	0.058	1,080	EGXE350E□□471MK20S	100		16×25	—	329	EGXE201E□□101ML25S	
1,000		16×25	0.031	1,620	EGXE350E□□102ML25S	250		10	10×20	—	78	EGXE251E□□100MJ20S
50		10	8×12	0.75	180		EGXE500E□□100MH12D	22	12.5×20	—	128	EGXE251E□□220MK20S
	22	8×12	0.50	250	EGXE500E□□220MH12D		33	12.5×25	—	171	EGXE251E□□330MK25S	
	33	8×12	0.50	280	EGXE500E□□330MH12D		47	16×25	—	225	EGXE251E□□470ML25S	
	47	8×12	0.50	280	EGXE500E□□470MH12D		68	16×31.5	—	292	EGXE251E□□680MLN3S	
	100	10×12.5	0.20	520	EGXE500E□□101MJC5S		350	4.7	10×20	—	53	EGXE351E□□4R7MJ20S
	220	10×20	0.098	880	EGXE500E□□221MJ20S			10	10×25	—	85	EGXE351E□□100MJ25S
	330	12.5×20	0.081	990	EGXE500E□□331MK20S	22		12.5×25	—	139	EGXE351E□□220MK25S	
470	12.5×25	0.059	1,150	EGXE500E□□471MK25S	33	16×25		—	189	EGXE351E□□330ML25S		
1,000	16×31.5	0.032	1,590	EGXE500E□□102MLN3S	47	16×31.5		—	243	EGXE351E□□470MLN3S		
63	33	8×12	1.5	150	EGXE630E□□330MH12D	400		4.7	10×20	—	53	EGXE401E□□4R7MJ20S
	47	10×12.5	0.59	530	EGXE630E□□470MJC5S			10	10×25	—	86	EGXE401E□□100MJ25S
	100	10×16	0.41	690	EGXE630E□□101MJ16S		22	12.5×30	—	142	EGXE401E□□220MK30S	
	220	12.5×20	0.16	1,050	EGXE630E□□221MK20S		33	16×25	—	189	EGXE401E□□330ML25S	
	330	12.5×25	0.12	1,290	EGXE630E□□331MK25S		47	16×31.5	—	243	EGXE401E□□470MLN3S	
	470	12.5×30	0.097	1,460	EGXE630E□□471MK30S		450	4.7	10×25	—	58	EGXE451E□□4R7MJ25S
	1,000	16×31.5	0.059	1,850	EGXE630E□□102MLN3S			10	12.5×20	—	86	EGXE451E□□100MK20S
80	22	8×12	1.5	150	EGXE800E□□220MH12D	22		16×25	—	154	EGXE451E□□220ML25S	
	33	10×12.5	0.8	480	EGXE800E□□330MJC5S	33		16×31.5	—	203	EGXE451E□□330MLN3S	

□□ : Enter the appropriate lead forming or taping code.

(Note1) Ripple current frequency

10 to 100V = 100kHz

160 to 450V = 120Hz

◆RATED RIPPLE CURRENT MULTIPLIERS

●(10 to 100Vdc) 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
1,000	0.60	0.87	0.95	1.00
2,200 to 3,300	0.75	0.90	0.95	1.00
4,700	0.85	0.95	0.98	1.00

●(160 to 450Vdc) 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	

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.