

GPD Series

- Guaranteed short time at 150°C
- Downsized and high-ripple current version of GPA series
- For automobile modules and other high temperature applications
- Endurance with ripple current : 2,000 to 3,000 hours at 125°C to 135°C
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

GPA
P186

Downsized
Higher ripple current → **GPD**

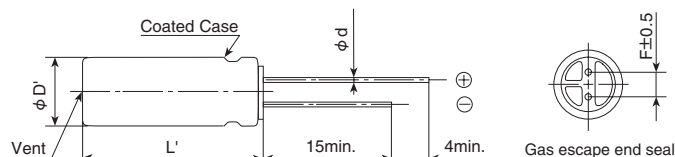


SPECIFICATIONS

Items	Characteristics						
Category	-40 to +135℃						
Temperature Range							
Rated Voltage Range	25 to 100V _{dc}						
Capacitance Tolerance	± 20% (M) (at 20℃, 120Hz)						
Leakage Current	I=0.03CV or 4μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃, 1 minute)						
Dissipation Factor (tan δ)	Rated voltage (V _{dc})	25V	35V	50V	63V	80V	100V
	tan δ (Max.)	0.14	0.12	0.10	0.10	0.08	0.08
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20℃, 120Hz)						
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	25V	35V	50V	63V	80V	100V
	Z(-25℃)/Z(+20℃)	2	2	2	2	2	2
	Z(-40℃)/Z(+20℃)	4	4	4	4	4	4
(at 120Hz)							
Endurance 1	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 125℃ or 135℃.						
	Time	125℃ 3,000hours 135℃ 25 to 50V _{dc} : 3,000hours 63 to 100V _{dc} : 2,000hours					
	Capacitance change	≤ ±30% of the initial value					
	D.F. (tan δ)	≤300% of the initial specified value					
	Leakage current	≤The initial specified value					
Endurance 2	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the test condition that the rated voltage is applied for 100 hours at 150℃ and DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 125℃ or 135℃.						
	Time	125℃ 2,500hours 135℃ 25 to 50V _{dc} : 2,500hours 63 to 100V _{dc} : 1,500hours					
	Capacitance change	≤ ±30% of the initial value					
	D.F. (tan δ)	≤300% 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℃ after exposing them for 1,000 hours at 125℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.						
	Capacitance change	≤ ±30% of the initial value					
	D.F. (tan δ)	≤300% of the initial specified value					
	Leakage current	≤The initial specified value					

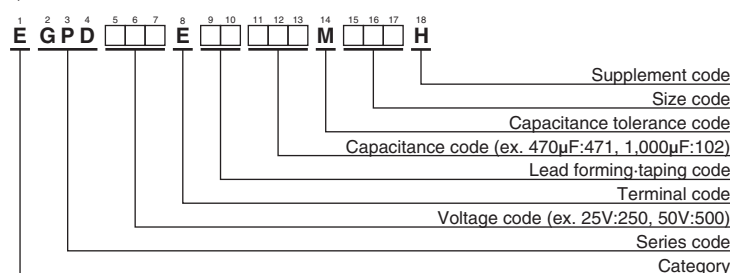
DIMENSIONS [mm]

- Terminal Code : E



φD	12.5	14.5	16	18
φd	0.6	0.8	0.8	0.8
F	5.0	7.5	7.5	7.5
φD'	φD+0.5max.			
L'	L+1.5max.			

PART NUMBERING SYSTEM



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

◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	ESR (Ω max./100kHz)		Rated ripple current (mA rms/100kHz)		Part No.
			20°C	-40°C	125°C	135°C	
25	2,000	12.5 × 20	0.042	0.48	2,760	1,690	EGPD250E□□202MK20H
	2,700	14.5 × 20	0.038	0.37	2,990	1,830	EGPD250E□□272MU20H
	3,000	12.5 × 25	0.033	0.30	3,480	2,010	EGPD250E□□302MK25H
	3,300	16 × 20	0.035	0.27	3,040	1,860	EGPD250E□□332ML20H
	3,600	12.5 × 30	0.028	0.24	4,490	2,900	EGPD250E□□362MK30H
	3,900	14.5 × 25	0.030	0.28	4,120	2,780	EGPD250E□□392MU25H
	4,300	18 × 20	0.034	0.22	3,250	1,870	EGPD250E□□432MM20H
	4,700	12.5 × 35	0.025	0.21	5,140	3,190	EGPD250E□□472MK35H
	4,700	16 × 25	0.028	0.22	4,260	2,870	EGPD250E□□472ML25H
	5,100	12.5 × 40	0.024	0.19	5,810	3,470	EGPD250E□□512MK40H
	5,100	14.5 × 30	0.025	0.24	4,880	3,150	EGPD250E□□512MU30H
	5,600	14.5 × 35	0.023	0.20	5,420	3,360	EGPD250E□□562MU35H
	5,600	16 × 30	0.023	0.18	5,480	3,400	EGPD250E□□562ML30H
	6,200	18 × 25	0.027	0.19	4,500	2,900	EGPD250E□□622MM25H
	6,800	14.5 × 40	0.022	0.16	6,240	3,730	EGPD250E□□682MU40H
	7,500	16 × 35	0.020	0.14	6,070	3,630	EGPD250E□□752ML35H
	7,500	18 × 30	0.022	0.16	5,600	3,470	EGPD250E□□752MM30H
	9,100	16 × 40	0.019	0.12	6,810	3,930	EGPD250E□□912ML40H
	10,000	18 × 35	0.019	0.12	6,280	3,750	EGPD250E□□103MM35H
	12,000	18 × 40	0.018	0.10	7,070	4,080	EGPD250E□□123MM40H
35	1,300	12.5 × 20	0.042	0.48	2,760	1,690	EGPD350E□□132MK20H
	1,600	14.5 × 20	0.038	0.37	2,990	1,830	EGPD350E□□162MU20H
	1,800	12.5 × 25	0.033	0.30	3,480	2,010	EGPD350E□□182MK25H
	2,000	16 × 20	0.035	0.27	3,040	1,860	EGPD350E□□202ML20H
	2,200	12.5 × 30	0.028	0.24	4,490	2,900	EGPD350E□□222MK30H
	2,400	14.5 × 25	0.030	0.28	4,120	2,780	EGPD350E□□242MU25H
	2,400	18 × 20	0.034	0.22	3,250	1,870	EGPD350E□□242MM20H
	2,700	12.5 × 35	0.025	0.21	5,140	3,190	EGPD350E□□272MK35H
	3,000	14.5 × 30	0.025	0.24	4,880	3,150	EGPD350E□□302MU30H
	3,000	16 × 25	0.028	0.22	4,260	2,870	EGPD350E□□302ML25H
	3,300	12.5 × 40	0.024	0.19	5,810	3,470	EGPD350E□□332MK40H
	3,300	14.5 × 35	0.023	0.20	5,420	3,360	EGPD350E□□332MU35H
	3,600	16 × 30	0.023	0.18	5,480	3,400	EGPD350E□□362ML30H
	3,900	18 × 25	0.027	0.19	4,500	2,900	EGPD350E□□392MM25H
	4,300	14.5 × 40	0.022	0.16	6,240	3,730	EGPD350E□□432MU40H
	4,300	16 × 35	0.020	0.14	6,070	3,630	EGPD350E□□432ML35H
	4,700	18 × 30	0.022	0.16	5,600	3,470	EGPD350E□□472MM30H
	5,600	16 × 40	0.019	0.12	6,810	3,930	EGPD350E□□562ML40H
	6,200	18 × 35	0.019	0.12	6,280	3,750	EGPD350E□□622MM35H
	7,500	18 × 40	0.018	0.10	7,070	4,080	EGPD350E□□752MM40H
50	620	12.5 × 20	0.073	0.88	2,400	1,470	EGPD500E□□621MK20H
	750	14.5 × 20	0.063	0.73	2,760	1,590	EGPD500E□□751MU20H
	820	12.5 × 25	0.058	0.67	3,350	2,260	EGPD500E□□821MK25H
	1,000	16 × 20	0.050	0.55	2,960	1,870	EGPD500E□□102ML20H
	1,100	12.5 × 30	0.048	0.52	4,220	2,520	EGPD500E□□112MK30H
	1,100	14.5 × 25	0.048	0.52	3,750	2,420	EGPD500E□□112MU25H
	1,300	12.5 × 35	0.042	0.44	4,810	2,780	EGPD500E□□132MK35H
	1,300	16 × 25	0.042	0.44	4,040	2,500	EGPD500E□□132ML25H
	1,300	18 × 20	0.042	0.44	3,130	2,110	EGPD500E□□132MM20H
	1,500	14.5 × 30	0.038	0.39	4,590	2,740	EGPD500E□□152MU30H
	1,600	12.5 × 40	0.037	0.36	5,240	3,020	EGPD500E□□162MK40H
	1,600	14.5 × 35	0.035	0.36	5,060	2,920	EGPD500E□□162MU35H
	1,600	16 × 30	0.035	0.36	5,130	2,960	EGPD500E□□162ML30H
	1,800	18 × 25	0.033	0.32	4,230	2,530	EGPD500E□□182MM25H
	2,200	14.5 × 40	0.029	0.27	5,630	3,250	EGPD500E□□222MU40H
	2,200	16 × 35	0.029	0.27	5,480	3,160	EGPD500E□□222ML35H
	2,400	18 × 30	0.028	0.25	5,240	3,020	EGPD500E□□242MM30H
	2,700	16 × 40	0.025	0.22	5,930	3,420	EGPD500E□□272ML40H
	3,000	18 × 35	0.024	0.20	5,870	3,390	EGPD500E□□302MM35H
	3,600	18 × 40	0.023	0.16	6,420	3,700	EGPD500E□□362MM40H
63	390	12.5 × 20	0.072	0.56	1,640	1,420	EGPD630E□□391MK20H
	560	12.5 × 25	0.052	0.39	2,520	2,050	EGPD630E□□561MK25H
	560	14.5 × 20	0.061	0.40	1,790	1,550	EGPD630E□□561MU20H
	680	16 × 20	0.053	0.34	2,140	1,910	EGPD630E□□681ML20H
	750	12.5 × 30	0.042	0.30	3,110	2,630	EGPD630E□□751MK30H
	750	14.5 × 25	0.047	0.30	2,650	2,160	EGPD630E□□751MU25H
	910	12.5 × 35	0.035	0.25	3,760	2,970	EGPD630E□□911MK35H
	910	18 × 20	0.044	0.26	2,350	2,100	EGPD630E□□911MM20H

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

◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	ESR (Ω max./100kHz)		Rated ripple current (mA rms/100kHz)		Part No.
			20°C	-40°C	125°C	135°C	
63	1,000	14.5 × 30	0.037	0.23	3,360	2,840	EGPD630E□□102MU30H
	1,000	16 × 25	0.038	0.23	2,940	2,680	EGPD630E□□102ML25H
	1,100	12.5 × 40	0.031	0.22	4,610	3,260	EGPD630E□□112MK40H
	1,200	14.5 × 35	0.033	0.20	3,860	3,050	EGPD630E□□122MU35H
	1,200	16 × 30	0.034	0.20	3,860	3,050	EGPD630E□□122ML30H
	1,300	18 × 25	0.033	0.19	3,080	2,810	EGPD630E□□132MM25H
	1,500	14.5 × 40	0.028	0.16	4,930	3,490	EGPD630E□□152MU40H
	1,600	16 × 35	0.027	0.15	4,590	3,420	EGPD630E□□162ML35H
	1,600	18 × 30	0.028	0.15	4,080	3,220	EGPD630E□□162MM30H
	1,800	16 × 40	0.025	0.14	5,190	3,670	EGPD630E□□182ML40H
80	2,200	18 × 35	0.022	0.12	5,220	3,690	EGPD630E□□222MM35H
	2,400	18 × 40	0.021	0.11	5,660	3,820	EGPD630E□□242MM40H
	270	12.5 × 20	0.072	0.56	1,640	1,420	EGPD800E□□271MK20H
	360	14.5 × 20	0.061	0.40	1,790	1,550	EGPD800E□□361MU20H
	390	12.5 × 25	0.052	0.39	2,520	2,050	EGPD800E□□391MK25H
	470	16 × 20	0.053	0.34	2,140	1,910	EGPD800E□□471ML20H
	510	12.5 × 30	0.042	0.30	3,110	2,630	EGPD800E□□511MK30H
	510	14.5 × 25	0.047	0.30	2,650	2,160	EGPD800E□□511MU25H
	620	12.5 × 35	0.035	0.25	3,760	2,970	EGPD800E□□621MK35H
	620	18 × 20	0.044	0.26	2,350	2,100	EGPD800E□□621MM20H
	680	14.5 × 30	0.037	0.23	3,360	2,840	EGPD800E□□681MU30H
	680	16 × 25	0.038	0.23	2,940	2,680	EGPD800E□□681ML25H
	750	12.5 × 40	0.031	0.22	4,610	3,260	EGPD800E□□751MK40H
	750	14.5 × 35	0.033	0.20	3,860	3,050	EGPD800E□□751MU35H
	750	16 × 30	0.034	0.20	3,860	3,050	EGPD800E□□751ML30H
	820	18 × 25	0.033	0.19	3,080	2,810	EGPD800E□□821MM25H
	1,000	14.5 × 40	0.028	0.16	4,930	3,490	EGPD800E□□102MU40H
	1,000	16 × 35	0.027	0.15	4,590	3,420	EGPD800E□□102ML35H
	1,100	18 × 30	0.028	0.15	4,080	3,220	EGPD800E□□112MM30H
	1,300	16 × 40	0.025	0.14	5,190	3,670	EGPD800E□□132ML40H
	1,300	18 × 35	0.022	0.12	5,220	3,690	EGPD800E□□132MM35H
100	1,600	18 × 40	0.021	0.11	5,660	3,820	EGPD800E□□162MM40H
	160	12.5 × 20	0.090	0.75	1,580	1,410	EGPD101E□□161MK20H
	200	14.5 × 20	0.083	0.61	1,660	1,480	EGPD101E□□201MU20H
	220	12.5 × 25	0.068	0.55	2,140	1,960	EGPD101E□□221MK25H
	270	16 × 20	0.067	0.47	2,050	1,670	EGPD101E□□271ML20H
	300	12.5 × 30	0.052	0.41	2,950	2,330	EGPD101E□□301MK30H
	300	14.5 × 25	0.058	0.42	2,300	2,100	EGPD101E□□301MU25H
	360	12.5 × 35	0.045	0.35	3,530	2,630	EGPD101E□□361MK35H
	360	18 × 20	0.061	0.35	2,270	1,860	EGPD101E□□361MM20H
	390	14.5 × 30	0.047	0.33	3,120	2,460	EGPD101E□□391MU30H
	390	16 × 25	0.048	0.33	2,790	2,360	EGPD101E□□391ML25H
	430	12.5 × 40	0.038	0.29	4,140	2,920	EGPD101E□□431MK40H
	430	14.5 × 35	0.043	0.30	3,510	2,620	EGPD101E□□431MU35H
	470	16 × 30	0.041	0.27	3,440	2,720	EGPD101E□□471ML30H
	510	18 × 25	0.045	0.25	2,920	2,470	EGPD101E□□511MM25H
	560	14.5 × 40	0.034	0.23	4,330	3,060	EGPD101E□□561MU40H
	560	16 × 35	0.036	0.23	4,190	2,960	EGPD101E□□561ML35H
	620	18 × 30	0.037	0.20	3,920	2,920	EGPD101E□□621MM30H
	750	16 × 40	0.028	0.18	5,020	3,380	EGPD101E□□751ML40H
	820	18 × 35	0.030	0.16	4,710	3,330	EGPD101E□□821MM35H
	910	18 × 40	0.026	0.14	5,280	3,560	EGPD101E□□911MM40H

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

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance(μF)	Frequency(Hz)			
	120	1k	10k	100k
160 to 200	0.40	0.75	0.90	1.00
220 to 620	0.50	0.85	0.94	1.00
680 to 2,000	0.60	0.87	0.95	1.00
2,200 to 4,300	0.75	0.90	0.95	1.00
4,700 to 12,000	0.85	0.95	0.98	1.00

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.

Please contact us for lifetime estimation.