

GPH Series, Radial Lead, 125°C Low ESR

- Ultra Low ESR & high ripple current capability
- Endurance: 2000 hours at 125°C
- Compliant to the RoHS directive
- Suitable for industrial power supply, medical equipment & automotive application.

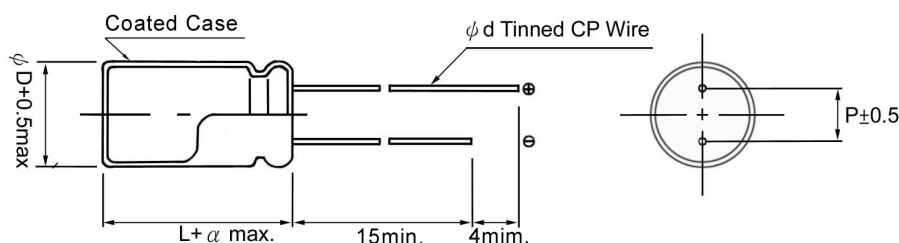


• Specifications

Item	Performance Characteristics	
Operating Temperature range	-55 + 125°C	
Rated Voltage Range	16V ~ 63V	
Capacitance Tolerance	± 20% (at 120 Hz / 20°C)	
Surge Voltage	Rated Voltage x 1.15	
Leakage Current	Within the specified value as in standard rating	
Dissipation Factor (tan δ)	Less than or equal to the specified value at 20°C, 120 Hz	
Temperature Characteristics (Impedance ratio at 100 KHz)	Z (-25°C) / Z (+20°C)	≤ 1.15
	Z (-55°C) / Z (+20°C)	≤ 1.25
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 16V~25V 2,000 hours, ≥ 35V 1,500 hours at 125°C..	
	Capacitance change	≤ ± 30% of the initial value
	D. F. (Tan δ)	≤ 300% of initial specified value
	ESR	≤ 300% of initial specified value
	Leakage current	Initial specified value or less
Bias Humidity Test	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them at 60°C, 90 to 95% RH for 1,000 hours.	
	Capacitance change	≤ ± 20% of the initial value
	D. F. (Tan δ)	≤ 150% of initial specified value
	ESR	≤ 150% of initial specified value
	Leakage current	Initial specified value or less
Surge Voltage Test	The capacitors shall be subjected to 1,000 cycles each consisting of charge with the surge voltage specified at 125°C for 30 seconds through a protective resistor (R=1KΩ) and discharge for 5 minutes 30 seconds.	
	Capacitance change	≤ ± 20% of the initial value
	D. F. (Tan δ)	≤ 150% of initial specified value
	ESR	≤ 150% of initial specified value
	Leakage current	Initial specified value or less
Failure Rate	0.5% per 1,000 hours maximum (Confidence level 60% at 125°C)	

* In case of any doubt arises, measure the leakage current after voltage applied for 120 minutes at 125°C.

• Dimension



(mm)

φD +0.5max	8	10
φd ± 0.05	0.6	0.6
P	3.5	5
α (max)	1.5	1.5

• Standard Products Table

Rated voltage (V.DC)	Rated Capacitance (μ F)	Case Size D x L (mm)	tan δ	Leakage Current (μ A)	ESR (m Ω max./ 20°C 100KHz to 300KHz)	Rated ripple current (mArms, 100 KHz)		Part Number
						$T_x \leq 105^\circ\text{C}$	$105^\circ\text{C} < T_x \leq 125^\circ\text{C}$	
16V	470	8 x 12	0.12	1,504	11	5,100	2,040	GPH470M016-0812B
	820	8 x 12	0.12	2,624	11	5,100	2,040	GPH820M016-0812B
	1,200	10 x 12	0.12	3,840	11	6,100	2,240	GPH122M016-1012B
	1,500	10 x 12	0.12	4,800	11	6,100	2,240	GPH152M016-1012B
25V	220	8 x 12	0.12	1,350	16	4,750	1,900	GPH220M025-0812B
	330	8 x 12	0.12	1,350	25	2,630	1,050	GPH330M025-0812B
	470	8 x 12	0.12	2,350	16	4,750	1,900	GPH470M025-0812B
	470	10 x 12	0.12	2,350	14	5,050	2,020	GPH470M025-1012B
	680	10 x 12	0.12	3,400	14	5,050	2,020	GPH680M025-1012B
35V	100	8 x 12	0.12	700	23	3,400	1,360	GPH100M035-0812B
	150	8 x 12	0.12	1,050	23	3,400	1,360	GPH150M035-0812B
	220	8 x 12	0.12	1,540	23	3,400	1,360	GPH220M035-0812B
	220	10 x 12	0.12	1,540	21	3,900	1,560	GPH220M035-1012B
	330	10 x 12	0.12	2,310	21	3,900	1,560	GPH330M035-1012B
50V	47	8 x 12	0.12	470	27	2,700	1,080	GPH047M050-0812B
	82	8 x 12	0.12	820	27	2,700	1,080	GPH082M050-0812B
	100	8 x 12	0.12	1,000	27	2,700	1,080	GPH100M050-0812B
	120	10 x 12	0.12	1,200	25	3,100	1,240	GPH120M050-1012B
	220	10 x 12	0.12	2,200	25	3,100	1,240	GPH220M050-1012B
63V	47	8 x 12	0.12	592	27	2,700	1,080	GPH047M063-0812B
	100	8 x 12	0.12	1260	27	2,700	1,080	GPH100M063-0812B
	82	10 x 12	0.12	1,033	25	2,900	1,160	GPH082M063-1012B
	150	10 x 12	0.12	1,890	25	2,900	1,160	GPH150M063-1012B

• Frequency coefficient of allowable ripple current

Frequency	$120\text{ Hz} \leq f < 1\text{ KHz}$	$1\text{ KHz} \leq f < 10\text{ KHz}$	$10\text{ KHz} \leq f < 100\text{ KHz}$	$100\text{ KHz} \leq f \leq 300\text{ KHz}$
Coefficient	0.05	0.30	0.70	1.00