STONE 早安股份有限公司
YELLOW STONE CORP.

# GPL series

## Features

- ◆ Low ESR & high ripple current capability
- ◆ Endurance: 2,000 hours at 125°C
- ◆ Compliant to the RoHS directive
- ◆ Suitable for LED Lighting, telecommunication & power unit applications.

## Specifications

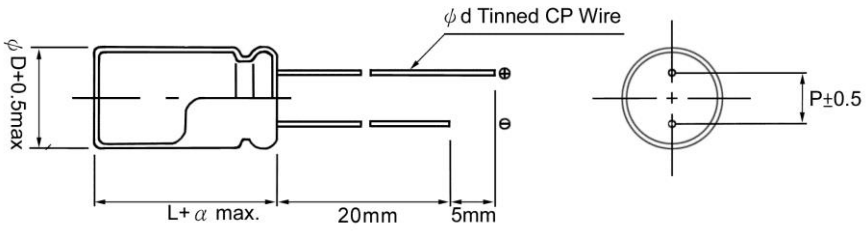
| Item | Performance Characteristics | |
|---|---|---|
| Operating Temperature range | -55 + 125°C | |
| Rated Voltage Range | 16V ~ 160V | |
| Capacitance Tolerance | ± 20% (at 120 Hz / 20°C) | |
| Surge Voltage | Rated Voltage x 1.15 | |
| Leakage Current | Within the specified value as in standard 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 (-55°C) / Z (+20°C) | ≤ 1.25 |
| | Z (-125°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 to DC voltage 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 105°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.

## Frequency Coefficient for Ripple Current

| Frequency | 120 Hz ≤ f <1 KHz | 1 KHz ≤ f <10 KHz | 10 KHz ≤ f <100 KHz | 100 KHz ≤ f ≤ 300 KHz |
|---|---|---|---|---|
| Coefficient | 0.05 | 0.30 | 0.70 | 1.00 |

## Diagram of Dimensions:(unit:mm)




(mm)

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

# GPL series

## Dimensions & Characteristics

| Rated voltage (V.DC) | Rated Capacitance (μF) | Case Size D x L (mm) | tan δ | Leakage Current (μA) | ESR (mΩ max./ 20°C 100KHz to 300KHz) | Rated ripple current (mArms,100 KHz) | | Part Number |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Tx ≤ 105°C | 105°C＜Tx≤125°C | |
| 16V | 330 | 8 x 8 | 0.12 | 1,056 | 15 | 4,300 | 1,720 | GPL-330M16V0808 |
| | 470 | 8 x 8 | 0.12 | 1,504 | 15 | 4,300 | 1,720 | GPL-470M16V0808 |
| | 470 | 8 x 12 | 0.12 | 1,504 | 13 | 4,650 | 1,860 | GPL-470M16V0812 |
| | 820 | 8 x 12 | 0.12 | 2,624 | 13 | 4,650 | 1,860 | GPL-820M16V0812 |
| | 820 | 10 x 12 | 0.12 | 2,624 | 12 | 5,600 | 2,240 | GPL-820M16V1012 |
| | 1,000 | 10 x 12 | 0.12 | 3,200 | 12 | 5,600 | 2,240 | GPL-1000M16V1012 |
| | 1,200 | 10 x 12 | 0.12 | 3,840 | 12 | 5,600 | 2,240 | GPL-1200M16V1012 |
| | 1,500 | 10 x 12 | 0.12 | 4,800 | 12 | 5,600 | 2,240 | GPL-1500M16V1012 |
| 25V | 100 | 8 x 8 | 0.12 | 500 | 24 | 2,900 | 1,160 | GPL-100M25V0808 |
| | 150 | 8 x 8 | 0.12 | 750 | 24 | 2,900 | 1,160 | GPL-150M25V0808 |
| | 220 | 8 x 12 | 0.12 | 1,100 | 18 | 4,250 | 1,700 | GPL-220M25V0812 |
| | 330 | 8 x 12 | 0.12 | 1,650 | 18 | 4,250 | 1,700 | GPL-330M25V0812 |
| | 470 | 8 x 12 | 0.12 | 2,350 | 18 | 4,250 | 1,700 | GPL-470M25V0812 |
| | 470 | 10 x 12 | 0.12 | 2,350 | 16 | 4,700 | 1,880 | GPL-470M25V1012 |
| | 560 | 10 x 12 | 0.12 | 2,800 | 16 | 4,700 | 1,880 | GPL-560M25V1012 |
| | 680 | 10 x 12 | 0.12 | 3,400 | 16 | 4,700 | 1,880 | GPL-680M25V1012 |
| 35V | 47 | 8 x 8 | 0.12 | 329 | 30 | 2,600 | 1,040 | GPL-47M35V0808 |
| | 68 | 8 x 8 | 0.12 | 476 | 30 | 2,600 | 1,040 | GPL-68M35V0808 |
| | 100 | 8 x 12 | 0.12 | 700 | 26 | 2,950 | 1,180 | GPL-100M35V0812 |
| | 150 | 8 x 12 | 0.12 | 1,050 | 26 | 2,950 | 1,180 | GPL-150M35V0812 |
| | 180 | 8 x 12 | 0.12 | 1,260 | 26 | 2,950 | 1,180 | GPL-180M35V0812 |
| | 220 | 8 x 12 | 0.12 | 1,540 | 26 | 2,950 | 1,180 | GPL-220M35V0812 |
| | 220 | 10 x 12 | 0.12 | 1,540 | 24 | 3,400 | 1,360 | GPL-220M35V1012 |
| | 330 | 10 x 12 | 0.12 | 2,310 | 24 | 3,400 | 1,360 | GPL-330M35V1012 |
| | 390 | 10 x 12 | 0.12 | 2,730 | 24 | 3,400 | 1,360 | GPL-390M35V1012 |
| 50V | 47 | 8 x 12 | 0.12 | 470 | 32 | 2,250 | 900 | GPL-47M50V0812 |
| | 68 | 8 x 12 | 0.12 | 680 | 32 | 2,250 | 900 | GPL-68M50V0812 |
| | 82 | 8 x 12 | 0.12 | 820 | 32 | 2,250 | 900 | GPL-82M50V0812 |
| | 120 | 8 x 12 | 0.12 | 1,200 | 32 | 2,250 | 900 | GPL-120M50V0812 |
| | 120 | 10 x 12 | 0.12 | 1,200 | 28 | 2,620 | 1,040 | GPL-120M50V1012 |
| | 180 | 10 x 12 | 0.12 | 1,800 | 28 | 2,620 | 1,040 | GPL-180M50V1012 |
| | 220 | 10 x 12 | 0.12 | 2,200 | 28 | 2,620 | 1,040 | GPL-220M50V1012 |
| 63V | 82 | 8 x 12 | 0.12 | 1,033 | 32 | 2,100 | 840 | GPL-82M63V0812 |
| | 100 | 8 x 12 | 0.12 | 1,260 | 32 | 2,100 | 840 | GPL-100M63V0812 |
| | 150 | 10 x 12 | 0.12 | 1,890 | 28 | 2,550 | 1,020 | GPL-150M63V1012 |
| | 180 | 10 x 12 | 0.12 | 2,268 | 28 | 2,550 | 1,020 | GPL-180M63V1012 |
| 100V | 15 | 8 x 12 | 0.12 | 300 | 40 | 1,850 | 740 | GPL-15M100V0812 |
| | 22 | 8 x 12 | 0.12 | 440 | 40 | 1,850 | 740 | GPL-22M100V0812 |
| | 33 | 10 x 12 | 0.12 | 660 | 38 | 2,100 | 840 | GPL-33M100V1012 |
| | 47 | 10 x 12 | 0.12 | 940 | 38 | 2,100 | 840 | GPL-47M100V1012 |
| 160V | 4.7 | 8 x 12 | 0.12 | 150 | 130 | 720 | 280 | GPL-4.7M160V0812 |
| | 6.8 | 8 x 12 | 0.12 | 217 | 130 | 720 | 280 | GPL-6.8M160V0812 |
| | 12 | 10 x 12 | 0.12 | 384 | 130 | 960 | 380 | GPL-12M160V1012 |