

GPM Series, 105°C Long Life



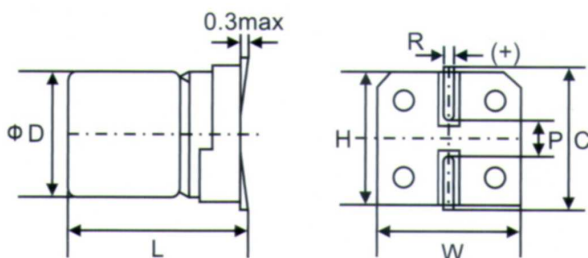
- Low ESR & high ripple current capability
- Endurance: 5,000 hours at 105°C
- Compliant to the RoHS directive

• Specifications

Item	Performance Characteristics	
Operating Temperature range	-55 + 105°C	
Rated Voltage Range	2.5V ~ 16V	
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 5,000 hours, at 105°C.	
	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
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 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 105°C)	

* In case of any doubt arises, measure the leakage current after voltage applied for 120 minutes at 105°C.

• Dimension



D ϕ ±0.5	L ±0.4	W ±0.2	H ±0.2	C ±0.2	R	P ±0.2
6.3	5.7	6.6	6.6	7.3	0.5-0.8	2.1
8	6.9	8.3	8.3	9	0.6-0.8	3.2
8	9.7	8.3	8.3	9	0.8-1.1	3.2

• **Standard Products Table**

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/105°C,100 KHz)	Part Number
2.5V	390	6.3x5.7	0.10	300	15	3,160	GPM390M2.5-0605TR
	560	6.3x5.7	0.10	300	16	3,160	GPM560M2.5-0605TR
	680	8x6.9	0.10	500	20	3,370	GPM680M2.5-0806TR
	820	8x9.7	0.10	500	10	4,880	GPM820M2.5-0809TR
6.3V	220	6.3x5.7	0.10	300	15	3,160	GPM220M6.3-0605TR
	330	6.3x5.7	0.10	300	17	3,160	GPM330M6.3-0605TR
	390	8x6.9	0.10	491	22	3,220	GPM390M6.3-0806TR
	560	8x9.7	0.10	800	10	5,000	GPM560M6.3-0809TR
16V	82	6.3x5.7	0.10	300	25	2,490	GPM082M016-0605TR
	120	8x6.9	0.10	500	27	2,900	GPM120M016-0806TR
	180	8x9.7	0.10	600	16	3,890	GPM180M016-0809TR

• **Frequency coefficient of allowable 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