GYA

Chip Type, 125°C High Reliability

For SMD | HR High Ripple Current | Z Low Impedance | L Long Life | Anti-Solvent Feature

Expanded

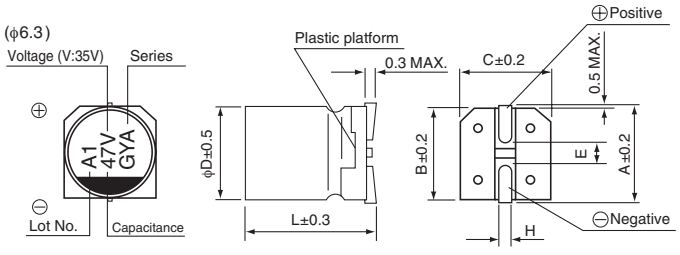
- High Reliability, Low ESR,High ripple current.
- Long life of 4000 hours at 125°C.
- Adapted to the RoHS directive (2011/65/EU,(EU)2015/863).
- AEC-Q200 compliant. Please contact us for details.

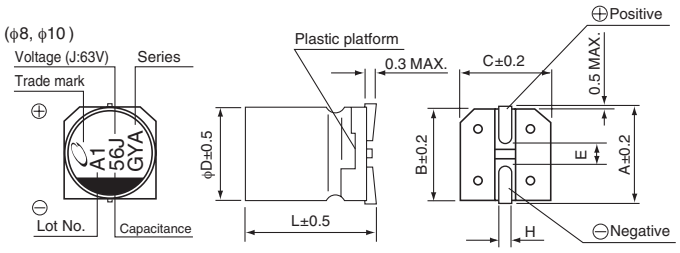
GYC ← High Temperature — GYA

■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +125°C
Rated Voltage Range	16 to 63V
Rated Capacitance Range	10 to 470μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Tangent of loss angle (tan δ)	Rated voltage (V): 16 / 25 / 35 / 50 / 63 tan δ (MAX.): 0.16 / 0.14 / 0.12 / 0.10 / 0.08 120Hz 20°C
ESR	Less than or equal to the specified value at 100kHz, 20°C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV(μA).
Temperature Characteristics (Max.Impedance Ratio)	Z−25°C / Z+20°C ≦ 2 Z−55°C / Z+20°C ≦ 2.5 (100kHz)
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 4000 hours (2000 hours for φ6.3 rated at 16V) at 125°C, the peak voltage shall not exceed the rated voltage. Capacitance change: Within ± 30% of initial capacitance value tan δ: 200% or less of the initial specified value ESR: 200% or less of the initial specified value Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 125°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Damp Heat (Steady State)	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 85°C, 85% RH. Capacitance change: Within±30% of the initial capacitance value tan δ: 200% or less of the initial specified value Leakage current: Less than or equal to the initial specified value
Resistance to Soldering Heat	The capacitors are kept on a hot plate for 30 seconds, which is maintained at 250°C. The capacitors shall meet the characteristic requirements listed at right when they are removed from the plate and restored to 20°C. Capacitance change: Within±10% of the initial capacitance value tan δ: Less than or equal to the initial specified value Leakage current: Less than or equal to the initial specified value
Marking	Black print on the case top.

■Dimensions





Type numbering system (Example : 35V 47μF)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
G	Y	A	1	V	4	7	0	M	C	Q	1	G	S

- Taping code
- Size code
- Configuration
- Capacitance tolerance (±20%)
- Rated capacitance (47μF)
- Rated voltage (35V)
- Series name
- Type

(mm)

φD×L	φ6.3×5.8	φ6.3×7.7	φ8×10	φ10×10
A	7.3	7.3	9.0	11.0
B	6.6	6.6	8.3	10.3
C	6.6	6.6	8.3	10.3
E	2.2	2.2	3.1	4.5
L	5.8	7.7	10.3	10.3
H	0.5 to 0.8	0.5 to 0.8	0.8 to 1.1	0.8 to 1.1

Voltage

V	16	25	35	50	63
Code	C	E	V	H	J

※φ6.3×7.7L, φ8×10L, φ10×10L : The vibration structure-resistant product is also available upon request, please ask for details.

●Dimension table in next page.

GYA

■Dimensions

Cap.(μF) \ V (Code) / Code		16			25			35			50			63		
		1C			1E			1V			1H			1J		
10	100													6.3 × 5.8	120	700
22	220										6.3 × 5.8	80	750	6.3 × 7.7	80	900
33	330										6.3 × 7.7	40	1100	8 × 10	40	1100
47	470							6.3 × 5.8	60	900						
56	560				6.3 × 5.8	50	900							10 × 10	30	1400
68	680							6.3 × 7.7	35	1400	8 × 10	30	1250			
82	820	6.3 × 5.8	50	1000												
100	101				6.3 × 7.7	30	1400				10 × 10	28	1600			
150	151	6.3 × 7.7	30	1500				8 × 10	27	1600						
220	221				8 × 10	27	1600									
270	271	8 × 10	25	1700				10 × 10	20	2000						
330	331				10 × 10	20	2000							φD×L	ESR mΩ	Ripple mArms
470	471	10 × 10	20	2100												

ESR at 20°C 100kHz
Rated ripple Current at 125°C 100kHz

● Frequency coefficient of rated ripple current

Frequency	120Hz	1kHz	10kHz	100kHz or more
Coefficient	0.15	0.40	0.75	1.00

- Taping specifications are given in page 23.
- Recommended land size, soldering by reflow are given in page 18,19.
- Please refer to page 3 for the minimum order quantity.

GYB

Chip Type, 105°C High Reliability

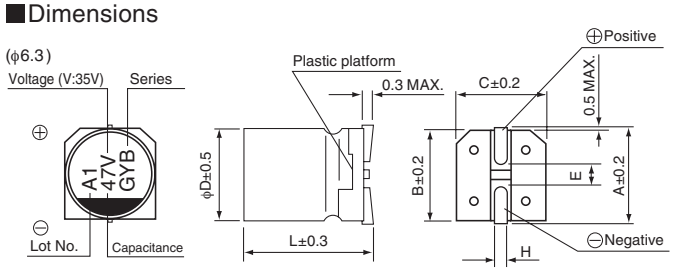
For SMD | High Ripple Current | Low Impedance | Long Life | Anti-Solvent Feature

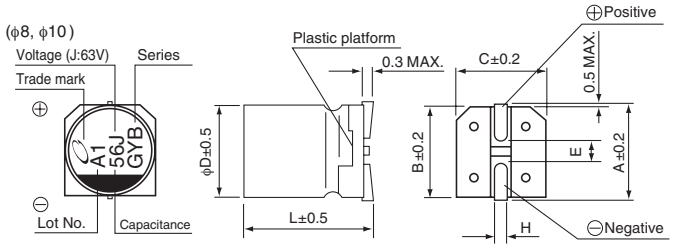
- High Reliability, Low ESR,High ripple current.
- Long life of 10000 hours at 105°C.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).
- AEC-Q200 compliant. Please contact us for details.

■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105°C
Rated Voltage Range	25 to 63V
Rated Capacitance Range	10 to 330μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Tangent of loss angle (tan δ)	Rated voltage (V): 25 / 35 / 50 / 63 — tan δ (MAX.): 0.14 / 0.12 / 0.10 / 0.08 — 120Hz 20°C
ESR	Less than or equal to the specified value at 100kHz, 20°C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV(μA).
Temperature Characteristics (Max.Impedance Ratio)	Z−25°C / Z+20°C ≦ 2 Z−55°C / Z+20°C ≦ 2.5 (100kHz)
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 10000 hours at 105°C, the peak voltage shall not exceed the rated voltage. Capacitance change: Within ± 30% of initial capacitance value tan δ: 200% or less of the initial specified value ESR: 200% or less of the initial specified value Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Damp Heat (Steady State)	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 85°C, 85% RH. Capacitance change: Within±30% of the initial capacitance value tan δ: 200% or less of the initial specified value Leakage current: Less than or equal to the initial specified value
Resistance to Soldering Heat	The capacitors are kept on a hot plate for 30 seconds, which is maintained at 250°C. The capacitors shall meet the characteristic requirements listed at right when they are removed from the plate and restored to 20°C. Capacitance change: Within±10% of the initial capacitance value tan δ: Less than or equal to the initial specified value Leakage current: Less than or equal to the initial specified value
Marking	Black print on the case top.

■Dimensions





Type numbering system (Example : 35V 47μF)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
G	Y	B	1	V	4	7	0	M	C	Q	1	G	S

- Taping code
- Size code
- Configuration
- Capacitance tolerance (±20%)
- Rated capacitance (47μF)
- Rated voltage (35V)
- Series name
- Type

(mm)

φD×L	φ6.3×5.8	φ6.3×7.7	φ8×10	φ10×10
A	7.3	7.3	9.0	11.0
B	6.6	6.6	8.3	10.3
C	6.6	6.6	8.3	10.3
E	2.2	2.2	3.1	4.5
L	5.8	7.7	10.3	10.3
H	0.5 to 0.8	0.5 to 0.8	0.8 to 1.1	0.8 to 1.1

Voltage

V	25	35	50	63
Code	E	V	H	J

※ φ6.3×7.7L, φ8×10L, φ10×10L :
The vibration structure-resistant product is also available upon request, please ask for details.

●Dimension table in next page.

GYB

■Dimensions

V (Code) / Code / Cap.(μF)		25			35			50			63		
		1E			1V			1H			1J		
10	100										6.3 × 5.8	120	1000
22	220							6.3 × 5.8	80	1100	6.3 × 7.7	80	1500
33	330							6.3 × 7.7	40	1600	8 × 10	40	1600
47	470				6.3 × 5.8	60	1300						
56	560	6.3 × 5.8	50	1300							10 × 10	30	1800
68	680				6.3 × 7.7	35	2000	8 × 10	30	1800			
100	101	6.3 × 7.7	30	2000				10 × 10	28	2000			
150	151				8 × 10	27	2300						
220	221	8 ×10	27	2300									
270	271				10 × 10	20	2500				φD×L	ESR mΩ	Ripple mArms
330	331	10 ×10	20	2500									

ESR at 20°C 100kHz
Rated ripple Current at 105°C 100kHz

● Frequency coefficient of rated ripple current

Frequency	120Hz	1kHz	10kHz	100kHz or more
Coefficient	0.15	0.40	0.75	1.00

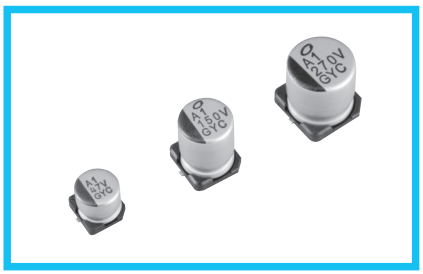
- Taping specifications are given in page 23.
- Recommended land size, soldering by reflow are given in page 18,19.
- Please refer to page 3 for the minimum order quantity.

GYC

Chip Type, 135°C High Reliability

For SMD | HR High Ripple Current | Z Low Impedance | L Long Life | Anti-Solvent Feature

NEW



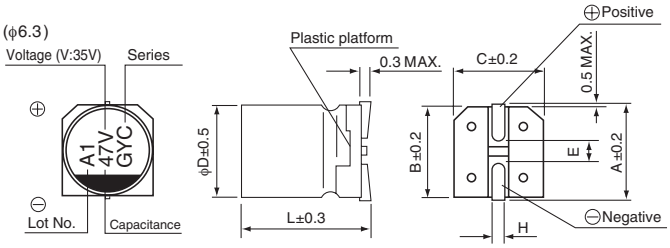
- High Reliability, Low ESR,High ripple current.
- Long life of 2000 to 4000 hours at 135°C.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).
- AEC-Q200 compliant. Please contact us for details.

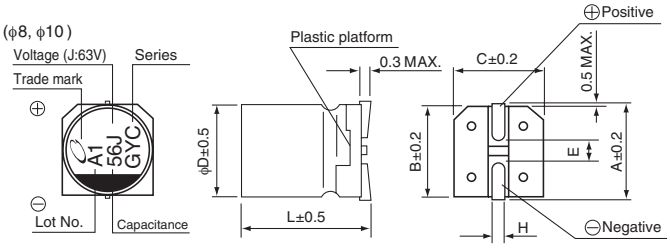
GYC ← High Temperature → GYA

■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +135°C
Rated Voltage Range	25 to 63V
Rated Capacitance Range	10 to 330μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Tangent of loss angle (tan δ)	Rated voltage (V): 25 / 35 / 50 / 63 tan δ (MAX.): 0.14 / 0.12 / 0.10 / 0.08 120Hz 20°C
ESR	Less than or equal to the specified value at 100kHz, 20°C
Leakage Current	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV(μA).
Temperature Characteristics (Max.Impedance Ratio)	Z−25°C / Z+20°C ≦ 2 Z−55°C / Z+20°C ≦ 2.5 (100kHz)
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 4000 hours (2000 hours for φD = 6.3) at 125°C or 135°C, the peak voltage shall not exceed the rated voltage. Capacitance change: Within ± 30% of initial capacitance value tan δ: 200% or less of the initial specified value ESR: 200% or less of the initial specified value Leakage current: Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 135°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Damp Heat (Steady State)	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours (1000 hours for φD = 6.3) at 85°C, 85% RH. Capacitance change: Within±30% of the initial capacitance value tan δ: 200% or less of the initial specified value Leakage current: Less than or equal to the initial specified value
Resistance to Soldering Heat	The capacitors are kept on a hot plate for 30 seconds, which is maintained at 250°C. The capacitors shall meet the characteristic requirements listed at right when they are removed from the plate and restored to 20°C. Capacitance change: Within±10% of the initial capacitance value tan δ: Less than or equal to the initial specified value Leakage current: Less than or equal to the initial specified value
Marking	Black print on the case top.

■Dimensions





Type numbering system (Example : 35V 47μF)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
G	Y	C	1	V	4	7	0	M	C	Q	1	G	S

- 1 2 3: Type
- 4: Series name
- 5: Rated voltage (35V)
- 6 7 8: Rated capacitance (47μF)
- 9: Capacitance tolerance (±20%)
- 10 11: Configuration
- 12 13: Size code
- 14: Taping code

(mm)

φD×L	φ6.3×5.8	φ6.3×7.7	φ8×10	φ10×10
A	7.3	7.3	9.0	11.0
B	6.6	6.6	8.3	10.3
C	6.6	6.6	8.3	10.3
E	2.2	2.2	3.1	4.5
L	5.8	7.7	10.3	10.3
H	0.5 to 0.8	0.5 to 0.8	0.8 to 1.1	0.8 to 1.1

Voltage

V	25	35	50	63
Code	E	V	H	J

※ φ6.3×7.7L, φ8×10L, φ10×10L :
The vibration structure-resistant product is also available upon request, please ask for details.

●Dimension table in next page.

GYC

■Dimensions

V (Code) / Code / Cap.(μF)		25				35				50			
		1E				1V				1H			
10	100												
22	220									6.3 × 5.8	80	1100	750
33	330									6.3 × 7.7	45	1600	1100
47	470					6.3 × 5.8	60	1400	900				
56	560	6.3 × 5.8	50	1400	900								
68	680					6.3 × 7.7	40	1900	1400	8 × 10	30	2200	1250
100	101	6.3 × 7.7	35	1900	1400					10 × 10	28	2600	1600
150	151					8 × 10	27	2900	1600				
220	221	8 × 10	27	2900	1600								
270	271					10 × 10	20	3300	2000	φD×L	ESR mΩ	Rated ripple Current (mArms)	
330	331	10 × 10	20	3300	2000							125℃	135℃

V (Code) / Code / Cap.(μF)		63			
		1J			
10	100	6.3 × 5.8	120	1000	700
22	220	6.3 × 7.7	80	1300	900
33	330	8 × 10	40	1900	1100
47	470				
56	560	10 × 10	30	2300	1400
68	680				
		φD×L	ESR mΩ	Rated ripple Current (mArms)	
				125℃	135℃

ESR at 20°C 100kHz
Rated ripple Current at 125°C or 135°C 100kHz

● Frequency coefficient of rated ripple current

Frequency	120Hz	1kHz	10kHz	100kHz or more
Coefficient	0.15	0.40	0.75	1.00

- Taping specifications are given in page 23.
- Recommended land size, soldering by reflow are given in page 18,19.
- Please refer to page 3 for the minimum order quantity.