VGB Series

Features

- 4 ϕ ~ 6.3 ϕ, 105℃, 2,000 hours assured
- Vertical chip type miniaturized
- Bi-polarized capacitors for 6 mm high capacitors
- Designed for surface mounting on high density PC board
- RoHS compliance

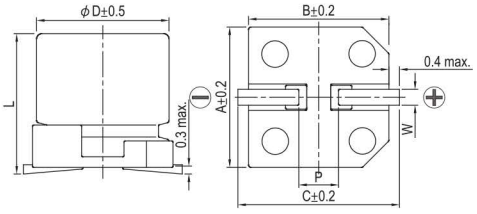
AEC-Q200 Qualified Parts Available: Use “LS” or “KS” Suffix

Marking color: Black

Specifications

Items	Performance
Category Temperature Range	-55℃ ~ +105℃
Capacitance Tolerance	±20% (at 120 Hz, 20℃)
Leakage Current (at 20℃)	I = 0.05CV or 10 (μA) whichever is greater (after 2 minutes) Where, C = rated capacitance in μF, V = rated DC working voltage in V
Tanδ (at 120 Hz, 20℃)	Rated Voltage: 6.3 / 10 / 16 / 25 / 35 / 50 Tanδ (max): 0.24 / 0.20 / 0.17 / 0.17 / 0.15 / 0.15
Low Temperature Characteristics (at 120 Hz)	Impedance ratio shall not exceed the values given in the table below. Rated Voltage: 6.3 / 10 / 16 / 25 / 35 / 50 Impedance Ratio Z(-25℃)/Z(+20℃): 4 / 3 / 2 / 2 / 2 / 2 Impedance Ratio Z(-40℃)/Z(+20℃): 8 / 6 / 4 / 4 / 3 / 3
Endurance (with the polarity inverted every 250 hours)	Test Time: 2,000 Hrs Capacitance Change: Within ±30% of initial value Tanδ: Less than 300% of specified value Leakage Current: Within specified value * The above specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage applied for 2,000 hours at 105℃.
Shelf Life Test	Test Time: 1,000 Hrs Capacitance Change: Within ±30% of initial value Tanδ: Less than 300% of specified value Leakage Current: Within specified value * The above specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied.
Ripple Current and Frequency Multipliers	Frequency (Hz): 50 / 120 / 1k / 10k up Multiplier: 0.7 / 1.0 / 1.36 / 1.5

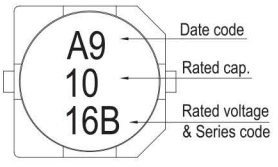
Diagram of dimensions



Lead Spacing and Diameter Unit: mm

ϕD	L	A	B	C	W	P ± 0.2
4	5.7 ± 0.3	4.3	4.3	5.1	0.5 ~ 0.8	1.0
5	5.7 ± 0.3	5.3	5.3	5.9	0.5 ~ 0.8	1.5
6.3	5.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0

Marking



Dimension and Permissible Ripple Current

Dimension: ϕD × L(mm)

Ripple Current: mA/rms at 120 Hz, 105℃

Rated Volt. (Vdc) / Cap. (μF)	Contents	6.3V (0J)		10V (1A)		16V (1C)		25V (1E)		35V (1V)		50V (1H)	
		ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA	ϕD×L	mA
1	010											4×5.7	8.4
2.2	2R2									4×5.7	8.4	5×5.7	13
3.3	3R3							5×5.7	12	5×5.7	16	5×5.7	17
4.7	4R7					4×5.7	12	5×5.7	16	5×5.7	18	6.3×5.7	20
10	100			4×5.7	17	5×5.7	23	6.3×5.7	27	6.3×5.7	29		
22	220	5×5.7	28	6.3×5.7	33	6.3×5.7	37						
33	330	6.3×5.7	37	6.3×5.7	41	6.3×5.7	49						
47	470	6.3×5.7	45										

Part Numbering System

VGB Series	10μF	±20%	16V	Carrier Tape		5 ϕ ×5.7L	Pb-free and PET coating case
VGB	**100**	**M**	**1C**	**TR**	**-**	**0506**	**S**
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Package Type	Terminal Type	Case size	Lead Wire and Coating Type

For automotive application, please replace “S” suffix with an “LS” or “KS” suffix, for non-safety critical and safety critical applications respectively

Note: For more details, please refer to “Part Numbering System (SMD Type)” on page 15.