

Surface Mount Type

Series: **TG** Type: **V**



■ Features

- Endurance: 125 °C 1000 h to 2000 h
- Miniaturization (40 % less than TA Series)
- Low ESR (Low temp)
- Vibration-proof product is available upon request. ($\phi 8$ mm and larger)
- RoHS directive compliant (Parts No $\phi 8$ to $\phi 10$: EEE*, $\phi 12.5$ to $\phi 18$: EEV*)

■ Specifications

| | | | | | | | | | | |
|------------------------------------|--|--|----|----|----|----|----|----|-----|-----------------------------|
| Category Temp. Range | -40 °C to +125 °C | | | | | | | | | |
| Rated W.V. Range | 10 V.DC to 100 V.DC | | | | | | | | | |
| Nominal Cap. Range | 10 μ F to 4700 μ F | | | | | | | | | |
| Capacitance Tolerance | ± 20 % (120 Hz/+20 °C) | | | | | | | | | |
| DC Leakage Current | $I \leq 0.01$ CV After 2 minutes | | | | | | | | | |
| tan δ | Please see the attached standard products list | | | | | | | | | |
| Characteristics at Low Temperature | W.V. (V) | 10 | 16 | 25 | 35 | 50 | 63 | 80 | 100 | (Impedance ratio at 120 Hz) |
| | Z(-25 °C)/Z(+20 °C) | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| | Z(-40 °C)/Z(+20 °C) | 6 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | |
| Endurance | After applying rated working voltage for 1000 hours ($\phi 8 \times 6.2$), 2000 hours ($\phi 8 \times 10.2 \leq$) at +125 °C ± 2 °C and then being stabilized at +20 °C, capacitors shall meet the following limits. | | | | | | | | | |
| | Capacitance change | ± 30 % of initial measured value (code U : ± 35 %) | | | | | | | | |
| | tan δ | ≤ 300 % of initial specified value (code U : ± 350 %) | | | | | | | | |
| | DC leakage current | \leq initial specified value | | | | | | | | |
| Shelf Life | After storage for 1000 hours at +125 °C ± 2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance (With voltage treatment) | | | | | | | | | |
| Resistance to Soldering Heat | After reflow soldering and then being stabilized at +20 °C, capacitors shall meet the following limits. | | | | | | | | | |
| | Capacitance change | ± 10 % of initial measured value | | | | | | | | |
| | tan δ | \leq initial specified value | | | | | | | | |
| | DC leakage current | \leq initial specified value | | | | | | | | |

■ Frequency correction factor for ripple current

| Correction factor | Frequency (Hz) | | | |
|-------------------|----------------|------|------|----------|
| | 120 | 1 k | 10 k | 100 k to |
| | 0.65 | 0.85 | 0.95 | 1.00 |

■ Marking

Example : 10 V 100 μ F, 10 V 1000 μ F
 Marking color : BLACK
 Lead-Free products ($\leq \phi 10$)

Capacitance (μ F)
 Series identification
 Mark for Lead-Free Products Black Dot (Square)
 Rated Voltage Mark
 Negative polarity marking (-)
 Lot number

Lead-Free products ($\geq \phi 12.5$)

Capacitance (μ F)
 Series identification
 Rated Voltage Mark
 Negative polarity marking (-)
 Lot number

Rated Voltage Mark

| | | | |
|---|------|----|-------|
| A | 10 V | H | 50 V |
| C | 16 V | J | 63 V |
| E | 25 V | K | 80 V |
| V | 35 V | 2A | 100 V |

■ Dimensions in mm (not to scale)

(Unit : mm)

0.3 max.
 $\phi D \pm 0.5$
 L
 H
 A ± 0.2
 B ± 0.2
 I
 W
 P
 K
 Pressure Relief ($\phi 10$ and larger)
 () Reference size

| Size code | D | L | A, B | H | I | W | P | K |
|-----------|------|----------------|------|-----------|-----|----------------|-----|-------------------------|
| E | 8.0 | 6.2 ± 0.3 | 8.3 | 9.5 max. | 3.4 | 0.65 ± 0.1 | 2.2 | 0.35 $^{+0.15}_{-0.20}$ |
| F | 8.0 | 10.2 ± 0.3 | 8.3 | 10.0 max. | 3.4 | 0.90 ± 0.2 | 3.1 | 0.70 ± 0.20 |
| G | 10.0 | 10.2 ± 0.3 | 10.3 | 12.0 max. | 3.5 | 0.90 ± 0.2 | 4.6 | 0.70 ± 0.20 |
| H13 | 12.5 | 13.5 ± 0.5 | 13.5 | 15.0 max. | 4.7 | 0.90 ± 0.3 | 4.4 | 0.70 ± 0.30 |
| J16 | 16.0 | 16.5 ± 0.5 | 17.0 | 19.0 max. | 5.5 | 1.20 ± 0.3 | 6.7 | 0.70 ± 0.30 |
| K16 | 18.0 | 16.5 ± 0.5 | 19.0 | 21.0 max. | 6.7 | 1.20 ± 0.3 | 6.7 | 0.70 ± 0.30 |

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use. Should a safety concern arise regarding this product, please be sure to contact us immediately.

■ Standard Products

Endurance : 125 °C 1000 h ($\phi 8 \times 10.2 \leq$: 2000 h)

| W.V. | Cap. (±20 %) | Case size | | | Specification | | | Part No. (RoHS:compliant) | Reflow | Min. Packaging Q'ty |
|------|-----------------|-----------|--------|------------|---|-------------------------------------|-------------------------------|------------------------------|--------|------------------------|
| | | Dia. | Length | *Size Code | Ripple Current (100 kHz) (+125 °C) (mA r.m.s.) | ESR (100 kHz) (+20 °C) (Ω) | tan δ (120 Hz) (+20 °C) | | | Taping (pcs) |
| (V) | (μF) | (mm) | (mm) | | | | | | | |
| 10 | 100 | 8 | 6.2 | E | 100 | 1.00 | 0.30 | EEETG1A101P | (2) | 1000 |
| | 220 | 8 | 6.2 | (E) | 100 | 1.00 | 0.30 | EEETG1A221UP | (2) | 1000 |
| | | 8 | 10.2 | F | 197 | 0.50 | 0.30 | EEETG1A221P | (2) | 500 |
| | 330 | 8 | 10.2 | (F) | 197 | 0.50 | 0.30 | EEETG1A331UP | (2) | 500 |
| | | 10 | 10.2 | G | 270 | 0.30 | 0.30 | EEETG1A331P | (2) | 500 |
| | 470 | 10 | 10.2 | (G) | 270 | 0.30 | 0.30 | EEETG1A471UP | (2) | 500 |
| | 1000 | 12.5 | 13.5 | H13 | 800 | 0.12 | 0.30 | EEVTG1A102Q | (3) | 200 |
| | 1500 | 12.5 | 13.5 | (H13) | 800 | 0.12 | 0.30 | EEVTG1A152UQ | (3) | 200 |
| | 2200 | 16 | 16.5 | J16 | 1100 | 0.08 | 0.32 | EEVTG1A222M | (3) | 125 |
| | 3300 | 16 | 16.5 | (J16) | 1100 | 0.08 | 0.34 | EEVTG1A332UM | (3) | 125 |
| 18 | | 16.5 | K16 | 1300 | 0.075 | 0.34 | EEVTG1A332M | (3) | 125 | |
| 4700 | 18 | 16.5 | K16 | 1300 | 0.075 | 0.36 | EEVTG1A472M | (3) | 125 | |
| 16 | 100 | 8 | 10.2 | F | 197 | 0.50 | 0.23 | EEETG1C101P | (2) | 500 |
| | 220 | 8 | 10.2 | (F) | 197 | 0.50 | 0.23 | EEETG1C221UP | (2) | 500 |
| | | 10 | 10.2 | G | 270 | 0.30 | 0.23 | EEETG1C221P | (2) | 500 |
| | 330 | 10 | 10.2 | (G) | 270 | 0.30 | 0.23 | EEETG1C331UP | (2) | 500 |
| | | 12.5 | 13.5 | H13 | 800 | 0.12 | 0.23 | EEVTG1C331Q | (3) | 200 |
| | 470 | 12.5 | 13.5 | H13 | 800 | 0.12 | 0.23 | EEVTG1C471Q | (3) | 200 |
| | 680 | 12.5 | 13.5 | H13 | 800 | 0.12 | 0.23 | EEVTG1C681Q | (3) | 200 |
| | 1000 | 12.5 | 13.5 | (H13) | 800 | 0.12 | 0.23 | EEVTG1C102UQ | (3) | 200 |
| | | 16 | 16.5 | J16 | 1100 | 0.08 | 0.23 | EEVTG1C102M | (3) | 125 |
| | 2200 | 16 | 16.5 | (J16) | 1100 | 0.08 | 0.25 | EEVTG1C222UM | (3) | 125 |
| 18 | | 16.5 | K16 | 1300 | 0.075 | 0.25 | EEVTG1C222M | (3) | 125 | |
| 3300 | 18 | 16.5 | K16 | 1300 | 0.075 | 0.27 | EEVTG1C332M | (3) | 125 | |
| 25 | 47 | 8 | 6.2 | E | 100 | 1.00 | 0.18 | EEETG1E470P | (2) | 1000 |
| | 100 | 8 | 6.2 | (E) | 100 | 1.00 | 0.18 | EEETG1E101UP | (2) | 1000 |
| | | 8 | 10.2 | F | 197 | 0.50 | 0.18 | EEETG1E101P | (2) | 500 |
| | 220 | 8 | 10.2 | (F) | 197 | 0.50 | 0.18 | EEETG1E221UP | (2) | 500 |
| | | 10 | 10.2 | G | 270 | 0.30 | 0.18 | EEETG1E221P | (2) | 500 |
| | 330 | 10 | 10.2 | (G) | 270 | 0.30 | 0.18 | EEETG1E331UP | (2) | 500 |
| | | 12.5 | 13.5 | H13 | 800 | 0.12 | 0.18 | EEVTG1E331Q | (3) | 200 |
| | 470 | 12.5 | 13.5 | H13 | 800 | 0.12 | 0.18 | EEVTG1E471Q | (3) | 200 |
| | 680 | 12.5 | 13.5 | (H13) | 800 | 0.12 | 0.18 | EEVTG1E681UQ | (3) | 200 |
| | | 16 | 16.5 | J16 | 1100 | 0.08 | 0.18 | EEVTG1E681M | (3) | 125 |
| 1000 | 16 | 16.5 | (J16) | 1100 | 0.08 | 0.18 | EEVTG1E102UM | (3) | 125 | |
| | 18 | 16.5 | K16 | 1300 | 0.075 | 0.18 | EEVTG1E102M | (3) | 125 | |
| 2200 | 18 | 16.5 | K16 | 1300 | 0.075 | 0.20 | EEVTG1E222M | (3) | 125 | |
| 35 | 33 | 8 | 6.2 | E | 100 | 1.00 | 0.16 | EEETG1V330P | (2) | 1000 |
| | 47 | 8 | 6.2 | (E) | 100 | 1.00 | 0.16 | EEETG1V470UP | (2) | 1000 |
| | | 8 | 10.2 | F | 197 | 0.50 | 0.16 | EEETG1V470P | (2) | 500 |
| | 100 | 8 | 10.2 | (F) | 197 | 0.50 | 0.16 | EEETG1V101UP | (2) | 500 |
| | | 10 | 10.2 | G | 270 | 0.30 | 0.16 | EEETG1V101P | (2) | 500 |
| | 220 | 10 | 10.2 | (G) | 270 | 0.30 | 0.16 | EEETG1V221UP | (2) | 500 |
| 330 | 12.5 | 13.5 | H13 | 800 | 0.12 | 0.16 | EEVTG1V331Q | (3) | 200 | |
| 35 | 470 | 12.5 | 13.5 | (H13) | 800 | 0.12 | 0.16 | EEVTG1V471UQ | (3) | 200 |
| | | 16 | 16.5 | J16 | 1100 | 0.08 | 0.16 | EEVTG1V471M | (3) | 125 |
| | 680 | 16 | 16.5 | (J16) | 1100 | 0.08 | 0.16 | EEVTG1V681UM | (3) | 125 |
| | | 18 | 16.5 | K16 | 1300 | 0.075 | 0.16 | EEVTG1V681M | (3) | 125 |
| 1000 | 18 | 16.5 | K16 | 1300 | 0.075 | 0.16 | EEVTG1V102M | (3) | 125 | |

*Size code():Miniaturization product

· Please refer to the page of "Reflow Profile" and "The Taping Dimensions".

· When requesting vibration-proof product, please put the last "V" instead of "P, Q, or M"

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.
Should a safety concern arise regarding this product, please be sure to contact us immediately.

■ Standard Products

Endurance : 125 °C 1000 h ($\phi 8 \times 10.2 \leq$: 2000 h)

| W.V. | Cap. (±20 %) | Case size | | | Specification | | | Part No. (RoHS:compliant) | Reflow | Min. Packaging Q'ty |
|------|-----------------|-----------|--------|---------------|--|--|--------------------------------------|------------------------------|-------------|------------------------|
| | | Dia. | Length | *Size Code | Ripple Current (100 kHz) (+125 °C) (mA r.m.s.) | ESR (100 kHz) (+20 °C) (Ω) | tan δ (120 Hz) (+20 °C) | | | Taping (pcs) |
| (V) | (μ F) | (mm) | (mm) | | | | | | | |
| 50 | 10 | 8 | 6.2 | E | 80 | 1.60 | 0.14 | EEETG1H100P | (2) | 1000 |
| | 22 | 8 | 6.2 | E | 80 | 1.60 | 0.14 | EEETG1H220P | (2) | 1000 |
| | 33 | 8 | 6.2 | (E) | 80 | 1.60 | 0.14 | EEETG1H330UP | (2) | 1000 |
| | | | 10.2 | F | 133 | 0.75 | 0.14 | EEETG1H330P | (2) | 500 |
| | 47 | 8 | 10.2 | (F) | 133 | 0.75 | 0.14 | EEETG1H470UP | (2) | 500 |
| | | | 10 | 10.2 | G | 221 | 0.50 | 0.14 | EEETG1H470P | (2) |
| | 100 | 10 | 10.2 | (G) | 221 | 0.50 | 0.14 | EEETG1H101UP | (2) | 500 |
| | 220 | 12.5 | 13.5 | H13 | 600 | 0.23 | 0.14 | EEVTG1H221Q | (3) | 200 |
| | 330 | 12.5 | 13.5 | H13 | 600 | 0.23 | 0.14 | EEVTG1H331Q | (3) | 200 |
| | 470 | 16 | 16.5 | J16 | 900 | 0.15 | 0.14 | EEVTG1H471M | (3) | 125 |
| 680 | 16 | 16.5 | (J16) | 900 | 0.15 | 0.14 | EEVTG1H681UM | (3) | 125 | |
| | | 18 | K16 | 950 | 0.14 | 0.14 | EEVTG1H681M | (3) | 125 | |
| 1000 | 18 | 16.5 | K16 | 950 | 0.14 | 0.14 | EEVTG1H102M | (3) | 125 | |
| 63 | 10 | 8 | 6.2 | E | 55 | 2.20 | 0.12 | EEETG1J100P | (2) | 1000 |
| | 22 | 8 | 10.2 | F | 100 | 1.00 | 0.12 | EEETG1J220P | (2) | 500 |
| | 33 | 8 | 10.2 | (F) | 100 | 1.00 | 0.12 | EEETG1J330UP | (2) | 500 |
| | | | 10 | 10.2 | G | 150 | 0.80 | 0.12 | EEETG1J330P | (2) |
| | 47 | 8 | 10.2 | (F) | 100 | 1.00 | 0.12 | EEETG1J470UP | (2) | 500 |
| | | | 10 | 10.2 | G | 150 | 0.80 | 0.12 | EEETG1J470P | (2) |
| | 100 | 10 | 10.2 | (G) | 150 | 0.80 | 0.12 | EEETG1J101UP | (2) | 500 |
| | | | 12.5 | 13.5 | H13 | 350 | 0.26 | 0.12 | EEVTG1J101Q | (3) |
| | 220 | 12.5 | 13.5 | H13 | 350 | 0.26 | 0.12 | EEVTG1J221Q | (3) | 200 |
| | 330 | 16 | 16.5 | J16 | 500 | 0.18 | 0.12 | EEVTG1J331M | (3) | 125 |
| 470 | 16 | 16.5 | J16 | 500 | 0.18 | 0.12 | EEVTG1J471M | (3) | 125 | |
| 80 | 10 | 8 | 10.2 | F | 70 | 1.30 | 0.12 | EEETG1K100P | (2) | 500 |
| | 22 | 8 | 10.2 | (F) | 70 | 1.30 | 0.12 | EEETG1K220UP | (2) | 500 |
| | | | 10 | 10.2 | G | 90 | 1.00 | 0.12 | EEETG1K220P | (2) |
| | 33 | 8 | 10.2 | (F) | 70 | 1.30 | 0.12 | EEETG1K330UP | (2) | 500 |
| | | | 10 | 10.2 | G | 90 | 1.00 | 0.12 | EEETG1K330P | (2) |
| | 47 | 10 | 10.2 | (G) | 90 | 1.00 | 0.12 | EEETG1K470UP | (2) | 500 |
| | | | 12.5 | 13.5 | H13 | 250 | 0.42 | 0.12 | EEVTG1K470Q | (3) |
| | 100 | 12.5 | 13.5 | (H13) | 250 | 0.42 | 0.12 | EEVTG1K101UQ | (3) | 200 |
| | | | 16 | 16.5 | J16 | 350 | 0.30 | 0.12 | EEVTG1K101M | (3) |
| | 220 | 16 | 16.5 | (J16) | 350 | 0.30 | 0.12 | EEVTG1K221UM | (3) | 125 |
| | | | 18 | 16.5 | K16 | 400 | 0.28 | 0.12 | EEVTG1K221M | (3) |
| | 330 | 16 | 16.5 | (J16) | 350 | 0.30 | 0.12 | EEVTG1K331UM | (3) | 125 |
| | | | 18 | 16.5 | K16 | 400 | 0.28 | 0.12 | EEVTG1K331M | (3) |
| | 470 | 18 | 16.5 | K16 | 400 | 0.28 | 0.12 | EEVTG1K471M | (3) | 125 |
| 100 | 10 | 8 | 10.2 | F | 70 | 1.30 | 0.10 | EEETG2A100P | (2) | 500 |
| | 22 | 8 | 10.2 | (F) | 70 | 1.30 | 0.10 | EEETG2A220UP | (2) | 500 |
| | | | 10 | 10.2 | G | 90 | 1.00 | 0.10 | EEETG2A220P | (2) |
| | 33 | 10 | 10.2 | G | 90 | 1.00 | 0.10 | EEETG2A330P | (2) | 500 |
| | 47 | 12.5 | 13.5 | H13 | 250 | 0.42 | 0.10 | EEVTG2A470Q | (3) | 200 |
| | 100 | 16 | 16.5 | J16 | 350 | 0.30 | 0.10 | EEVTG2A101M | (3) | 125 |
| | 220 | 18 | 16.5 | K16 | 400 | 0.28 | 0.10 | EEVTG2A221M | (3) | 125 |
| | 330 | 18 | 16.5 | K16 | 400 | 0.28 | 0.10 | EEVTG2A331M | (3) | 125 |

*Size code():Miniaturization product

· Please refer to the page of "Reflow Profile" and "The Taping Dimensions".

· When requesting vibration-proof product, please put the last "V" instead to "P, Q, or M"

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

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- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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JONHON

«JONHON» (основан в 1970 г.)

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(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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