

### 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 $\mu$ F to 4700 $\mu$ F   |  |    |    |    |    |    |    |     |                             |
| Capacitance Tolerance              | $\pm 20$ % (120 Hz/+20 °C)   |  |    |    |    |    |    |    |     |                             |
| DC Leakage Current                 | $I \leq 0.01$ CV After 2 minutes   |  |    |    |    |    |    |    |     |                             |
| tan $\delta$                       | 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 $\pm 2$ °C and then being stabilized at +20 °C, capacitors shall meet the following limits. |  |    |    |    |    |    |    |     |                             |
|                                    | Capacitance change   | $\pm 30$ % of initial measured value (code U : $\pm 35$ %)     |    |    |    |    |    |    |     |                             |
|                                    | tan $\delta$   | $\leq 300$ % of initial specified value (code U : $\pm 350$ %) |    |    |    |    |    |    |     |                             |
| Shelf Life                         | After storage for 1000 hours at +125 °C $\pm 2$ °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance (With voltage treatment)                             |  |    |    |    |    |    |    |     |                             |
|                                    | After reflow soldering and then being stabilized at +20 °C, capacitors shall meet the following limits.  |  |    |    |    |    |    |    |     |                             |
| Resistance to Soldering Heat       | Capacitance change   | $\pm 10$ % of initial measured value                           |    |    |    |    |    |    |     |                             |
|                                    | tan $\delta$   | $\leq$ 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  $\mu$ F, 10 V 1000  $\mu$ F  
 Marking color : BLACK  
 Lead-Free products ( $\leq \phi 10$ )

Capacitance ( $\mu$ 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 ( $\mu$ 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  $\pm 0.2$   
 B  $\pm 0.2$   
 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 $\pm 0.3$  | 8.3  | 9.5 max.  | 3.4 | 0.65 $\pm 0.1$ | 2.2 | 0.35 $^{+0.15}_{-0.20}$ |
| F         | 8.0  | 10.2 $\pm 0.3$ | 8.3  | 10.0 max. | 3.4 | 0.90 $\pm 0.2$ | 3.1 | 0.70 $\pm 0.20$         |
| G         | 10.0 | 10.2 $\pm 0.3$ | 10.3 | 12.0 max. | 3.5 | 0.90 $\pm 0.2$ | 4.6 | 0.70 $\pm 0.20$         |
| H13       | 12.5 | 13.5 $\pm 0.5$ | 13.5 | 15.0 max. | 4.7 | 0.90 $\pm 0.3$ | 4.4 | 0.70 $\pm 0.30$         |
| J16       | 16.0 | 16.5 $\pm 0.5$ | 17.0 | 19.0 max. | 5.5 | 1.20 $\pm 0.3$ | 6.7 | 0.70 $\pm 0.30$         |
| K16       | 18.0 | 16.5 $\pm 0.5$ | 19.0 | 21.0 max. | 6.7 | 1.20 $\pm 0.3$ | 6.7 | 0.70 $\pm 0.30$         |

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.

00 Nov. 2012

■ Standard Products

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

| W.V. | Cap.<br>(±20 %) | Case size |        |               | Specification   |                                     |                               | Part No.<br>(RoHS:compliant) | Reflow | Min.<br>Packaging Q'ty |
|------|-----------------|-----------|--------|---------------|---|-------------------------------------|-------------------------------|------------------------------|--------|------------------------|
|      |                 | Dia.      | Length | *Size<br>Code | Ripple<br>Current<br>(100 kHz<br>(+125 °C)<br>(mA r.m.s.) | ESR<br>(100 kHz)<br>(+20 °C)<br>(Ω) | tan δ<br>(120 Hz)<br>(+20 °C) |                              |        | Taping<br><br>(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"

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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.<br>(±20 %) | Case size |        |            | Specification   |                                     |                               | Part No.<br>(RoHS:compliant) | Reflow      | Min.<br>Packaging Q'ty |
|------|-----------------|-----------|--------|------------|---|-------------------------------------|-------------------------------|------------------------------|-------------|------------------------|
|      |                 | Dia.      | Length | *Size Code | Ripple Current<br>(100 kHz)<br>(+125 °C)<br>(mA r.m.s.) | ESR<br>(100 kHz)<br>(+20 °C)<br>(Ω) | tan δ<br>(120 Hz)<br>(+20 °C) |                              |             | Taping<br><br>(pcs)    |
| (V)  | (μF)            | (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!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- 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.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(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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