

Технические характеристики генератора

Производитель: Mercury Electronic Ind Co., Ltd.

Поставщик: ООО «НПП «Техно-ПАРК»

Научно-производственное предприятие ООО «НПП «Техно-ПАРК» разрабатывает и поставляет полосно-пропускающие радиочастотные фильтры на поверхностных акустических волнах (ПАВ) и устройства на их основе.

Voltage Controlled Crystal Oscillators

CMOS output

VCXO " G "

CMOS

Thru-Hole

SMD

1.8 V

3.3 V

Min.

Max.

2.5 V

5.0 V

1.25 MHz

50.0 MHz

Unlike regular clock oscillators that have a fixed output frequency, the output frequency of VCXOs (also known as " frequency modulators ") can be tuned $\pm 50 \sim \pm 200$ ppm up or down from the nominal frequency, by varying the control voltage on the voltage control pin. A varactor and a voltage variable capacitance tuning diode, is used to achieve this function.

Applications include (PLL) phase lock loop, SONET / ATM, set -top boxes, MPEG, audio -video modulations, video game consoles and HDTV sets, ONET, 10GbE, Fibre Channel, wireless repeaters, transponders, HDTV, FPGAs, data acquisition.



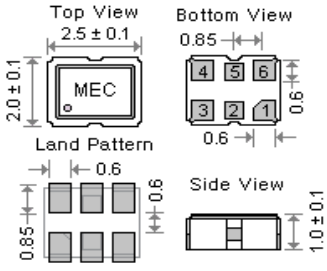
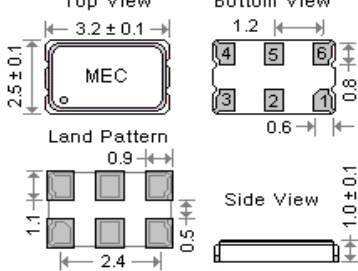
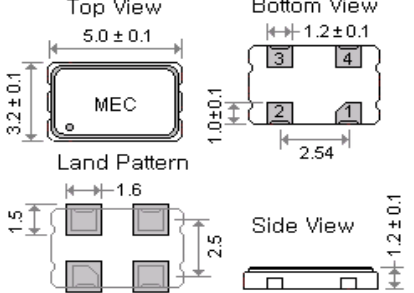
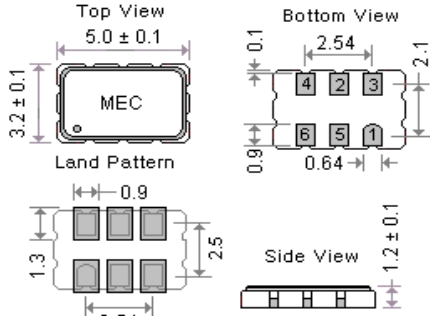
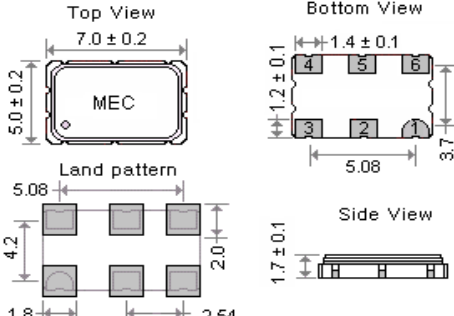
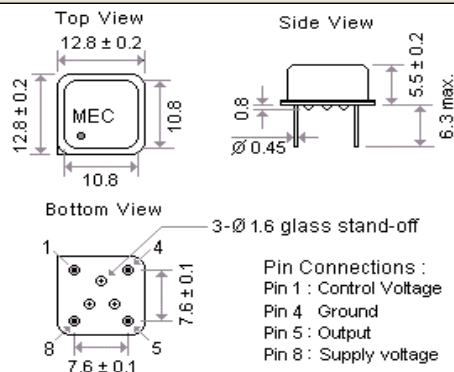
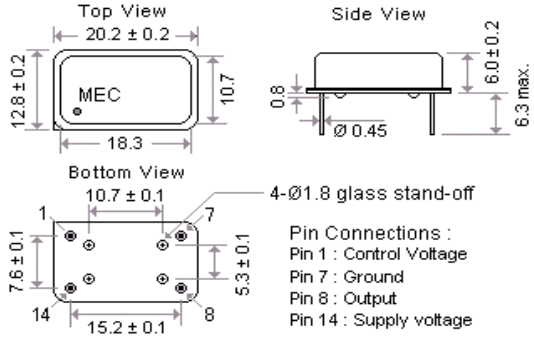
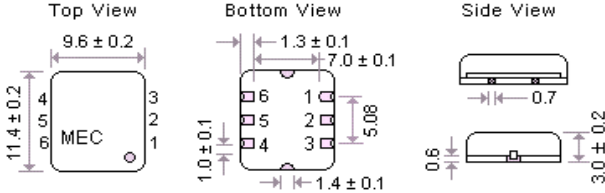
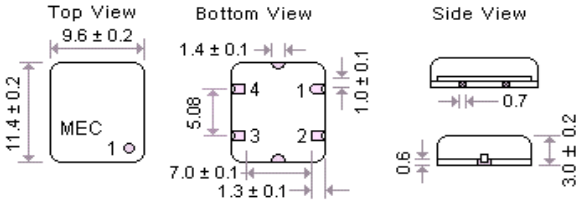
General Specifications of " G " series , [TA = +25°C , V_{DD}= at specified voltage , Load : 15 pF]

| Model | " G " series | | | | | | |
|--------------------------------------|---|--|----------------------------------|--------------|---------------------------------|---|----------------------------------|
| Output Waveform | CMOS | | | | | | |
| Type | SMD Type | | | | | Thru - Hole Type | |
| Pads / Pins | 4 pads | | 6 pads | | | 4 pins | |
| Models (Dimensions) , Unit : mm | G534 (5.0 * 3.2 * 1.2) | | G226 (2.5 * 2.0 * 1.0) | | G576 (7.0 * 5.0 * 1.7) | | G14 (20.2 * 12.8 * 6.0) |
| | G43 (11.4 * 9.6 * 3.0) | | G326 (3.2 * 2.5 * 1.0) | | G63 (11.4 * 9.6 * 3.0) | | G8 (12.8 * 12.8 * 5.5) |
| Supply Voltage (V _{DD}) | +1.8V \pm 5% | | +3.3V \pm 10% | | | +5.0V \pm 10% | |
| Frequency Range | 16.0 MHz ~ 50.0 MHz | | 1.25 MHz ~ 50.0 MHz | | | 1.25 MHz ~ 50.0 MHz | |
| Initial Freq. Accuracy (at 25 °C) | with V _c = 0.9V | | with V _c = 1.65V | | | with V _c = 2.5V | |
| Output Logic High " 1 " | 1.62 V (min.) | | 2.97 V (min.) | | | 4.5 V (min.) | |
| Output Logic Low " 0 " | 0.18 V (max.) | | 0.33 V (max.) | | | 0.5 V (max.) | |
| Frequency Deviation Range | Standard : \pm 80 ppm (min.) | | Standard : \pm 80 ppm (min.) | | | Standard : \pm 80 ppm (min.) ; \pm 200 ppm (min.) available | |
| Control Voltage Center | 0.9 V _{DC} | | 1.65 V _{DC} | | | 2.5 V _{DC} | |
| Control Voltage Range | 0.0V to 1.8V | | 0.3V to 3.0V | | | 0.5V to 4.5V | |
| Frequency Stability Codes | Frequency Stability over Operating Temperature Range | | \pm 25 ppm | \pm 50 ppm | \pm 100 ppm | If non-standard please enter the desired stability after the " C " or " I " For example : " C20 " : \pm 20 ppm over -10°C to +70°C ; " I30 " : \pm 30 ppm over -40°C to +85°C | |
| | Commercial " C " (-10°C to +70°C) | | A | B | C | | |
| | Industrial " I " (-40°C to +85°C) | | D | E | F | | |
| Output Load | 15 pF | | | | | | |
| Rise Time (Tr) / Fall Time (Tf) | 4 nsec.(typ.) ; 6 nsec.(max.) Measured between 10% to 90% of wave form (CL=15pF) | | | | | | |
| Duty Cycle | 50% \pm 10% (standard) , 50% \pm 5% (optional, add " - S " as suffix to part number) | | | | | | |
| RMS Jitter (12 KHz to 20 MHz) | 1.0 psec (max.) | | | | | | |
| Phase Noise | Offset | 10 Hz | 100 Hz | 1k Hz | 10K Hz | 100K Hz | 1 MHz |
| [27MHz , 3.3V] | dBc/Hz (typ.) | -40 dBc/Hz | -104 dBc/Hz | -132 dBc/Hz | -147 dBc/Hz | -152 dBc/Hz | -150 dBc/Hz |
| Start-up Time | 10 msec. (max.) | | | | | | |
| Current Consumption | 10 ~ 45 mA (Frequency dependent) . For 27 MHz: 10 mA (typ.) at +3.3 V _{DD} and 20 mA (typ.) at 5.0 V _{DD} . | | | | | | |
| Linearity | 6% (typ.) ; 10% (max.) | | | | | | |
| Modulation Bandwidth | 10 KHz (min.) Measured at -3 dB | | | | | | |
| Input Impedance | 5 M Ω (typ.) | | | | | | |
| Slope Polarity (Transfer Function) | Monotonic and Positive : Increasing control voltage always increases output frequency , | | | | | | |
| Storage Temperature | -55°C to + 125°C | | | | | | |
| Aging at Ta = +25°C | \pm 3 ppm per year (max.) | | | | | | |
| Output Enable / Disable Function | Enable | When 70% (min.) of V _{DD} to Enable Output. ; Enable time : 2 msec (max.) | | | | | |
| | Disable | When 30% (max.) of V _{DD} to Disable Output. ; Disable time : 100 nsec (max.) | | | | | |

Mercury www.mercury-crystal.com ■ Taiwan : Tel: (+886)-2-2406-2779 / sales-tw@mercury-crystal.com

■ USA : Tel: (+1)-909-466-0427 / sales-us@mercury-crystal.com ■ China : Tel: (+86)-512-5763-8100 / sales-cn@mercury-crystal.com

Outline Dimensions (Unit : mm) , Suggested pad Layout for SMDs

| [G226] | [G326] | [G534] |
|--|---|---|
|  <p>Top View: 2.5 ± 0.1, 2.0 ± 0.1 Bottom View: 0.85, 0.6, 0.6 ± 0.1 Land Pattern: 0.6, 0.85, 0.08 Side View: 1.0 ± 0.1</p> <p>Pad Connections : Pad 1 : Control Voltage Pad 2 : OE Pad 3 : Ground Pad 4 : Output Pad 5 : No Connection Pad 6 : Supply Voltage</p> |  <p>Top View: 3.2 ± 0.1, 2.5 ± 0.1 Bottom View: 1.2, 0.8, 0.6 Land Pattern: 0.9, 1.1, 2.4, 0.5 Side View: 1.0 ± 0.1</p> <p>Pad Connections : Pad 1 : Control Voltage Pad 2 : OE Pad 3 : Ground Pad 4 : Output Pad 5 : No Connection Pad 6 : Supply Voltage</p> |  <p>Top View: 5.0 ± 0.1, 3.2 ± 0.1 Bottom View: 1.2 ± 0.1, 1.0 ± 0.1, 2.54 Land Pattern: 1.6, 1.5, 2.5, 2.54 Side View: 1.2 ± 0.1</p> <p>Pad Connections : Pad 1 : Control Voltage Pad 2 : Ground Pad 3 : Output Pad 4 : Supply Voltage</p> |
|  <p>Top View: 5.0 ± 0.1, 3.2 ± 0.1 Bottom View: 2.54, 2.1, 0.9, 0.64 Land Pattern: 0.9, 1.3, 2.5, 2.54 Side View: 1.2 ± 0.1</p> <p>Pad Connections : Pad 1 : Control Voltage Pad 2 : OE Pad 3 : Ground Pad 4 : Output Pad 5 : No Connection Pad 6 : Supply Voltage</p> |  <p>Top View: 7.0 ± 0.2, 5.0 ± 0.2 Bottom View: 1.4 ± 0.1, 5.08, 3.7, 1.2 ± 0.1 Land pattern: 5.08, 4.2, 2.0, 1.8, 2.54 Side View: 1.7 ± 0.1</p> <p>Pad Connections : Pad 1 : Control Voltage Pad 2 : OE Pad 3 : Ground Pad 4 : Output Pad 5 : No Connection Pad 6 : Supply Voltage</p> | |
|  <p>Top View: 12.8 ± 0.2, 10.8 Side View: 0.8, 5.5 ± 0.2, 6.3 max., Ø0.45 Bottom View: 3-Ø1.6 glass stand-off, 1, 4, 7.6 ± 0.1, 8, 5, 7.6 ± 0.1</p> <p>Pin Connections : Pin 1 : Control Voltage Pin 4 : Ground Pin 5 : Output Pin 8 : Supply voltage</p> |  <p>Top View: 20.2 ± 0.2, 12.8 ± 0.2, 18.3, 10.7 Side View: 0.8, 6.0 ± 0.2, 6.3 max., Ø0.45 Bottom View: 10.7 ± 0.1, 4-Ø1.8 glass stand-off, 7.6 ± 0.1, 14, 15.2 ± 0.1, 8, 5.3 ± 0.1</p> <p>Pin Connections : Pin 1 : Control Voltage Pin 7 : Ground Pin 8 : Output Pin 14 : Supply voltage</p> | |
|  <p>Top View: 9.6 ± 0.2, 11.4 ± 0.2, 6.5 ± 0.4, 3, 2, 1 Bottom View: 1.3 ± 0.1, 7.0 ± 0.1, 1.0 ± 0.1, 5.08, 1.4 ± 0.1, 0.6, 3.0 ± 0.2 Side View: 0.7</p> <p>Pad Connections : Pad 1 : Control Voltage Pad 2 : OE Pad 3 : Ground Pad 4 : Output Pad 5 : No Connection Pad 6 : Supply Voltage</p> |  <p>Top View: 9.6 ± 0.2, 11.4 ± 0.2 Bottom View: 1.4 ± 0.1, 5.08, 7.0 ± 0.1, 1.3 ± 0.1, 1.0 ± 0.1, 0.6, 3.0 ± 0.2 Side View: 0.7</p> <p>Pad Connections : Pad 1 : Control Voltage (rounded pad) Pad 2 : Ground Pad 3 : Output Pad 4 : Supply voltage</p> | |

Part Number Format and Examples

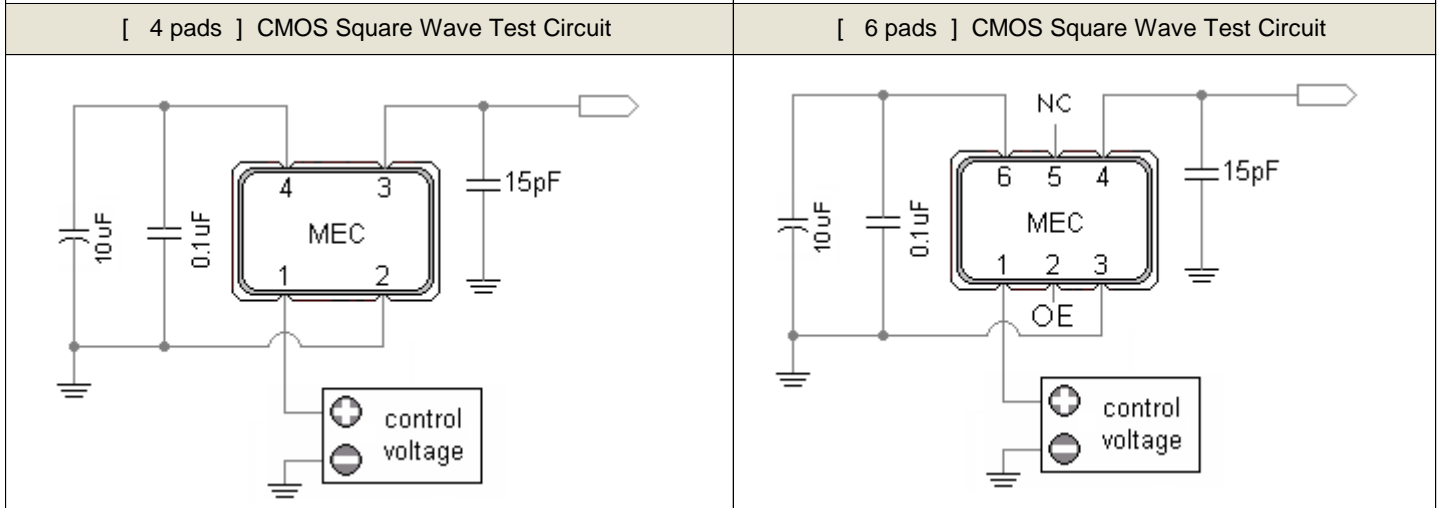
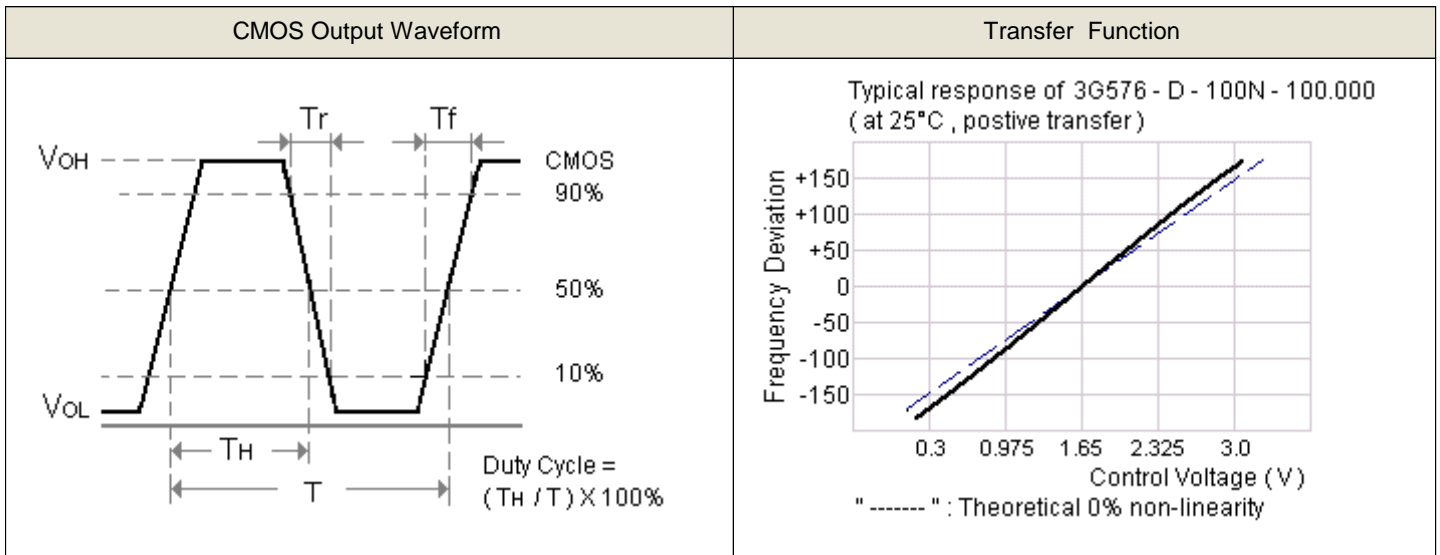
| | | | | | |
|----------------|-------------|---------------------|---------------|------------|------------------|
| [1] | [2] | [3] | [4] | [5] | [6] |
| Supply Voltage | Holder Type | Frequency Stability | Pulling Range | Range Code | Center Frequency |

| | | | | | | | | | | |
|----------|-----|---|------|---|---|---|-----|---|---|--------|
| Examples | (1) | 5 | G14 | - | B | - | 100 | N | - | 35.328 |
| | (2) | 3 | G576 | - | D | - | 80 | T | - | 27.000 |

Ex (1) : **5G14 - B - 100N - 35.328** [+5.0V , full size 4 pin Dip type , ±50ppm (-10°C to 70°C) , pulling : ±100 ppm (min.) , 35.328 MHz]

Ex (1) : **3G576 - D - 80T - 27.000** [+3.3V , G576 type , ±25ppm (-40°C to 85°C) , pulling : ±80 ppm (typ.) , 27.000 MHz]

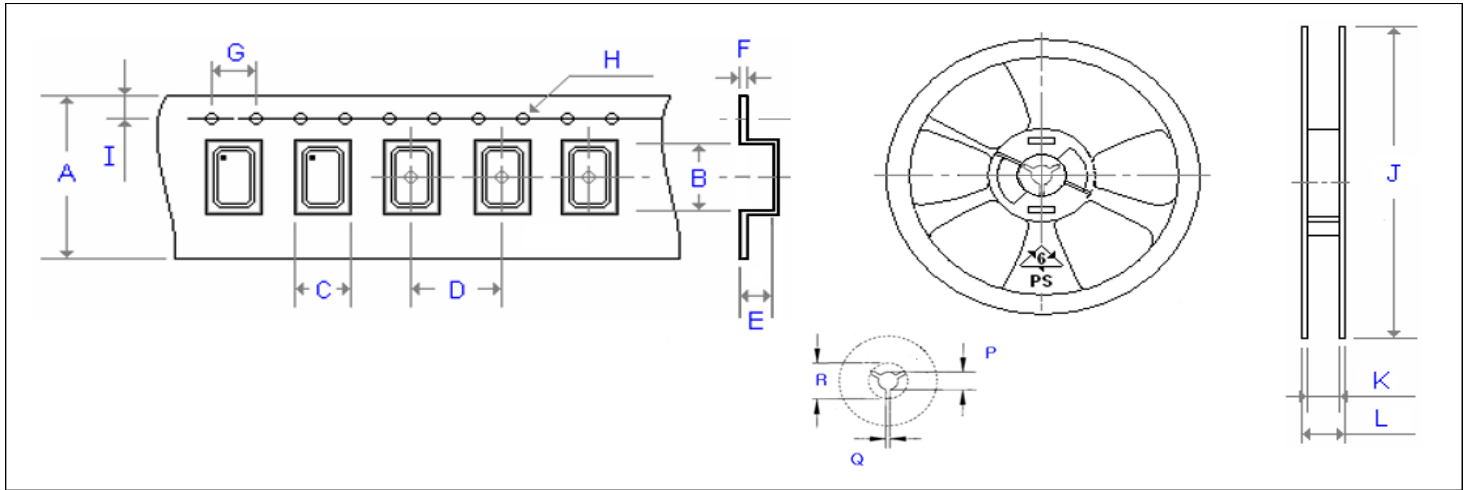
| | | |
|-------|---|---|
| [1] | Supply voltage , " 18 " for +1.8V ; " 3 " for +3.3V ; " 5 " for +5.0V | |
| [2] | Holder Type | |
| [3] | -10°C ~ 70 °C | " A " ± 25ppm ; " B " ± 50ppm ; " C " ± 100ppm ; If non-standard please enter the desired stability after " C " ,for example " C15 " : represents ±15ppm over -10 to +70°C |
| | -40°C ~ 85 °C | " D " ± 25ppm ; " E " ± 50ppm ; " F " ± 100ppm ; If non-standard please enter the desired stability after " I " ,for example " I20 " : represents ±20ppm over -40 to +85°C |
| [4] | Frequency Pulling Range | 3.3V From ±30ppm ~ ±150ppm , control Voltage range : 0.3V ~ 3.0 ; control voltage center : ± 1.65 V |
| | | 5.0V From ±70ppm ~ ±200ppm , control Voltage range : 0.5V ~ 4.5V ; control voltage center : ± 2.5 V |
| [5] | Pulling Range Code | " M " stands for maximum ; " N " stands for minimum ; " T " stands for typical (tolerance is ± 20%) |
| [6] | Center Frequency in MHz | |



Emboss Taping and Reel Specifications

[VCXO]

[(VC)TCXO]



Carrier Type Dimensions (unit : mm) ±0.3mm

| | A | B | C | D | E | F | G | H | I | pcs / reel |
|--------------|-------|-------|-------|-------|------|------|------|--------|------|------------|
| G_226 | 8.00 | 2.80 | 2.25 | 4.00 | 1.10 | 0.30 | 4.00 | Ø 1.50 | 1.75 | 3000 |
| G_326 | 8.00 | 3.40 | 2.70 | 4.00 | 1.40 | 0.25 | 4.00 | Ø 1.50 | 1.75 | 3000 |
| G_534 | 12.00 | 5.30 | 3.60 | 8.00 | 1.40 | 0.30 | 4.00 | Ø 1.50 | 1.75 | 1000 |
| G_576 | 16.00 | 7.30 | 5.30 | 8.00 | 1.90 | 0.32 | 4.00 | Ø 1.50 | 1.75 | 1000 |
| G_43 | 24.00 | 11.80 | 10.00 | 16.00 | 5.00 | 0.30 | 4.00 | Ø 1.50 | 1.75 | 500 |
| G_63 | 24.00 | 11.80 | 10.00 | 16.00 | 5.00 | 0.30 | 4.00 | Ø 1.50 | 1.75 | 500 |
| G_JF538 | 12.00 | 5.30 | 3.60 | 8.00 | 1.40 | 0.30 | 4.00 | Ø 1.50 | 1.75 | 1000 |
| G_JF578 | 16.00 | 7.30 | 5.30 | 8.00 | 1.90 | 0.32 | 4.00 | Ø 1.50 | 1.75 | 1000 |
| (V)M21 | 8.00 | 2.30 | 1.90 | 4.00 | 0.90 | 0.25 | 4.00 | Ø 1.50 | 1.75 | 3000 |
| (V)ME21 | 8.00 | 2.30 | 1.50 | 4.00 | 1.35 | 0.25 | 4.00 | Ø 1.50 | 1.75 | 3000 |
| (V)M22 | 8.00 | 2.80 | 2.25 | 4.00 | 1.10 | 0.30 | 4.00 | Ø 1.50 | 1.75 | 3000 |
| (V)M_32 | 8.00 | 3.71 | 2.80 | 4.00 | 1.75 | 0.25 | 4.00 | Ø 1.50 | 1.75 | 3000 |
| (V)MQ_326 | 12.00 | 3.60 | 2.90 | 4.00 | 1.70 | 0.30 | 4.00 | Ø 1.50 | 1.75 | 3000 |
| (V)M_53 | 12.00 | 5.30 | 3.60 | 8.00 | 1.40 | 0.30 | 4.00 | Ø 1.50 | 1.75 | 1000 |
| (V)M_57(2) | 16.00 | 7.40 | 5.50 | 8.00 | 2.80 | 0.35 | 4.00 | Ø 1.50 | 1.75 | 500 |
| (V)M_43 (63) | 24.00 | 11.80 | 10.00 | 16.00 | 5.00 | 0.30 | 4.00 | Ø 1.50 | 1.75 | 500 |

Reel Dimensions (unit : mm) ±2mm

| | J | K | L | P | Q | R | pcs / reel |
|--------------|--------|-------|-------|-------|------|-------|------------|
| G_226 | 180.00 | 8.40 | 11.40 | 13.00 | 2.50 | 20.20 | 3000 |
| G_326 | 180.00 | 9.00 | 12.00 | 13.00 | 2.50 | 20.20 | 3000 |
| G_534 | 180.00 | 13.00 | 16.00 | 13.00 | 2.50 | 20.20 | 1000 |
| G_576 | 180.00 | 17.20 | 19.30 | 13.00 | 2.50 | 20.20 | 1000 |
| G_43 | 330.00 | 24.50 | 29.10 | 13.00 | 2.50 | 20.20 | 500 |
| G_63 | 330.00 | 24.50 | 29.10 | 13.00 | 2.50 | 20.20 | 500 |
| G_JF538 | 180.00 | 13.00 | 16.00 | 13.00 | 2.50 | 20.20 | 1000 |
| G_JF578 | 180.00 | 17.20 | 19.30 | 13.00 | 2.50 | 20.20 | 1000 |
| (V)M21 | 180.00 | 8.40 | 11.40 | 13.00 | 2.50 | 20.20 | 3000 |
| (V)ME21 | 180.00 | 9.00 | 12.00 | 13.00 | 2.50 | 20.20 | 3000 |
| (V)M22 | 180.00 | 8.40 | 11.40 | 13.00 | 2.50 | 20.20 | 3000 |
| (V)M_32 | 180.00 | 9.00 | 11.40 | 13.00 | 2.50 | 20.20 | 3000 |
| (V)MQ_326 | 180.00 | 13.00 | 16.00 | 13.00 | 2.50 | 20.20 | 3000 |
| (V)M_53 | 180.00 | 13.00 | 16.00 | 13.00 | 2.50 | 20.20 | 1000 |
| (V)M_57(2) | 180.00 | 17.20 | 19.30 | 13.00 | 2.50 | 20.20 | 500 |
| (V)M_43 (63) | 330.00 | 24.50 | 29.10 | 13.00 | 2.50 | 20.20 | 500 |

Mercury www.mercury-crystal.com ■Taiwan : Tel: (+886)-2-2406-2779 / sales-tw@mercury-crystal.com

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