

SolidMatrix[®] Automotive Surface Mount Fuses

QF0603G Series

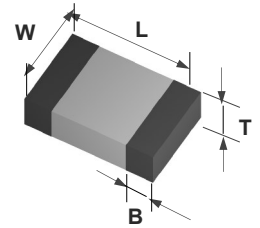


Agency Approval:

| Agency | File NO. |
|--------|----------|
| UL | E232989 |

Shape and Dimensions:

| Unit | Inch | mm |
|------|---------------|-------------|
| L | 0.063 ± 0.006 | 1.60 ± 0.15 |
| W | 0.031 ± 0.006 | 0.80 ± 0.15 |
| T | 0.031 ± 0.006 | 0.80 ± 0.15 |
| B | 0.014 ± 0.006 | 0.36 ± 0.15 |



Clearing Time Characteristics:

| % of current rating | Clearing time at 25°C | |
|---------------------|-----------------------|-----------|
| | Min. | Max. |
| 100% | 4 hours | |
| 250% | | 5 seconds |

Ordering Information:

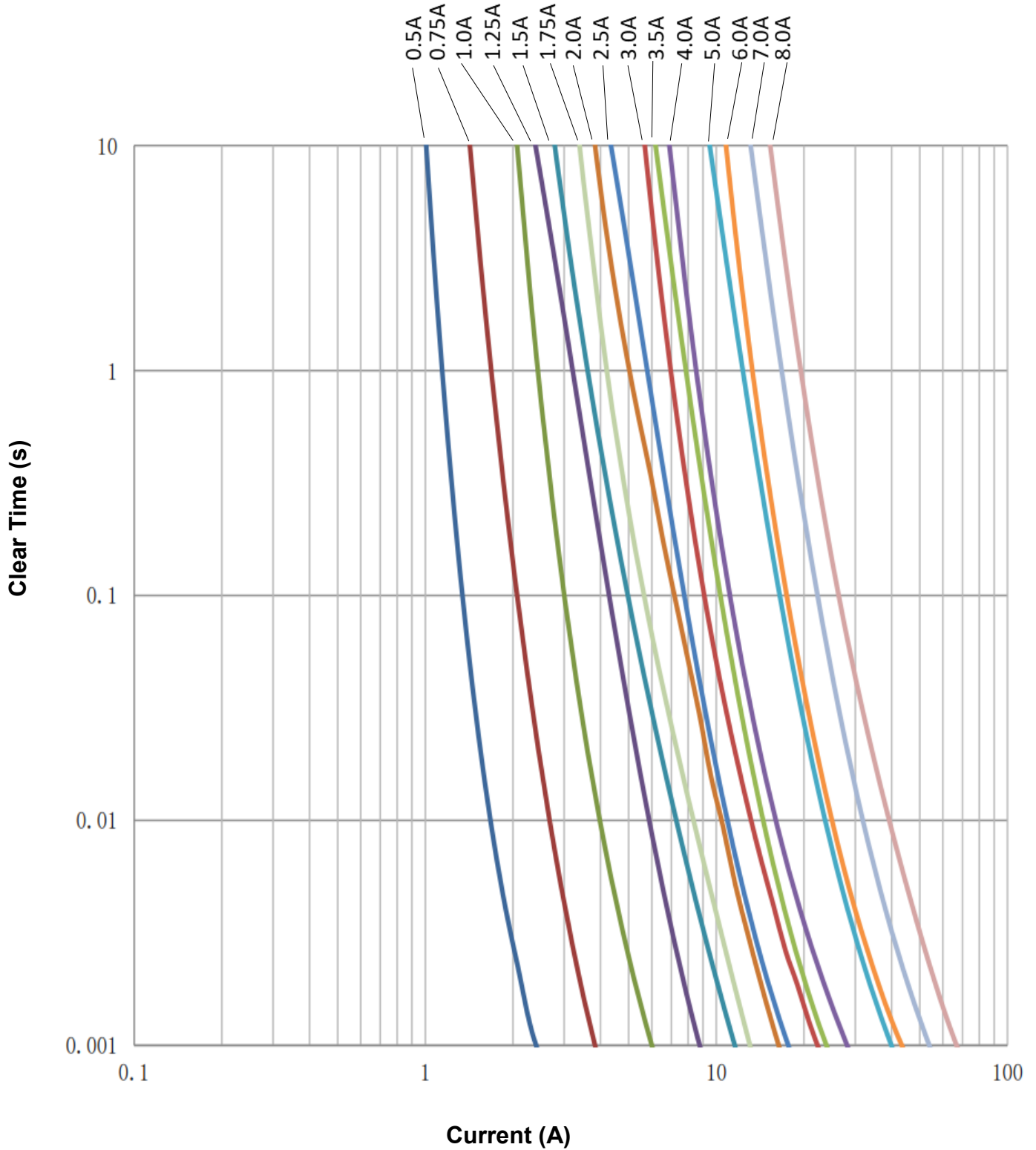
| Part Number | Current Rating (A) | Voltage Rating (VDC) | Interrupting Ratings | Nominal Cold DCR (Ω) ¹ | Nominal I ² t (A ² s) ² | Marking Code ³ |
|--------------|--------------------|----------------------|----------------------|--|--|---------------------------|
| QF0603GA500T | 0.5 | 65 | 50A @ 65VDC | 0.827 | 0.004 | C |
| QF0603GA750T | 0.75 | | | 0.373 | 0.012 | D |
| QF0603G1A00T | 1.0 | | | 0.237 | 0.030 | E |
| QF0603G1A25T | 1.25 | | | 0.153 | 0.065 | F |
| QF0603G1A50T | 1.5 | | | 0.116 | 0.10 | G |
| QF0603G1A75T | 1.75 | | | 0.091 | 0.145 | H |
| QF0603G2A00T | 2.0 | 35 | 50A @ 35VDC | 0.067 | 0.18 | I |
| QF0603G2A50T | 2.5 | | | 0.039 | 0.22 | J |
| QF0603G3A00T | 3.0 | | | 0.029 | 0.34 | K |
| QF0603G3A50T | 3.5 | | | 0.024 | 0.39 | L |
| QF0603G4A00T | 4.0 | | | 0.020 | 0.53 | M |
| QF0603G5A00T | 5.0 | | | 0.012 | 0.88 | N |
| QF0603G6A00T | 6.0 | 24 | 80A @ 24VDC | 0.011 | 1.09 | O |
| QF0603G7A00T | 7.0 | | | 0.008 | 1.86 | P |
| QF0603G8A00T | 8.0 | | | 0.007 | 2.7 | R |

1. Measured at ≤10% of rated current and 25°C ambient.
2. Melting I²t at 0.001 second pre-arcing time.
3. Cyan marking character code.

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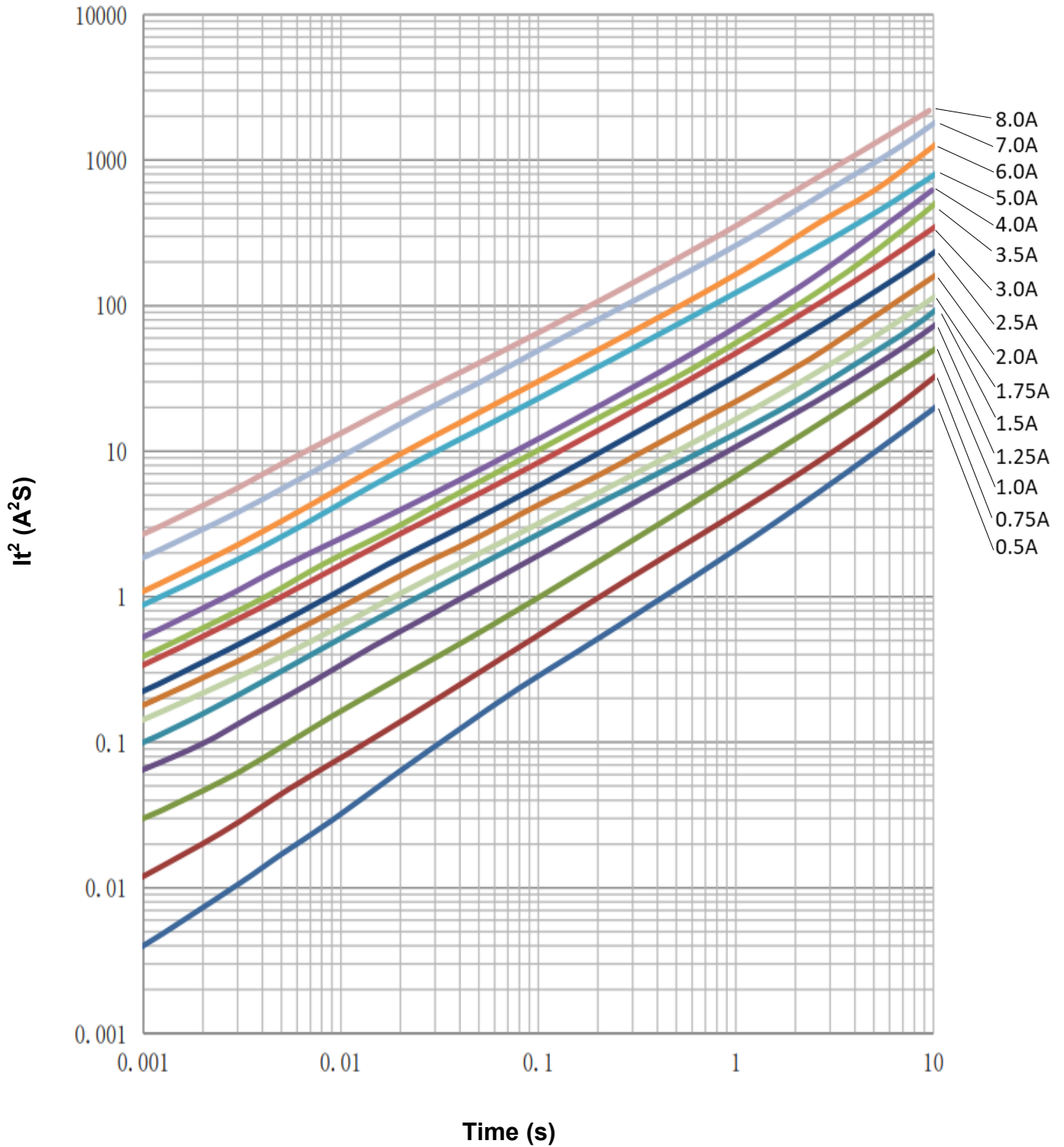
Average Pre-arcing Time Curves:



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Average I^2t vs. t Curves:



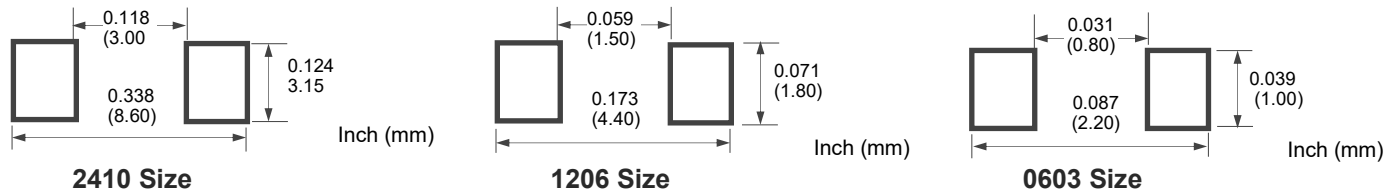
Automotive Surface Mount Fuses

Product Identification:

Q A 1206 F 2A00 T
 (1) (2) (3) (4) (5) (6)

- (1) Product type code: Q- Automotive fuse
- (2) Product code: A-AirMatrix Chip Fuse, F-SolidMatrix Chip Fuse
- (3) Dimension code: L x W (inch)
 - The first two digits - L (length)
 - The last two digits - W (width)
- (4) Characteristic code: F-fast acting, H-Slow Blow
- (5) Current rating code: 2A00-2.0A
- (6) Package code:
 - T – Tape and Reel
 - B – Bulk

Recommended Land Pattern:



Fuse Selection and Temperature De-rating Guideline:

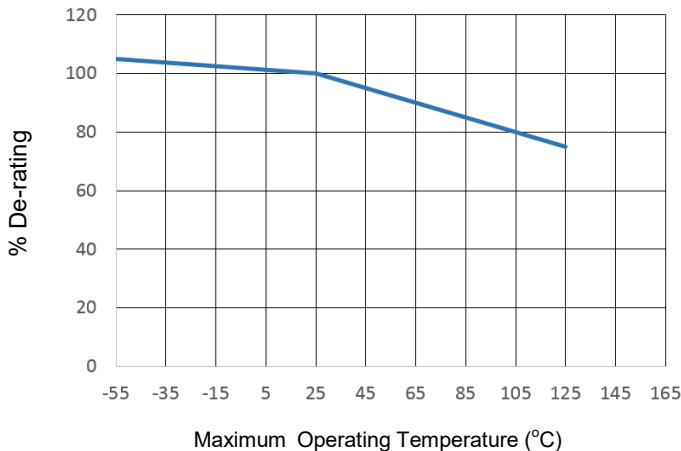
The ambient temperature affects the current carrying capacity of fuses. When a fuse is operating at a temperature higher than 25°C, the fuse shall be “de-rated”.

To select a fuse from the catalog, the following rule may be followed:

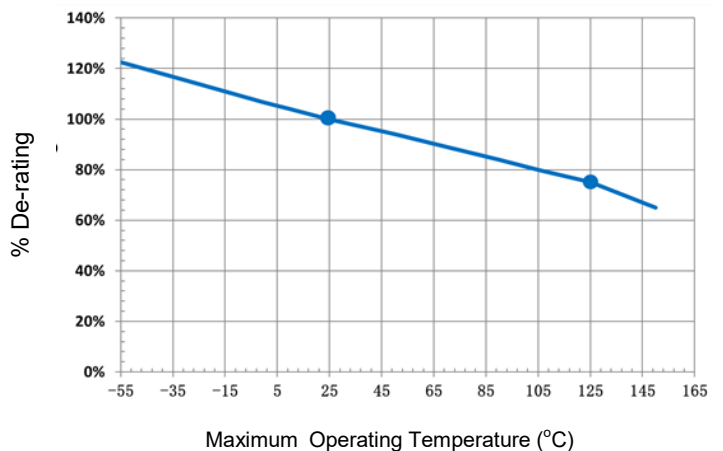
Catalog Fuse Current Rating = Nominal Operating Current / 0.75 / % De-rating at the maximum operating temperature.

Example: At maximum operating temperature of 65°C, % De-rating is 90%. The nominal operating current is 4 A. The current rating for fuse selected from the catalog shall be: $4 / 0.75 / 90\% = 5.9$ or 6 A. Specifications and descriptions in this literature are as accurate as known at the time of publish, but are subject to change without notice.

Effect of Ambient Temperature on Current Rating of QA2410 and QA1210 Series.



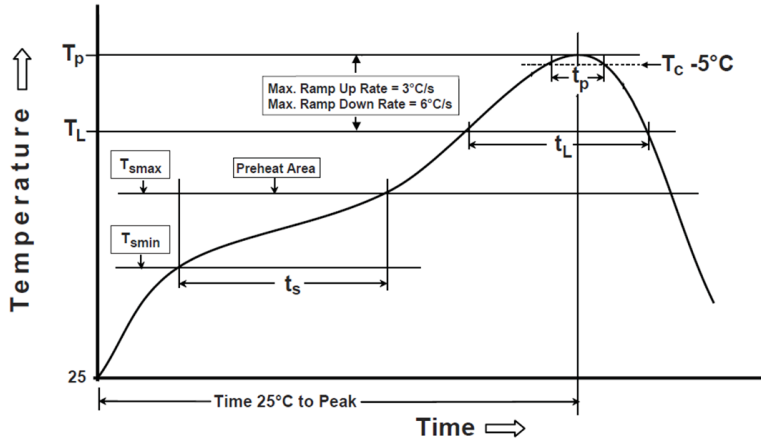
Effect of Ambient Temperature on Current Rating of QF1206 and QF0603 Series.



Automotive Surface Mount Fuses

Soldering Temperature Profile:

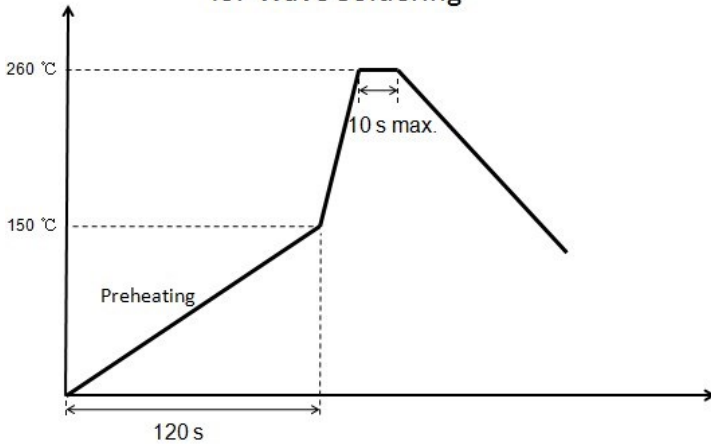
* Recommended Temperature Profile for Reflow Soldering



| Profile Feature | Pb-Free Assembly |
|---|----------------------------------|
| Preheat/Soak Temperature Min (T_{smin}) Temperature Max (T_{smax}) Time (t_s) from (T_{smin} to T_{smax}) | 150°C 200°C 60~120 seconds |
| Ramp-up rate (T_L to T_p) | 3°C/second max. |
| Liquidous temperature (T_L) Time (t_L) maintained above T_L | 217°C 60~150 seconds |
| Peak package body temperature (T_p) | 260°C |
| Time (t_p)* within 5°C of the specified classification temperature (T_c) | 30 seconds * |
| Ramp-down rate (T_p to T_L) | 6°C/second max. |
| Time 25°C to peak temperature | 8 minutes max. |
| * Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum | |

* Recommended Temperature Profile for Wave Soldering

Recommended Temperature Profile for Wave Soldering



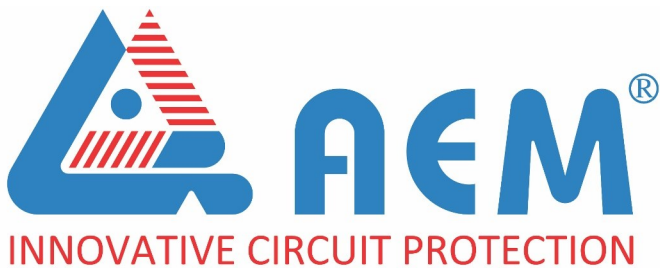
Notice: Wave Soldering is suitable for 1206 and 0603 size.

Packaging:

| Chip Size | Parts on 7 inch (178 mm) Reel | Parts on 13 inch (330 mm) Reel |
|------------------------|-------------------------------|--------------------------------|
| 0603 (1608) | 4,000 | - |
| 1206 (3216) | 3,000 | - |
| 1206 (3216), QA Series | 3,500 | - |
| 2410 (6125) | 2,000 | 7,000 |

Disclaimer

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