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Jameco Part Number 1361895

Radial Lead Type

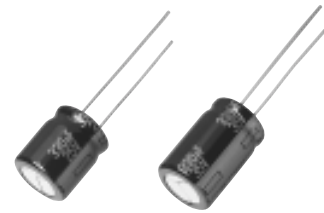
Series: FM Type :A

■ Features

- Low impedance (40 to 70% less than FC Series)
- Endurance : 2000 to 7000 hours at +105°C
- RoHS directive compliant

Country of Origin

- Japan
- Malaysia
- China



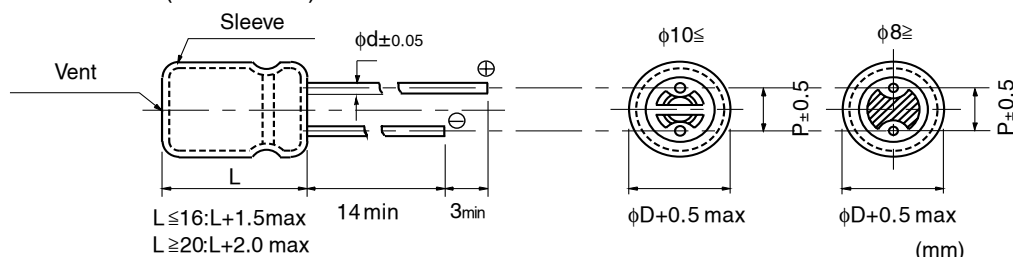
■ Specifications

| Category temp. range | -40 to +105°C | | | | | | | | | | | | | | | |
|---|---|---|------|------|------|------|----|----|-------|------|------|------|------|------|------|-----------------------|
| Rated W.V. Range | 6.3 to 50 V .DC | | | | | | | | | | | | | | | |
| Nominal Cap. Range | 22 to 6800 μF | | | | | | | | | | | | | | | |
| Capacitance Tolerance | ±20 % (120Hz/+20°C) | | | | | | | | | | | | | | | |
| DC Leakage Current | $I \leq 0.01 CV (\mu A)$ after 2 minutes application of rated working voltage at +20°C | | | | | | | | | | | | | | | |
| tan δ | <table border="1"> <tr> <th>W.V.</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> <tr> <th>tan δ</th> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> </tr> </table> | W.V. | 6.3 | 10 | 16 | 25 | 35 | 50 | tan δ | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | (max.) (120Hz/+20°C°) |
| | W.V. | 6.3 | 10 | 16 | 25 | 35 | 50 | | | | | | | | | |
| tan δ | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | | | | | | | | | | |
| Add 0.02 per 1000μF for products of 1000μF or more. | | | | | | | | | | | | | | | | |
| Endurance | After following life test with DC voltage and +105±2°C ripple current value applied (The sum of DC and ripple peak voltage shall not exceed the rated working voltage), the capacitors shall meet the limits specified below. | | | | | | | | | | | | | | | |
| | Duration φ5 to φ6.3: 2000 hours, φ8×11.5 to φ8×15: 3000 hours φ8×20 to φ10×16: 4000 hours, φ10×20 to φ12.5×20/ φ16×20: 5000 hours φ12.5×25 to φ12.5×35/ φ16×25: 7000 hours | | | | | | | | | | | | | | | |
| | Capacitance change | ±25% of initial measured value (6.3V to 10V:±30%) | | | | | | | | | | | | | | |
| | tan δ | ≤ 200 % of initial specified value | | | | | | | | | | | | | | |
| Shelf Life | DC leakage current | | | | | | | | | | | | | | | |
| | ≤ initial specified value | | | | | | | | | | | | | | | |
| Shelf Life | After storage for 1000 hours at +105±2 °C with no voltage applied and then being stabilized at +20 °C, capacitor shall meet the limits specified in Endurance.(With voltage treatment) | | | | | | | | | | | | | | | |

■ Frequency correction factor for ripple current

| W.V.(V.DC) | Capacitance (μF) | Frequency(Hz) | | | | |
|------------|------------------|---------------|------|------|------|------|
| | | 60 | 120 | 1k | 10k | 100k |
| 6.3 to 50 | 22 to 33 | 0.45 | 0.55 | 0.75 | 0.90 | 1.00 |
| | 47 to 330 | 0.60 | 0.70 | 0.85 | 0.95 | 1.00 |
| | 390 to 1000 | 0.65 | 0.75 | 0.90 | 0.98 | 1.00 |
| | 1200 to 6800 | 0.75 | 0.80 | 0.95 | 1.00 | 1.00 |

■ Dimensions in mm (not to scale)



| Body Dia. φD | 5 | 6.3 | 8 | 10 | 12.5 | 16 |
|---------------|-----|-----|-----|-----|------------|----------|
| Body Length L | — | — | — | — | 12.5 to 25 | 30 to 35 |
| Lead Dia. φd | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.8 |
| Lead space P | 2 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 |

■ Case size VS Impedance

| W.V.(V.DC) Case size (φD×L) | 6.3 to 35 | | | 50 | | |
|---------------------------------------|--------------------------|-------|------------------------------------|--------------------------|-------|------------------------------------|
| | Impedance (Ω /100kHz) | | Ripple current (mA.rms./100kHz) | Impedance (Ω /100kHz) | | Ripple current (mA.rms./100kHz) |
| | +20°C | -10°C | +105°C | +20°C | -10°C | +105°C |
| 5 × 11 | 0.300 | 1.000 | 280 | 0.340 | 1.130 | 250 |
| 6.3 × 11.2 | 0.130 | 0.430 | 455 | 0.140 | 0.460 | 405 |
| 8 × 11.5 | 0.056 | 0.168 | 950 | 0.061 | 0.183 | 870 |
| 8 × 15 | 0.041 | 0.123 | 1240 | 0.045 | 0.135 | 1140 |
| 8 × 20 | 0.030 | 0.090 | 1560 | 0.033 | 0.099 | 1430 |
| 10 × 12.5 | 0.038 | 0.114 | 1290 | 0.042 | 0.126 | 1170 |
| 10 × 16 | 0.026 | 0.078 | 1790 | 0.030 | 0.090 | 1650 |
| 10 × 20 | 0.019 | 0.057 | 2180 | 0.023 | 0.069 | 1890 |
| 10 × 25 | 0.018 | 0.054 | 2470 | 0.022 | 0.066 | 2150 |
| 12.5 × 20 | 0.018 | 0.045 | 2600 | 0.022 | 0.055 | 2260 |
| 12.5 × 25 | 0.015 | 0.038 | 3190 | 0.018 | 0.045 | 2660 |
| 12.5 × 30 | 0.013 | 0.033 | 3630 | 0.016 | 0.040 | 3160 |
| 12.5 × 35 | 0.012 | 0.030 | 3750 | 0.014 | 0.035 | 3270 |
| 16 × 20 | 0.017 | 0.043 | 3300 | 0.019 | 0.048 | 2870 |
| 16 × 25 | 0.014 | 0.035 | 3820 | 0.016 | 0.040 | 3320 |

■ Standard Products

| W.V. (V) | Cap (±20%) (μF) | Case size | | Specification | | | Lead size | | | | Part No | Min. Packaging Qty | |
|-------------|-----------------------|--------------|----------------|--|---|----------------------|-------------------|------------------|-------------|-------------|-----------------|--------------------|-----------------|
| | | Dia. (mm) | Length (mm) | Ripple current (100kHz) (+105°C) (mA) | Impedance (100kHz) (+20°C) (Ω) | Endurance (hours) | Lead Dia. (mm) | Lead space | | | | Long Lead (pcs) | Taping (pcs) |
| | | | | | | | | Straight (mm) | * B (mm) | * H (mm) | | | |
| 6.3 | 150 | 5 | 11 | 280 | 0.300 | 2000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUFM0J151 () | 200 | 2000 |
| | 330 | 6 | 11.2 | 455 | 0.130 | 2000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUFM0J331 () | 200 | 2000 |
| | 560 | 8 | 11.5 | 950 | 0.056 | 3000 | 0.6 | 3.5 | 5.0 | | EEUFM0J561 () | 200 | 1000 |
| | 820 | 8 | 15 | 1240 | 0.041 | 3000 | 0.6 | 3.5 | 5.0 | | EEUFM0J821L () | 200 | 1000 |
| | 1200 | 8 | 20 | 1560 | 0.030 | 4000 | 0.6 | 3.5 | 5.0 | | EEUFM0J122L () | 200 | 1000 |
| | 1000 | 10 | 12.5 | 1290 | 0.038 | 4000 | 0.6 | 5.0 | 5.0 | | EEUFM0J102 () | 200 | 500 |
| | 1200 | 10 | 16 | 1790 | 0.026 | 4000 | 0.6 | 5.0 | 5.0 | | EEUFM0J122 () | 200 | 500 |
| | 1500 | 10 | 20 | 2180 | 0.019 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM0J152 () | 200 | 500 |
| | 2200 | 10 | 25 | 2470 | 0.018 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM0J222L () | 200 | 500 |
| | 3300 | 12.5 | 20 | 2600 | 0.018 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM0J332 () | 200 | 500 |
| | 3900 | 12.5 | 25 | 3190 | 0.015 | 7000 | 0.6 | 5.0 | 5.0 | | EEUFM0J392 () | 200 | 500 |
| | 4700 | 12.5 | 30 | 3630 | 0.013 | 7000 | 0.8 | 5.0 | | | EEUFM0J472L | 100 | |
| | 5600 | 12.5 | 35 | 3750 | 0.012 | 7000 | 0.8 | 5.0 | | | EEUFM0J562L | 100 | |
| | | 16 | 20 | 3300 | 0.017 | 5000 | 0.8 | 7.5 | 7.5 | | EEUFM0J562S () | 100 | 250 |
| | 6800 | 16 | 25 | 3820 | 0.014 | 7000 | 0.8 | 7.5 | 7.5 | | EEUFM0J682 () | 100 | 250 |
| 10 | 100 | 5 | 11 | 280 | 0.300 | 2000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUFM1A101 () | 200 | 2000 |
| | 220 | 6 | 11.2 | 455 | 0.130 | 2000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUFM1A221 () | 200 | 2000 |
| | 470 | 8 | 11.5 | 950 | 0.056 | 3000 | 0.6 | 3.5 | 5.0 | | EEUFM1A471 () | 200 | 1000 |
| | 680 | 8 | 15 | 1240 | 0.041 | 3000 | 0.6 | 3.5 | 5.0 | | EEUFM1A681L () | 200 | 1000 |
| | 1000 | 8 | 20 | 1560 | 0.030 | 4000 | 0.6 | 3.5 | 5.0 | | EEUFM1A102L () | 200 | 1000 |
| | 680 | 10 | 12.5 | 1290 | 0.038 | 4000 | 0.6 | 5.0 | 5.0 | | EEUFM1A681 () | 200 | 500 |
| | 1000 | 10 | 16 | 1790 | 0.026 | 4000 | 0.6 | 5.0 | 5.0 | | EEUFM1A102 () | 200 | 500 |
| | 1200 | 10 | 20 | 2180 | 0.019 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM1A122 () | 200 | 500 |
| | 1500 | 10 | 25 | 2470 | 0.018 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM1A152L () | 200 | 500 |
| | 2200 | 12.5 | 20 | 2600 | 0.018 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM1A222 () | 200 | 500 |
| | 3300 | 12.5 | 25 | 3190 | 0.015 | 7000 | 0.6 | 5.0 | 5.0 | | EEUFM1A332 () | 200 | 500 |
| | 3900 | 12.5 | 30 | 3630 | 0.013 | 7000 | 0.8 | 5.0 | | | EEUFM1A392L | 100 | |
| | 4700 | 12.5 | 35 | 3750 | 0.012 | 7000 | 0.8 | 5.0 | | | EEUFM1A472L | 100 | |
| | 3900 | 16 | 20 | 3300 | 0.017 | 5000 | 0.8 | 7.5 | 7.5 | | EEUFM1A392S () | 100 | 250 |
| | 5600 | 16 | 25 | 3820 | 0.014 | 7000 | 0.8 | 7.5 | 7.5 | | EEUFM1A562 () | 100 | 250 |
| 16 | 68 | 5 | 11 | 280 | 0.300 | 2000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUFM1C680 () | 200 | 2000 |
| | 120 | 6 | 11.2 | 455 | 0.130 | 2000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUFM1C121 () | 200 | 2000 |
| | 330 | 8 | 11.5 | 950 | 0.056 | 3000 | 0.6 | 3.5 | 5.0 | | EEUFM1C331 () | 200 | 1000 |
| | 470 | 8 | 15 | 1240 | 0.041 | 3000 | 0.6 | 3.5 | 5.0 | | EEUFM1C471L () | 200 | 1000 |
| | 680 | 8 | 20 | 1560 | 0.030 | 4000 | 0.6 | 3.5 | 5.0 | | EEUFM1C681L () | 200 | 1000 |
| | 470 | 10 | 12.5 | 1290 | 0.038 | 4000 | 0.6 | 5.0 | 5.0 | | EEUFM1C471 () | 200 | 500 |
| | 680 | 10 | 16 | 1790 | 0.026 | 4000 | 0.6 | 5.0 | 5.0 | | EEUFM1C681 () | 200 | 500 |
| | 1000 | 10 | 20 | 2180 | 0.019 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM1C102 () | 200 | 500 |
| | 1200 | 10 | 25 | 2470 | 0.018 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM1C122L () | 200 | 500 |
| | 1500 | 12.5 | 20 | 2600 | 0.018 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM1C152 () | 200 | 500 |

When requesting taped product, please put the letter "B" between the "()". Lead wire pitch B=5mm, 7.5mm. The taping dimensions are explained on p.196 of our Catalog. Please use it as a reference guide.

■ Standard Products

| W.V. (V) | Cap (±20%) (μF) | Case size | | Specification | | | Lead size | | | | Part No | Min. Packaging Qty | |
|-------------|-----------------------|--------------|----------------|--|---|----------------------|-------------------|------------------|-----------------------------|----------------|----------------|--------------------|-----------------|
| | | Dia. (mm) | Length (mm) | Ripple current (100kHz) (+105°C) (mA) | Impedance (100kHz) (+20°C) (Ω) | Endurance (hours) | Lead Dia. (mm) | Lead space | | | | Long Lead (pcs) | Taping (pcs) |
| | | | | | | | | Straight (mm) | Taping * B (mm) * H (mm) | | | | |
| 16 | 2200 | 12.5 | 25 | 3190 | 0.015 | 7000 | 0.6 | 5.0 | 5.0 | | EEUFM1C222 () | 200 | 500 |
| | 2700 | 12.5 | 30 | 3630 | 0.013 | 7000 | 0.8 | 5.0 | | | EEUFM1C272L | 100 | |
| | 3300 | 12.5 | 35 | 3750 | 0.012 | 7000 | 0.8 | 5.0 | | | EEUFM1C332L | 100 | |
| | 2700 | 16 | 20 | 3300 | 0.017 | 5000 | 0.8 | 7.5 | 7.5 | | EEUFM1C272S() | 100 | 250 |
| | 3900 | 16 | 25 | 3820 | 0.014 | 7000 | 0.8 | 7.5 | 7.5 | | EEUFM1C392 () | 100 | 250 |
| 25 | 47 | 5 | 11 | 280 | 0.300 | 2000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUFM1E470 () | 200 | 2000 |
| | 100 | 6 | 11.2 | 455 | 0.130 | 2000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUFM1E101 () | 200 | 2000 |
| | 220 | 8 | 11.5 | 950 | 0.056 | 3000 | 0.6 | 3.5 | 5.0 | | EEUFM1E221 () | 200 | 1000 |
| | 330 | 8 | 15 | 1240 | 0.041 | 3000 | 0.6 | 3.5 | 5.0 | | EEUFM1E331L() | 200 | 1000 |
| | 470 | 8 | 20 | 1560 | 0.030 | 4000 | 0.6 | 3.5 | 5.0 | | EEUFM1E471L() | 200 | 1000 |
| | 330 | 10 | 12.5 | 1290 | 0.038 | 4000 | 0.6 | 5.0 | 5.0 | | EEUFM1E331 () | 200 | 500 |
| | 470 | 10 | 16 | 1790 | 0.026 | 4000 | 0.6 | 5.0 | 5.0 | | EEUFM1E471 () | 200 | 500 |
| | 680 | 10 | 20 | 2180 | 0.019 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM1E681 () | 200 | 500 |
| | 820 | 10 | 25 | 2470 | 0.018 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM1E821L() | 200 | 500 |
| | 1000 | 12.5 | 20 | 2600 | 0.018 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM1E102 () | 200 | 500 |
| | 1500 | 12.5 | 25 | 3190 | 0.015 | 7000 | 0.6 | 5.0 | 5.0 | | EEUFM1E152 () | 200 | 500 |
| | 1800 | 12.5 | 30 | 3630 | 0.013 | 7000 | 0.8 | 5.0 | | | EEUFM1E182L | 100 | |
| | 2200 | 12.5 | 35 | 3750 | 0.012 | 7000 | 0.8 | 5.0 | | | EEUFM1E222L | 100 | |
| | 1800 | 16 | 20 | 3300 | 0.017 | 5000 | 0.8 | 7.5 | 7.5 | | EEUFM1E182S() | 100 | 250 |
| 2700 | 16 | 25 | 3820 | 0.014 | 7000 | 0.8 | 7.5 | 7.5 | | EEUFM1E272 () | 100 | 250 | |
| 35 | 33 | 5 | 11 | 280 | 0.300 | 2000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUFM1V330 () | 200 | 2000 |
| | 68 | 6 | 11.2 | 455 | 0.130 | 2000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUFM1V680 () | 200 | 2000 |
| | 150 | 8 | 11.5 | 950 | 0.056 | 3000 | 0.6 | 3.5 | 5.0 | | EEUFM1V151 () | 200 | 1000 |
| | 220 | 8 | 15 | 1240 | 0.041 | 3000 | 0.6 | 3.5 | 5.0 | | EEUFM1V221L() | 200 | 1000 |
| | 330 | 8 | 20 | 1560 | 0.030 | 4000 | 0.6 | 3.5 | 5.0 | | EEUFM1V331L() | 200 | 1000 |
| | 220 | 10 | 12.5 | 1290 | 0.038 | 4000 | 0.6 | 5.0 | 5.0 | | EEUFM1V221 () | 200 | 500 |
| | 330 | 10 | 16 | 1790 | 0.026 | 4000 | 0.6 | 5.0 | 5.0 | | EEUFM1V331 () | 200 | 500 |
| | 470 | 10 | 20 | 2180 | 0.019 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM1V471 () | 200 | 500 |
| | 560 | 10 | 25 | 2470 | 0.018 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM1V561L() | 200 | 500 |
| | 680 | 12.5 | 20 | 2600 | 0.018 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM1V681 () | 200 | 500 |
| | 1000 | 12.5 | 25 | 3190 | 0.015 | 7000 | 0.6 | 5.0 | 5.0 | | EEUFM1V102 () | 200 | 500 |
| | 1200 | 12.5 | 30 | 3630 | 0.013 | 7000 | 0.8 | 5.0 | | | EEUFM1V122L | 100 | |
| | 1500 | 12.5 | 35 | 3750 | 0.012 | 7000 | 0.8 | 5.0 | | | EEUFM1V152L | 100 | |
| | 1200 | 16 | 20 | 3300 | 0.017 | 5000 | 0.8 | 7.5 | 7.5 | | EEUFM1V122S() | 100 | 250 |
| 1800 | 16 | 25 | 3820 | 0.014 | 7000 | 0.8 | 7.5 | 7.5 | | EEUFM1V182 () | 100 | 250 | |
| 50 | 22 | 5 | 11 | 250 | 0.340 | 2000 | 0.5 | 2.0 | 5.0 | 2.5 | EEUFM1H220 () | 200 | 2000 |
| | 56 | 6 | 11.2 | 405 | 0.140 | 2000 | 0.5 | 2.5 | 5.0 | 2.5 | EEUFM1H560 () | 200 | 2000 |
| | 100 | 8 | 11.5 | 870 | 0.061 | 3000 | 0.6 | 3.5 | 5.0 | | EEUFM1H101 () | 200 | 1000 |
| | 120 | 8 | 15 | 1140 | 0.045 | 3000 | 0.6 | 3.5 | 5.0 | | EEUFM1H121L() | 200 | 1000 |
| | 180 | 8 | 20 | 1430 | 0.033 | 4000 | 0.6 | 3.5 | 5.0 | | EEUFM1H181L() | 200 | 1000 |

When requesting taped product, please put the letter "B" between the "()". Lead wire pitch B=5mm, 7.5mm. The taping dimensions are explained on p.196 of our Catalog. Please use it as a reference guide.

■ Standard Products

| W.V. (V) | Cap (±20%) (μF) | Case size | | Specification | | | Lead size | | | | Part No | Min.Packaging Qty | | |
|-------------|-----------------------|--------------|----------------|---|--|---------------------------|----------------------|------------------|-------------|----------------|-----------------|-----------------------|-----------------|-----|
| | | Dia. (mm) | Length (mm) | Ripple current (100kHz) (+105°C) (mA) | Imped- ance (100kHz) (+20°C) (Ω) | Endur- ance (hours) | Lead Dia. (mm) | Lead space | | | | Long Lead (pcs) | Taping (pcs) | |
| | | | | | | | | Straight (mm) | Taping | | | | | |
| | | | | | | | * B (mm) | | * H (mm) | | | | | |
| 50 | 150 | 10 | 12.5 | 1170 | 0.042 | 4000 | 0.6 | 5.0 | 5.0 | | EEUFM1H151 () | 200 | 500 | |
| | 220 | 10 | 16 | 1650 | 0.030 | 4000 | 0.6 | 5.0 | 5.0 | | EEUFM1H221 () | 200 | 500 | |
| | 270 | 10 | 20 | 1890 | 0.023 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM1H271 () | 200 | 500 | |
| | 330 | 10 | 25 | 2150 | 0.022 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM1H331L () | 200 | 500 | |
| | 470 | 12.5 | 20 | 2260 | 0.022 | 5000 | 0.6 | 5.0 | 5.0 | | EEUFM1H471 () | 200 | 500 | |
| | 560 | 12.5 | 25 | 2660 | 0.018 | 7000 | 0.6 | 5.0 | 5.0 | | EEUFM1H561 () | 200 | 500 | |
| | 680 | 12.5 | 30 | 3160 | 0.016 | 7000 | 0.8 | 5.0 | | | EEUFM1H681L | 100 | | |
| | 820 | 16 | 12.5 | 35 | 3270 | 0.014 | 7000 | 0.8 | 5.0 | | | EEUFM1H821L | 100 | |
| | | | 20 | 2870 | 0.019 | 5000 | 0.8 | 7.5 | 7.5 | | | EEUFM1H821S () | 100 | 250 |
| 1000 | 16 | 25 | 3320 | 0.016 | 7000 | 0.8 | 7.5 | 7.5 | | EEUFM1H102 () | 100 | 250 | | |

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