

# Monolithic Crystal Filters

SMI

## UM-1/HLF & UM-1S/HLF FAMILY

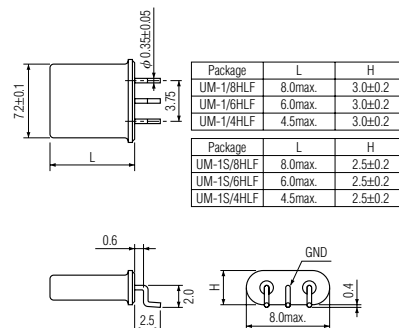
## STANDARD SMD MCF

### STANDARD SPECIFICATIONS

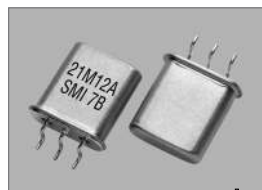
| Part number   | Nominal Frequency<br>fo                                  | Passband min. |       | Stopband max. |       | Attention Guaranteed min. |                                | Ripple max. | Loss max. | Terminating Impedance | Coupling Capacitor | Operating Temperature | No. of Pole |
|---------------|----------------------------------------------------------|---------------|-------|---------------|-------|---------------------------|--------------------------------|-------------|-----------|-----------------------|--------------------|-----------------------|-------------|
|               | (MHz)                                                    | (dB)          | (kHz) | (dB)          | (kHz) | (dB)                      | (kHz)                          | (dB)        | (dB)      | (Ω/pF)                | (pF)               | (°C)                  |             |
| 21M7.5A(HLF)  | 21.4                                                     | 3             | ±3.75 | 20            | ±18.0 | 35<br>50                  | +350 to +1000<br>-200 to -1000 | 0.5         | 1.5       | 850/6.0               | —                  | -30 to +80            | 2           |
| 21M7.5B(HLF)  | 21.4                                                     | 3             | ±3.75 | 40            | ±14.0 | 65<br>80                  | +350 to +1000<br>-200 to -1000 | 1.0         | 2.5       | 850/5.0               | 16                 | -30 to +80            | 4 (2 pcs.)  |
| 21M12A(HLF)   | 21.4                                                     | 3             | ±6.0  | 20            | ±25.0 | 35<br>50                  | +350 to +1000<br>-200 to -1000 | 0.5         | 1.5       | 1200/3.0              | —                  | -30 to +80            | 2           |
| 21M12B(HLF)   | 21.4                                                     | 3             | ±6.0  | 40            | ±20.0 | 65<br>80                  | +350 to +1000<br>-200 to -1000 | 1.0         | 2.0       | 1200/2.5              | 10.5               | -30 to +80            | 4 (2 pcs.)  |
| 21M15A(HLF)   | 21.4                                                     | 3             | ±7.5  | 18            | ±25.0 | 35<br>50                  | +350 to +1000<br>-200 to -1000 | 0.5         | 1.5       | 1500/2.5              | —                  | -30 to +80            | 2           |
| 21M15B(HLF)   | 21.4                                                     | 3             | ±7.5  | 40            | ±25.0 | 65<br>80                  | +350 to +1000<br>-200 to -1000 | 1.0         | 2.0       | 1500/2.0              | 8                  | -30 to +80            | 4 (2 pcs.)  |
| 21M30A(HLF)   | 21.4                                                     | 3             | ±15.0 | 15            | ±45.0 | 35<br>45                  | +350 to +1000<br>-300 to -1000 | 0.5         | 1.5       | 1500/1.0              | —                  | -30 to +80            | 2           |
| 21M30B(HLF)   | 21.4                                                     | 3             | ±15.0 | 40            | ±50.0 | 65<br>80                  | +350 to +1000<br>-250 to -1000 | 1.0         | 2.0       | 2000/0.5              | 3                  | -30 to +80            | 4 (2 pcs.)  |
| 45M7.5A(HLF)  | 45                                                       | 3             | ±3.75 | 10            | ±12.5 | 65                        | -910                           | 1.0         | 2.0       | 200/4.0               | —                  | -30 to +80            | 2           |
| 45M7.5B(HLF)  | 45                                                       | 3             | ±3.75 | 30            | ±12.5 | 90                        | ±900 to ±1000                  | 1.0         | 4.0       | 350/6.5               | 18                 | -30 to +80            | 4 (2 pcs.)  |
| 45M15A(HLF)   | 45                                                       | 3             | ±7.5  | 15            | ±25.0 | 35<br>65                  | +900 to +1000<br>-900 to -1000 | 1.0         | 2.0       | 650/3.0               | —                  | -30 to +80            | 2           |
| 45M15B(HLF)   | 45                                                       | 3             | ±7.5  | 30            | ±25.0 | 90                        | ±900 to ±1000                  | 1.0         | 3.0       | 650/3.0               | 9                  | -30 to +80            | 4 (2 pcs.)  |
| 45M30A(HLF)   | 45                                                       | 3             | ±15.0 | 15            | ±60.0 | 35<br>65                  | +900 to +1000<br>-900 to -1000 | 1.5         | 2.5       | 1200/0                | —                  | -30 to +80            | 2           |
| 45M30B(HLF)   | 45                                                       | 3             | ±15.0 | 30            | ±50.0 | 80                        | ±900 to ±1000                  | 1.0         | 3.0       | 1200/0.7              | 3.5                | -30 to +80            | 4 (2 pcs.)  |
| 45M7.5A3(HLF) | 45 (3rd OT)                                              | 3             | ±3.75 | 10            | ±12.5 | 35                        | ±910                           | 1.0         | 2.0       | 2000/-0.4             | —                  | -30 to +80            | 2           |
| 45M7.5B3(HLF) | 45 (3rd OT)                                              | 3             | ±3.75 | 30            | ±12.5 | 75                        | ±910                           | 1.0         | 4.0       | 3000/-0.3             | -0.1               | -30 to +80            | 4 (2 pcs.)  |
| 45M15A3(HLF)  | 45 (3rd OT)                                              | 3             | ±7.5  | 15            | ±25.0 | 35                        | ±910                           | 1.0         | 2.0       | 4000/-0.7             | —                  | -30 to +80            | 2           |
| 45M15B3(HLF)  | 45 (3rd OT)                                              | 3             | ±7.5  | 30            | ±25.0 | 75                        | ±910                           | 1.0         | 4.0       | 4000/-0.8             | -1.0               | -30 to +80            | 4 (2 pcs.)  |
| P/N           | Contact us for other frequencies or other specifications |               |       |               |       |                           |                                |             |           |                       |                    |                       |             |

### PACKAGE DATA

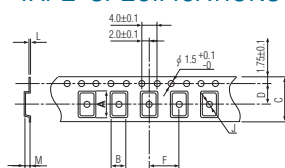
| Item                  | Package | UM-1 / 8HLF<br>UM-1S / 8HLF | UM-1 / 6HLF<br>UM-1S / 6HLF | UM-1 / 4HLF<br>UM-1S / 4HLF |
|-----------------------|---------|-----------------------------|-----------------------------|-----------------------------|
| Cover                 |         | Metal                       | Metal                       | Metal                       |
| Base                  |         | Metal                       | Metal                       | Metal                       |
| Sealing               |         | Resistance weld             | Resistance weld             | Resistance weld             |
| Terminal lead         |         | Alloy (FeNiCo)              | Alloy (FeNiCo)              | Alloy (FeNiCo)              |
| Terminal lead plating |         | Gold                        | Gold                        | Gold                        |
| RoHS                  |         | Compliant (Pb-free)         | Compliant (Pb-free)         | Compliant (Pb-free)         |



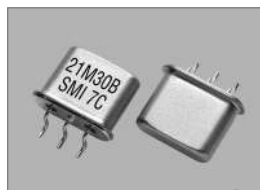
### UM-1/8HLF & UM-1S/8HLF



### Actual Size TAPE SPECIFICATIONS



### UM-1/6HLF & UM-1S/6HLF



### Actual Size for UM-1/8HLF & UM-1S/8HLF

| A   | B   | C    | D    | F    | J   | L   | M   | Reel Dia. | Qty/Reel |
|-----|-----|------|------|------|-----|-----|-----|-----------|----------|
| 8.9 | 8.2 | 24.0 | 11.5 | 12.0 | 1.5 | 0.4 | 3.3 | 330       | 1000pcs  |

### for UM-1/6HLF & UM-1S/6HLF

| A   | B   | C    | D    | F    | J   | L   | M   | Reel Dia. | Qty/Reel |
|-----|-----|------|------|------|-----|-----|-----|-----------|----------|
| 6.9 | 8.2 | 24.0 | 11.5 | 12.0 | 1.5 | 0.4 | 3.3 | 330       | 1000pcs  |

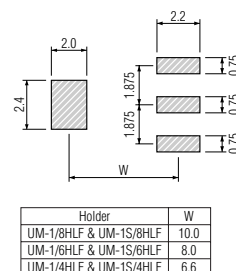
### for UM-1/4HLF & UM-1S/4HLF

| A   | B   | C    | D    | F    | J   | L   | M   | Reel Dia. | Qty/Reel |
|-----|-----|------|------|------|-----|-----|-----|-----------|----------|
| 5.4 | 8.2 | 24.0 | 11.5 | 12.0 | 1.5 | 0.4 | 3.3 | 330       | 1000pcs  |

### UM-1/4HLF & UM-1S/4HLF



### SOLDERING PATTERN



MCF