

• STANDARD MONOLITHIC CRYSTAL FILTERS

| Type | Frequency MHz | Pole | Case | Pass Band dB | Stop Band dB | Stop Band kHz | Ripple Max dB | Loss Max dB | Attenuation Guaranteed to ±kHz | Terminating Impedance ohms/pF |
|--------|---------------|------|--------|--------------|--------------|---------------|---------------|-------------|------------------------------------|-------------------------------|
| 10M7A | 10.700 | 2 | 49U | 3 ±3.75 | 20 ±18 | | 0.5 | 1.5 | 35 +300 ~ +1000 40 -200 ~ -1000 | 1.8K//6.0 |
| 10M7B | 10.700 | 4 | 49Ux2 | 3 ±3.75 | 40 ±14 | | 1.0 | 2.5 | 50 +300 ~ +1000 70 -200 ~ -1000 | 1.8K//5.0 Cc = 11pF |
| 10M7C | 10.700 | 6 | C | 3 ±3.75 | 45 ±8.75 | 65 ±12.5 | 2.0 | 3.5 | 65 ±12.5 ~ ±300 | 1.8K//5.0 |
| 10M7D | 10.700 | 8 | D | 3 ±3.75 | 65 ±8.75 | 90 ±12.5 | 2.0 | 4.0 | 90 ±12.5 ~ ±300 | 1.8K//5.0 |
| 10M12A | 10.700 | 2 | 49U | 3 ±6.0 | 20 ±25 | | 0.5 | 1.5 | 35 +300 ~ +1000 40 -200 ~ -1000 | 3.3K//1.5 |
| 10M12B | 10.700 | 4 | 49Ux2 | 3 ±6.0 | 40 ±20 | | 1.0 | 2.5 | 50 +300 ~ +1000 70 -200 ~ -1000 | 3.3K//1.5 Cc = 6pF |
| 10M12C | 10.700 | 6 | C | 3 ±6.0 | 50 ±14 | 65 ±20 | 2.0 | 3.0 | 65 ±20 ~ ±300 | 3.3K//2.0 |
| 10M12D | 10.700 | 8 | D | 6 ±6.0 | 65 ±14 | 90 ±20 | 2.0 | 3.5 | 90 ±20 ~ ±300 | 3.3K//2.0 |
| 10M15A | 10.700 | 2 | 49U | 3 ±7.5 | 18 ±25 | | 0.5 | 1.5 | 35 +300 ~ +1000 40 -200 ~ -1000 | 3.0K//2.0 |
| 10M15B | 10.700 | 4 | 49Ux2 | 3 ±7.5 | 40 ±25 | | 1.0 | 2.5 | 50 +300 ~ +1000 70 -200 ~ -1000 | 3.0K//2.0 Cc = 5pF |
| 10M15C | 10.700 | 6 | C | 3 ±7.5 | 50 ±17.5 | 65 ±25 | 2.0 | 3.0 | 65 ±25 ~ ±300 | 3.3K//1.5 |
| 10M15D | 10.700 | 8 | D | 6 ±7.5 | 65 ±17.5 | 90 ±25 | 2.0 | 3.5 | 90 ±25 ~ ±300 | 3.3K//1.5 |
| 10M20A | 10.700 | 2 | 49U | 3 ±10.0 | 18 ±34 | | 0.5 | 1.5 | 35 +300 ~ +1000 40 -200 ~ -1000 | 3.9K//1.0 |
| 10M20B | 10.700 | 4 | 49Ux2 | 3 ±10.0 | 40 ±34 | | 1.0 | 2.5 | 50 +300 ~ +1000 70 -200 ~ -1000 | 3.9K//1.0 Cc = 3pF |
| 16M15A | 16.900 | 2 | 49U | 3 ±7.5 | 18 ±25 | | 0.5 | 1.5 | 35 +300 ~ +1000 40 -200 ~ -1000 | 1.8K//2.0 |
| 16M15B | 16.900 | 4 | 49Ux2 | 3 ±7.5 | 40 ±25 | | 1.0 | 2.5 | 50 +300 ~ +1000 70 -200 ~ -1000 | 1.8K//1.5 Cc = 7.5pF |
| 16M15C | 16.900 | 6 | C | 3 ±7.5 | 45 ±17.5 | 65 ±25 | 2.0 | 3.0 | 65 ±25 ~ ±300 | 1.8K//1.5 |
| 16M15D | 16.900 | 8 | D | 3 ±7.5 | 65 ±17.5 | 90 ±25 | 2.0 | 3.5 | 90 ±25 ~ ±300 | 1.8K//1.5 |
| 21M7A | 21.400 | 2 | HC80 | 3 ±3.75 | 20 ±18 | | 0.5 | 1.5 | 35 +350 ~ +1000 50 -200 ~ -1000 | 850//6.0 |
| 21M7B | 21.400 | 4 | HC80x2 | 3 ±3.75 | 40 ±14 | | 1.0 | 2.5 | 65 +350 ~ +1000 80 -200 ~ -1000 | 850//5.0 Cc = 16pF |
| 21M7C | 21.400 | 6 | CN | 3 ±3.75 | 45 ±8.75 | 65 ±12.5 | 2.0 | 3.0 | 65 ±12.5 ~ ±300 | 850//5.0 |
| 21M7D | 21.400 | 8 | CN | 3 ±3.75 | 65 ±9.0 | 90 ±12.5 | 2.0 | 4.0 | 90 ±12.5 ~ ±300 | 850//5.0 |
| 21M12A | 21.400 | 2 | HC80 | 3 ±6.0 | 20 ±25 | | 0.5 | 1.5 | 35 +350 ~ +1000 50 -200 ~ -1000 | 1.2K//3.0 |
| 21M12B | 21.400 | 4 | HC80x2 | 3 ±6.0 | 40 ±20 | | 1.0 | 2.5 | 65 +350 ~ +1000 80 -200 ~ -1000 | 1.2K//2.5 Cc = 10.5pF |
| 21M12C | 21.400 | 6 | CN | 3 ±6.0 | 45 ±14 | 65 ±20 | 2.0 | 2.5 | 65 ±20 ~ ±300 | 1.2K//2.5 |
| 21M12D | 21.400 | 8 | CN | 3 ±6.0 | 65 ±14 | 90 ±20 | 2.0 | 3.0 | 90 ±20 ~ ±300 | 1.2K//2.5 |
| 21M15A | 21.400 | 2 | HC80 | 3 ±7.5 | 18 ±25 | | 0.5 | 1.5 | 35 +350 ~ +1000 50 -200 ~ -1000 | 1.5K//2.0 |
| 21M15B | 21.400 | 4 | HC80x2 | 3 ±7.5 | 40 ±25 | | 1.0 | 2.5 | 65 +350 ~ +1000 80 -200 ~ -1000 | 1.5K//2.0 Cc = 8pF |
| 21M15C | 21.400 | 6 | CN | 3 ±7.5 | 45 ±17.5 | 65 ±25 | 2.0 | 2.5 | 65 ±25 ~ ±300 | 1.5K//2.0 |
| 21M15D | 21.400 | 8 | CN | 3 ±7.5 | 65 ±17.5 | 90 ±25 | 2.0 | 3.0 | 90 ±25 ~ ±300 | 1.5K//2.0 |
| 21M20A | 21.400 | 2 | HC80 | 3 ±10.0 | 18 ±34 | | 0.5 | 2.0 | 35 +350 ~ +1000 50 -200 ~ -1000 | 1.8K//1.5 |
| 21M20B | 21.400 | 4 | HC80x2 | 3 ±10.0 | 40 ±34 | | 1.0 | 2.5 | 65 +350 ~ +1000 80 -200 ~ -1000 | 1.8K//1.5 Cc = 5pF |
| 21M30A | 21.400 | 2 | HC80 | 3 ±15.0 | 15 ±45 | | 0.5 | 1.5 | 35 +350 ~ +1000 50 -300 ~ -1000 | 3.0K//0.5 |
| 21M30B | 21.400 | 4 | HC80x2 | 3 ±15.0 | 40 ±50 | | 1.0 | 2.5 | 65 +350 ~ +1000 80 -300 ~ -1000 | 3.0K//0.5 Cc = 3pF |
| 45F15A | 45.000 | 2 | HC80 | 3 ±7.5 | 15 ±25 | | 1.0 | 2.0 | 35 +500 ~ +1000 40 -200 ~ -1000 | 650//4.5 |
| 45F15B | 45.000 | 4 | HC80x2 | 3 ±7.5 | 30 ±25 | | 1.0 | 3.0 | 70 +500 ~ +1000 -200 ~ -1000 | 650//1.5 Cc = 9pF |
| 45F20A | 45.000 | 2 | HC80 | 3 ±10.0 | 15 ±34 | | 1.0 | 2.0 | 35 +500 ~ +1000 40 -200 ~ -1000 | 700//2.5 |
| 45F20B | 45.000 | 4 | HC80x2 | 3 ±10.0 | 40 ±48 | | 1.0 | 3.0 | 70 +500 ~ +1000 -200 ~ -1000 | 700//1.5 Cc = 6.5pF |
| 45F30A | 45.000 | 2 | HC80 | 3 ±15.0 | 15 ±50 | | 1.0 | 2.0 | 35 +500 ~ +1000 -300 ~ -1000 | 800//1.5 |
| 45F30B | 45.000 | 4 | HC80x2 | 3 ±15.0 | 40 ±60 | | 1.0 | 3.0 | 70 +500 ~ +1000 -300 ~ -1000 | 800//1.0 Cc = 5pF |
| 45M15A | 45.000 | 2 | HC80 | 3 ±7.5 | 18 ±28 | | 1.0 | 2.0 | 35 +500 ~ +1000 -200 ~ -1000 | 4K//1.0 |
| 45M15B | 45.000 | 4 | HC80x2 | 3 ±7.5 | 40 ±30 | | 1.0 | 3.0 | 70 +500 ~ +1000 -200 ~ -1000 | 4K//1.0 Cc = -1pF |
| 45M20A | 45.000 | 2 | HC80 | 3 ±10.0 | 15 ±30 | | 1.0 | 2.0 | 35 +500 ~ +1000 -200 ~ -1000 | 5K//1.0 |
| 45M20B | 45.000 | 4 | HC80x2 | 3 ±10.0 | 35 ±40 | | 1.0 | 3.0 | 70 +500 ~ +1000 -200 ~ -1000 | 5K//1.0 Cc = -1.5pF |
| 70M15A | 70.000 | 2 | HC80 | 3 ±7.5 | 15 ±30 | | 1.0 | 2.0 | 35 +500 ~ +1000 -200 ~ -1000 | 2.0K//1.0 |
| 70M15B | 70.000 | 4 | HC80x2 | 3 ±7.5 | 25 ±25 | | 1.0 | 3.0 | 70 +500 ~ +1000 -200 ~ -1000 | 2.0K//1.0 Cc = -1pF |
| 70M20A | 70.000 | 2 | HC80 | 3 ±10.0 | 15 ±40 | | 1.0 | 2.0 | 35 +500 ~ +1000 -200 ~ -1000 | 2.5K//1.0 |
| 70M20B | 70.000 | 4 | HC80x2 | 3 ±10.0 | 35 ±40 | | 1.0 | 3.0 | 70 +500 ~ +1000 -200 ~ -1000 | 2.5K//1.0 Cc = -1pF |

All specifications subject to change without notice. Rev. 6/1/04 Note: Operating Temperature -20°C to +70°C