

A collection of various electronic components, including integrated circuits, capacitors, and resistors, scattered on a white surface. The components include several black and silver integrated circuits with labels like 'PMT 9420', 'PMT 9425', and 'PMT 9426', as well as smaller components like capacitors and resistors.

manufactures a wide range of SMD type crystals used in many applications. Space requirements have become critical as more and more technology must be put in a smaller area. Crystal packages are available to accommodate all applications including Microcontrollers, Personal Computers, Modem Chipsets, Video Applications and Local Area Networks.

Frequency Range : 1.78 MHz to 350.0 MHz
Calibration Tolerance @ 25°C : ± 50 ppm
Operating Temp Range : -20°C to +70°C
Calibration Tolerance
over Temp Range : ± 50 ppm
Co (Shunt Capacitance): 7.0 pF Max
Aging : ± 3 ppm/year
Drive Level : 100 μ W
C_L (Load Capacitance): Specified
Rs : Specified by frequency and package

A= ± 5 ppm
B = ± 20 ppm
C = ± 30 ppm
D = ± 50 ppm
E= ± 100 ppm
S= SPECIAL

A. 0°C to 70°C
B. -20°C to 70°C
C. -30°C to 80°C
D. -40°C to 85°C
E. -55°C to 105°C
S. SPECIAL

[illegible]

Technical drawing of a mechanical part showing dimensions in millimeters. The drawing includes a side view and a cross-sectional view.

Side View Dimensions:

- Overall length: $8.00 \pm .203$
- Distance from left face to center of first hole: $5.00 \pm .10$
- Distance from center of first hole to center of second hole: 1.58
- Distance from center of second hole to right face: 1.58
- Overall width: $4.5 \pm .203$
- Radius of fillet: $R.203$
- Thickness of part: $1.78 \pm .203$

Cross-sectional View Dimensions:

- Distance between centers of holes: 6.50
- Radius of fillet: $R.2.40$
- Distance from center of hole to bottom face: 1.9

[illegible]

SURFACE MOUNT CRYSTALS HAG SERIES

HC-49/U SMD GULL WING CRYSTALS

APPLICATIONS:

LAN/ MOBILE COMM/MICROCONTROLLERS/VCXO/TCXO/MODEM CHIPSETS

Typical Electrical Characteristics

Frequency Range : 1.78 MHz to 350.0 MHz

Calibration Tolerance @ 25°C : ± 50 ppm

Operating Temp Range : -20°C to +70°C

Calibration Tolerance

over Temp Range : ± 50 ppm

Co (Shunt Capacitance): 7.0 pF Max

Aging : ± 3 ppm/year

Drive Level : 100 μ W

Frequency Tolerance

A = ± 10 ppm

B = ± 25 ppm

C = ± 50 ppm

D = ± 100 ppm

S = SPECIAL

Operating Temp Range

A. 0°C to 70°C

B. -20°C to 70°C

C. -30°C to 80°C

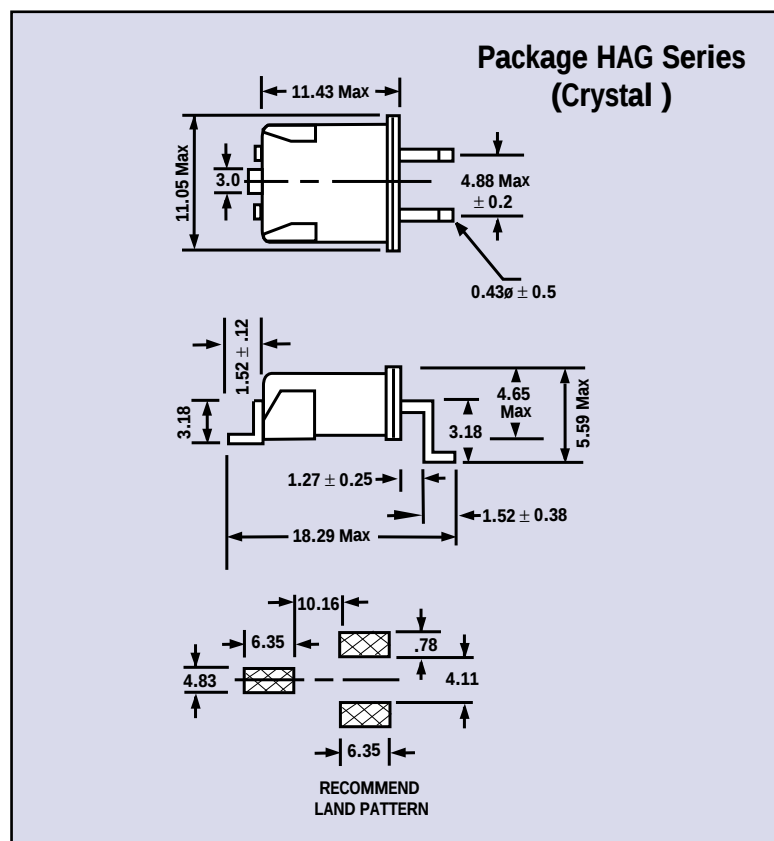
D. -40°C to 85°C

E. -55°C to 105°C

S. SPECIAL

SERIES RESISTANCE

1.780-2.000 MHz	Fund	300 ohms
2.000-3.200 MHz	Fund	175 ohms
3.200-4.000 MHz	Fund	150 ohms
4.000-6.000 MHz	Fund	100 ohms
6.000-10.00 MHz	Fund	80 ohms
10.00-15.00 MHz	Fund	40 ohms
15.00-45.00 MHz	Fund	30 ohms
30.00-80.00 MHz	Fund	60 ohms
50.00-150.0 MHz	3rd	80 ohms
150.0-350.0 MHz	3rd	90 ohms



SURFACE MOUNT CRYSTALS UM SERIES

APPLICATIONS: MICROWAVE/ TELECOM/VCXO/TCXO/MOBILE COMMUNICATIONS

Typical Electrical Characteristics

Frequency Range : 8.0 MHz to 350.0 MHz

Calibration Tolerance @ 25°C : ± 25 ppm

Operating Temp Range : -20°C to +70°C

Calibration Tolerance

over Temp Range : ± 25 ppm

Co (Shunt Capacitance): 7.0 pF Max

Aging : ± 3 ppm/year

Drive Level : 100 μ W

C_L (Load Capacitance) : Specified

Frequency Tolerance

A = ± 10 ppm

B = ± 25 ppm

C = ± 50 ppm

D = ± 100 ppm

S = SPECIAL

Operating Temp Range

A. 0°C to 70°C

B. -20°C to 70°C

C. -30°C to 80°C

D. -40°C to 85°C

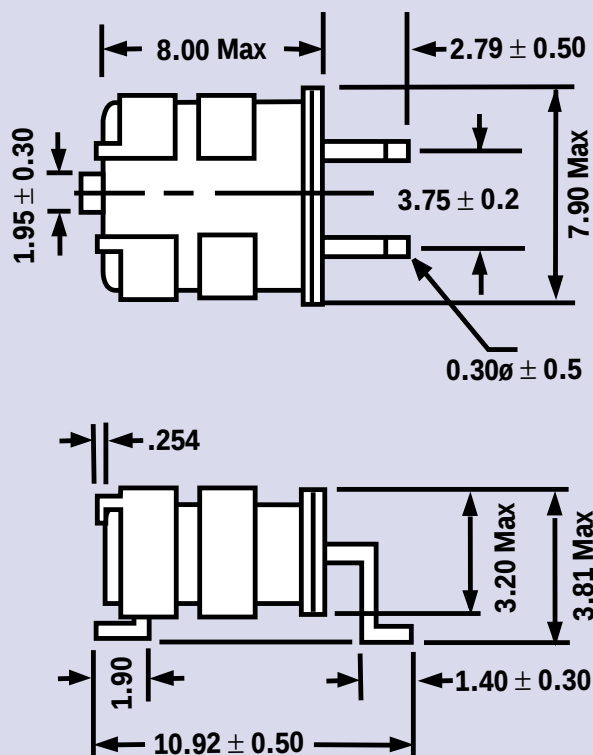
E. -55°C to 105°C

S. SPECIAL

SERIES RESISTANCE

8.0-12.000 MHz	Fund	50 ohms
12.000-18.00 MHz	Fund	40 ohms
18.00-30.000 MHz	Fund	30 ohms
30.000-50.00 MHz	Fund	100 ohms
30.00-80.00 MHz	3rd	60 ohms
60.00-150.00 MHz	5th	80 ohms
70.00-350.0 MHz	7th	90 ohms

Package UM Series (Crystal)



SURFACE MOUNT CRYSTALS C7 SERIES

5 X 7 CERAMIC SMD CRYSTALS

APPLICATIONS: LAN/ MOBILE COMMUNICATIONS//MODEM CHIPSETS

Typical Electrical Characteristics

Frequency Range : 8.0 MHz to 150.0 MHz

Calibration Tolerance @ 25°C : ± 50 ppm

Operating Temp Range : -20°C to +70°C

Calibration Tolerance

over Temp Range : ± 50 ppm

Co (Shunt Capacitance): 7.0 pf Max

Aging : ± 2 ppm/year

Drive Level : 100 μ W

C_L (Load Capacitance): Specified

Frequency Tolerance

A = ± 10 ppm

B = ± 25 ppm

C = ± 50 ppm

D = ± 100 ppm

S = SPECIAL

Operating Temp Range

A. 0°C to 70°C

B. -20°C to 70°C

C. -30°C to 80°C

D. -40°C to 85°C

E. -55°C to 105°C

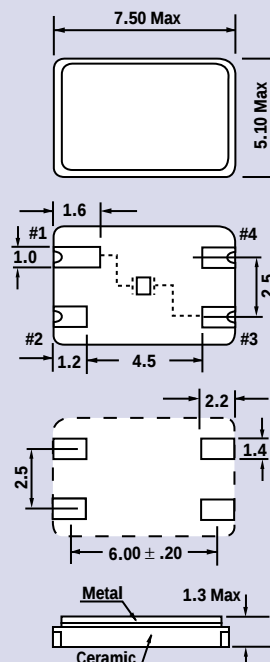
S. SPECIAL

SERIES

RESISTANCE

8.0-16.000 MHz	Fund	60 ohms
16.000-50.00 MHz	Fund	40 ohms
30.00-90.000 MHz	3rd Overtone	60 ohms
90.000-160.00 MHz	5th Overtone	80 ohms

Package C7 Series (SMD Crystal)



SURFACE MOUNT CRYSTALS P2 SERIES

PLASTIC SMD CRYSTALS

APPLICATIONS: PERSONAL COMPUTERS/ MOBILE COMMUNICATIONS
/VIDEO APPLICATIONS/ MICROCONTROLLERS

Typical Electrical Characteristics

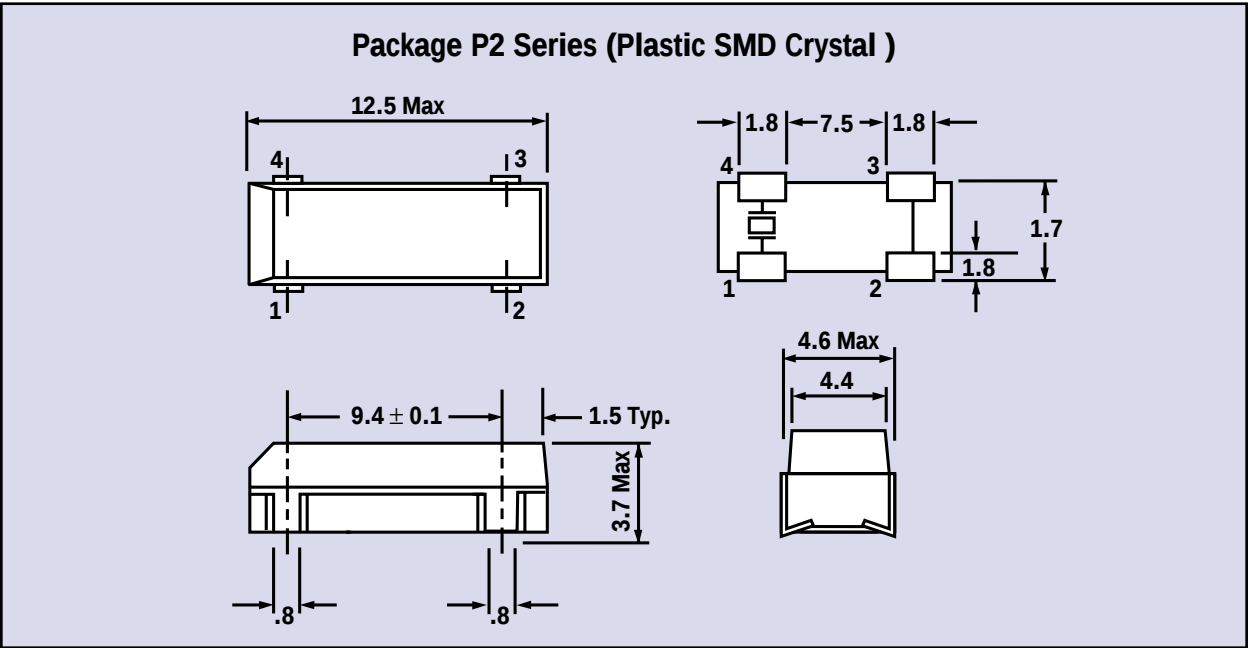
Frequency Range : 3.579545 MHz to 100.0 MHz
Calibration Tolerance @ 25°C : ± 50 ppm
Operating Temp Range : -20°C to +70°C
Calibration Tolerance
over Temp Range : ± 50 ppm
Co (Shunt Capacitance): 7.0 pF Max
Aging : ± 2 ppm/year
Drive Level : 100 μ W
CL (Load Capacitance): Specified

Frequency Tolerance
A = ± 10 ppm
B = ± 25 ppm
C = ± 50 ppm
D = ± 100 ppm
S = SPECIAL

Operating Temp Range
A. 0°C to 70°C
B. -20°C to 70°C
C. -30°C to 80°C
D. -40°C to 85°C
S. SPECIAL

SERIES RESISTANCE

3.57945-4.000 MHz	Fund	200 ohms
4.000-6.00 MHz	Fund	150 ohms
6.00-9.000 MHz	Fund	100 ohms
9.000-15.00 MHz	Fund	60 ohms
15.000-20.00 MHz	Fund	40 ohms
20.00-30.000 MHz	Fund	30 ohms
30.000-100.00 MHz	3rd Overtone	80 ohms



SURFACE MOUNT CRYSTALS C 8 SERIES

4.5 x 8 CERAMIC 2 PAD SMD CRYSTAL

APPLICATIONS: DISC DRIVES/PERSONAL COMPUTERS

Typical Electrical Characteristics

Frequency Range : 8.0 MHz to 80.0 MHz

Calibration Tolerance @ 25°C : ± 50 ppm

Operating Temp Range : -20°C to +70°C

Calibration Tolerance

over Temp Range : ± 50 ppm

Co (Shunt Capacitance): 7.0 pf Max

Aging : ± 2 ppm/year

Drive Level : 100 μ W

C_L (Load Capacitance): Specified

Frequency Tolerance

A = ± 10 ppm

B = ± 25 ppm

C = ± 50 ppm

D = ± 100 ppm

S = SPECIAL

Operating Temp Range

A. 0°C to 70°C

B. -20°C to 70°C

C. -30°C to 80°C

D. -40°C to 85°C

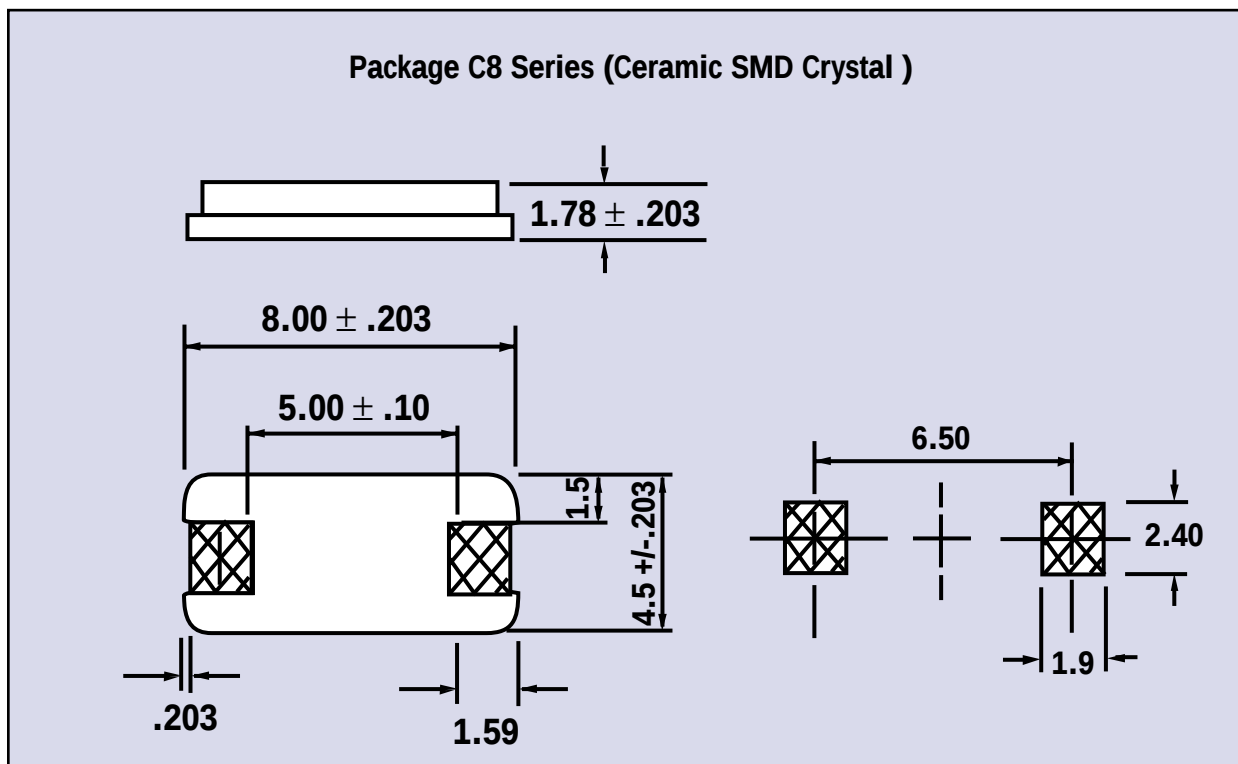
S. SPECIAL

SERIES RESISTANCE

8.0-16.0 MHz Fund 60 ohms

16.000-40.00 MHz Fund 40 ohms

28.00-80.000 MHz 3rd Overtone 60 ohms



SURFACE MOUNT CRYSTALS C6 SERIES

3.5 X 6.0 CERAMIC SMD CRYSTALS

APPLICATIONS: LAN / MOBILE COMMUNICATIONS/MODEM CHIPSETS

Typical Electrical Characteristics

Frequency Range : 10.0 MHz to 70.0 MHz

Calibration Tolerance @ 25°C : ± 100 ppm

Operating Temp Range : -20°C to +70°C

Calibration Tolerance

over Temp Range : ± 100 ppm

Co (Shunt Capacitance): 7.0 pF Max

Aging : ± 3 ppm/year

Drive Level : 100 μ W

C_L (Load Capacitance): Specified

Frequency Tolerance

A = ± 10 ppm

B = ± 25 ppm

C = ± 50 ppm

D = ± 100 ppm

S = SPECIAL

Operating Temp Range

A. 0°C to 70°C

B. -20°C to 70°C

C. -30°C to 80°C

D. -40°C to 85°C

S. SPECIAL

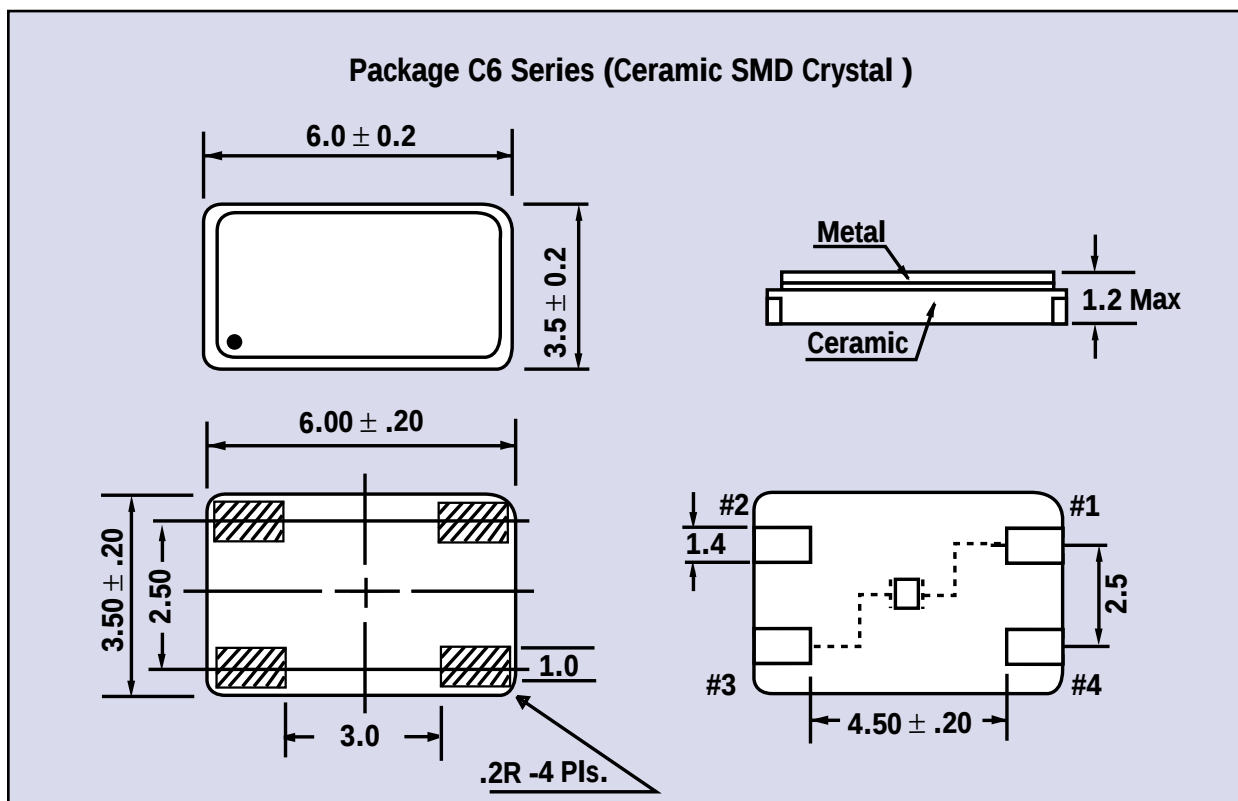
SERIES RESISTANCE

10.0-18.000 MHz Fund 60 ohms

18.000-40.00 MHz Fund 40 ohms

30.00-70.000 MHz 3rd Overtone 70 ohms

Package C6 Series (Ceramic SMD Crystal)



SURFACE MOUNT CRYSTALS C1 SERIES

5.5 X 11.5 CERAMIC SMD CRYSTALS

APPLICATIONS: MOBILE COMMUNICATIONS

Typical Electrical Characteristics

Frequency Range : 8.0 MHz to 70.0 MHz

Calibration Tolerance @ 25°C : ± 50 ppm

Operating Temp Range : -20°C to +70°C

Calibration Tolerance

over Temp Range : ± 50 ppm

Co (Shunt Capacitance): 7.0 pf Max

Aging : ± 2 ppm/year

Drive Level : 100 μ W

C_L (Load Capacitance): Specified

Frequency Tolerance

A = ± 10 ppm

B = ± 25 ppm

C = ± 50 ppm

D = ± 100 ppm

S = SPECIAL

Operating Temp Range

A. 0°C to 70°C

B. -20°C to 70°C

C. -30°C to 80°C

D. -40°C to 85°C

S. SPECIAL

SERIES RESISTANCE

8.0-16.000 MHz Fund 60 ohms

16.000-40.00 MHz Fund 40 ohms

28.00-70.000 MHz 3rd Overtone 60 ohms

Package C1 Series (Ceramic SMD Crystal)

