

SHOULDER

SPECIFICATION

| | |
|--------------|---------|
| Item: | CRYSTAL |
| Type: | SMD0503 |

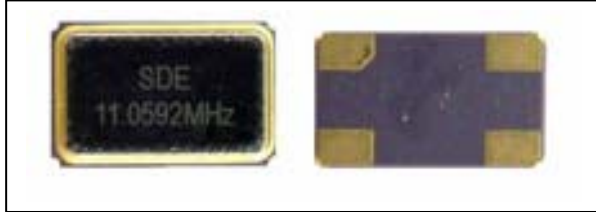




SMD0503 CRYSTAL

Scope

This specification shall cover the characteristics of SMD 5x3.2 crystal.
 Ultra small package
 Wide Frequency Range



| Electrical Specification | |
|-------------------------------|--------------------------------------|
| Parameter | Value |
| Nominal Frequency | 10.00 to 80.000 MHz |
| Frequency Tolerance (at 25°C) | ± 30 PPM (Maximum) |
| Frequency Stability | ±30 PPM (Maximum) |
| Oscillation Mode | Fundamental |
| Equivalent Series resistance | 50Ω |
| Drive Level | 1.0 mW (Maximum) |
| Operating Temperature Range | -20 to + 70°C Standard (or Optional) |
| Storage Temperature | -40 to + 85°C |
| Load Capacitance | 10 pF to Series |
| Shunt Capacitance | < 7 PF |
| Aging (at 25°C) | ± 3 ppM per year |
| Insulation Resistance | > 500 MΩ at DC 100V |

Mechanical Dimensions (All in mm) SMD0503

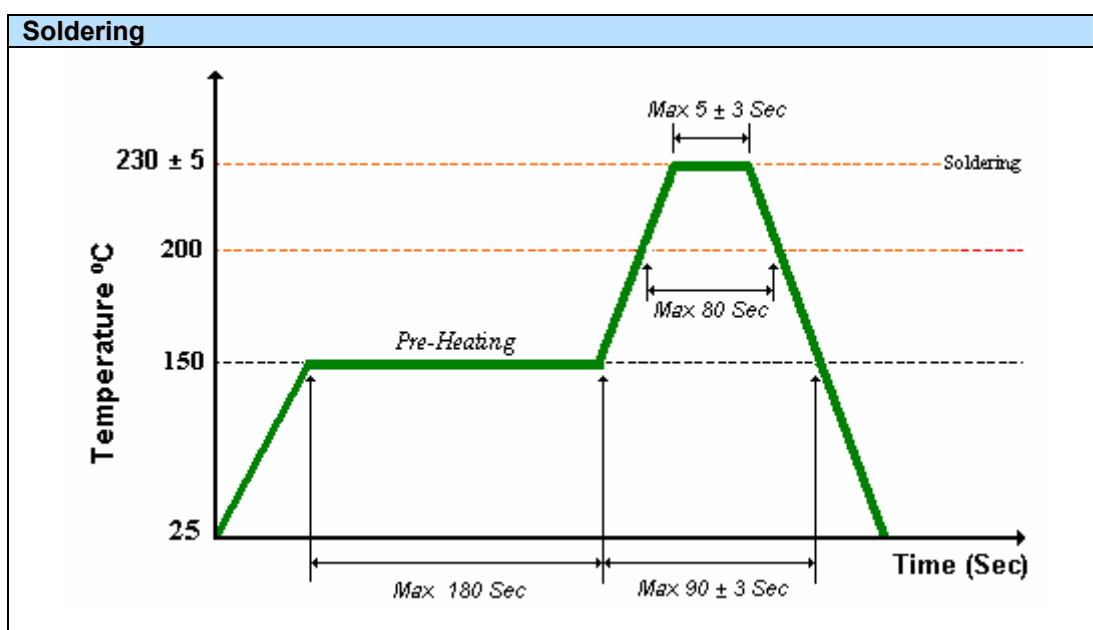
| Pin | Connection |
|-----|------------|
| 1 | Input |
| 2 | Ground |
| 3 | Output |
| 4 | Ground |



SMD0503 CRYSTAL

| Mechanical Specification | | | |
|--------------------------|-----------------|-----------------|---|
| | | Conditions | Results |
| 1. Vibration test | | | |
| | Frequency | 10 ~ 55Hz | Frequency and wave form of tested products must remain within specifications. |
| | Amplitude | 0.762mm | |
| | Sweep | 1.0 minute | |
| | Duration | 2 hours | |
| 2. Drop test | | | |
| | Method of drop | Natural drop | Frequency and wave form of tested products must remain within specifications. |
| | Dropping floor | Hard wood board | |
| | Height | 30cm | |
| | Number of drops | 3 times | |

| Environmental Specification | | | |
|-----------------------------|-------------------|----------------------------|--|
| | | Conditions | Results |
| 1. Temperature test | | | |
| Temperature cycling test | Steps of cycle | 1) at -55°C, 30 minutes | Frequency and wave form of tested products must remain within specifications. |
| | | 2) at +25°C, 10~15 minutes | |
| | | 3) at +85°C, 30 minutes | |
| 4) at +25°C, 10~15 minutes | | | |
| | Number of cycles | 3 times | |
| 2. Aging test | | | |
| | Temperature | +85°C ±20°C | Deviation of frequency must be less than ±3ppM. |
| | Length of test | 96 hours | |
| 3. Salt spray test | | | |
| | Temperature | +35°C ±2°C | There should be no stain on surface of products. |
| | Length of test | 48 hours | |
| | NaCl % | 5% | |
| 4. Humidity test | | | |
| | Temperature | +40°C ±2°C | a) Insulation resistance must be 500 MΩ/100 Vac minimum. b) Resistance and wave form must remain within specifications. |
| | Relative humidity | 90 ~ 95% | |
| | Length of test | 96 hours | |



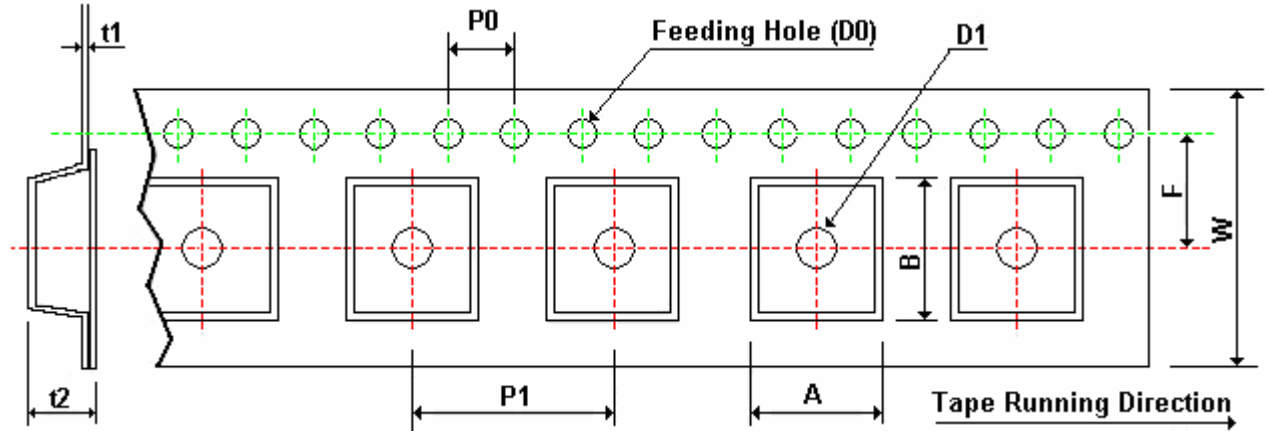


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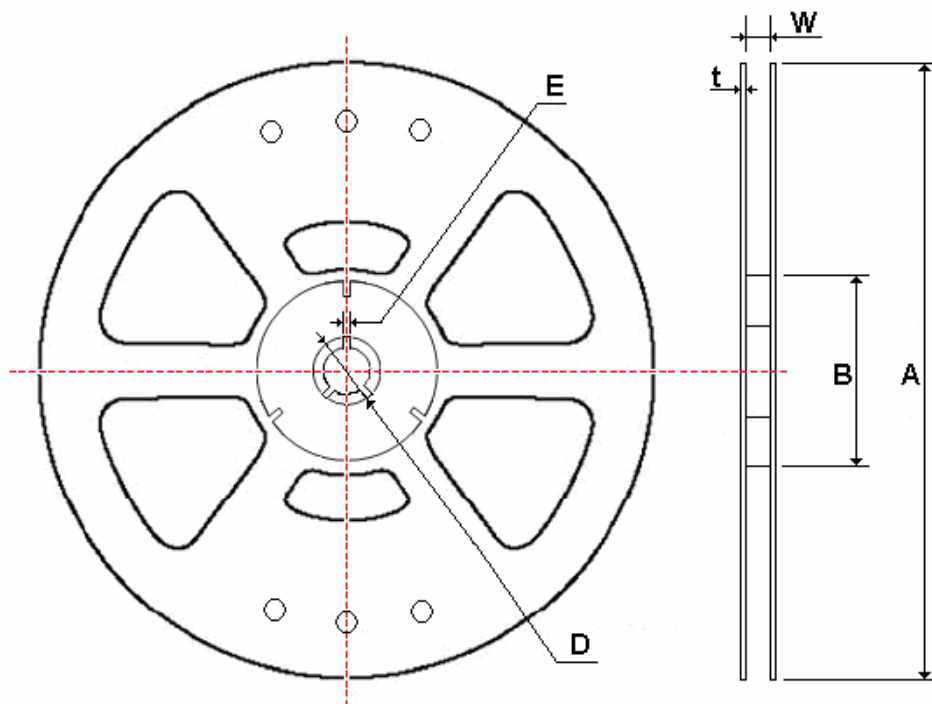
Tape Specifications (All in mm)

Reeling Quantity - 1000pcs / reel

Carrier Tape Dimensions

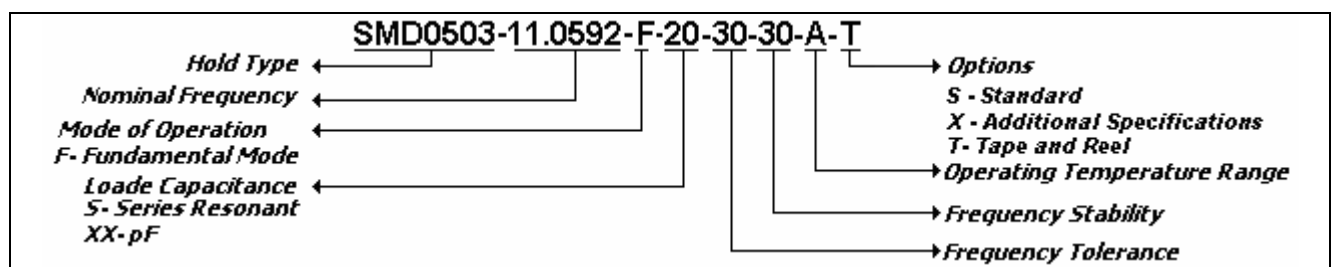


| W | F | P0 | P1 | D0 | D1 | t1 | t2 | A | B |
|------------|--------------|-------------|-------------|--------------|---------------|--------------|-------------|-------------|-----------|
| 16± 0.3 | 5.5± 0.05 | 4.0± 0.1 | 9.0± 0.1 | ∅1.5± 0.1 | ∅1.6± 0.25 | 0.3± 0.03 | 1.7± 0.1 | 4.2± 0.1 | 6± 0.1 |



| | |
|---|----------|
| A | ∅178±1.0 |
| B | ∅60±0.5 |
| D | ∅13.5 |
| E | 2±0.5 |
| W | 17.5 |
| t | 1.6max. |

SMD0503 CRYSTAL Part Numbering System (Example)





SMD0503 CRYSTAL

| SMD0503 | 11.0592 | F | 20 | 30 | 30 | A | T | |
|--|--|----------------|--|---------------------------------------|--|-----------------------------|---------------|---|
| ↕ | ↕ | ↕ | ↕ | ↕ | ↕ | ↕ | ↕ | |
| Type | Nominal Frequency (in MHz) | Vibration Mode | Load Capacitance | Frequency Tolerance | Frequency Stability | Operating Temperature Range | | Option (can be blank) |
| SMD0503 49S-SMD 49S2-SMD SMD0804 SMD0705 SMD0603 SMD0402 | Enter the nominal frequency (3 digits after dot) or up to last significant digit (different than zero) | F = Fund | S = Series Or enter load capacitance: 10 to 33 for parallel | Indicate the tolerance value in ± PPM | Indicate the stability over temperature range value in ± PPM | A | -20°C to 70°C | S= Standard X= Additional Specifications T= Tape and Reel |
| | | | | | | B | -10°C to 60°C | |
| | | | | | | C | 0°C to 50°C | |
| | | | | | | D | -30°C to 80°C | |
| | | | | | | E | -40°C to 85°C | |