

SMD QUARTZ CRYSTAL

SERIES SMD0503 (4 pad housing 5.0x3.2mm)

FEATURES

- + High reliability for low cost
- + LRT-TECHNOLOGY Inside (LRT is Low ESR Resonator-Technology)^[1]
- + Extended temperature range to -40/+125°C available
- + Our top quality promise / depth of production:
 - Only use of crystal blanks from our in-house production
 - Excellent product features guaranteed by multiple 100% tests
 - 100% quality monitoring from crystal raw material to the end product



GENERAL DATA

PB FREE / ROHS COMPLIANT

PARAMETERS	PRODUCT FEATURES AND CONDITIONS
SMD-CRYSTAL SERIES	SMD0503/4
NUMBER OF SOLDER PADS	4
FREQUENCY RANGE	8.0 ~ 54.0 MHz Fundamental 54.0 ~ 133.0 MHz 3 rd Overtone
FREQUENCY TOLERANCES AT 25°C	±8 ppm ~ ±50 ppm
LOAD CAPACITANCE (C _L)	Series or 6 pF ~ 50 pF
WORKING TEMPERATURE RANGES	0/+50°C ~ -40/+125°C
TEMPERATURE STABILITY	±8 ppm ~ ±50 ppm (see FREQUENCY STABILITY VS. TEMPERATURE table)
SHUNT CAPACITANCE (C ₀)	3 pF max.
DRIVE LEVEL Fundamental	100 µW typ. / 200 µW max. (300 µW available on request)
DRIVE LEVEL 3 rd Overtone	100 µW typ. / 200 µW max. (300 µW available on request)
AGING	±2 ppm per year standard (±1 ppm available as option)
INSULATION RESISTANCE	>500 MΩ DC/100V ±10%
STORAGE TEMPERATURE	-55°/+125°C
PRODUCT WEIGHT	0.054 g
MSL LEVEL	1
DELIVERY FORM	Tape and Reel (1.000 pcs per reel)
SELECT YOUR REQUIRED CRYSTAL (PRODUCT CONFIGURATOR)	REQUEST CRYSTAL SAMPLES (SAMPLE CONFIGURATOR)

Note:

1. LRT is optimized low ESR resonator design for fast and secure oscillation start-up
2. The reference temperature for all specified values and tests is +25°C.
3. Do not use cleaning baths operating at ultrasonic frequencies or ultrasonic welding processes.

FREQUENCY STABILITY VS. TEMPERATURE

	±8ppm	±10ppm	±15ppm	±20ppm	±30ppm	±50ppm
0°/+50°C	+	+	+	+	+	+
-10°/+60°C	+	+	+	+	+	+
0°/+70°C	+	+	+	+	+	+
-20°/+70°C		+	+	+	+	+
-40°/+85°C			+	+	+	+
-40°/+105°C					+	+
-40°/+125°C						+

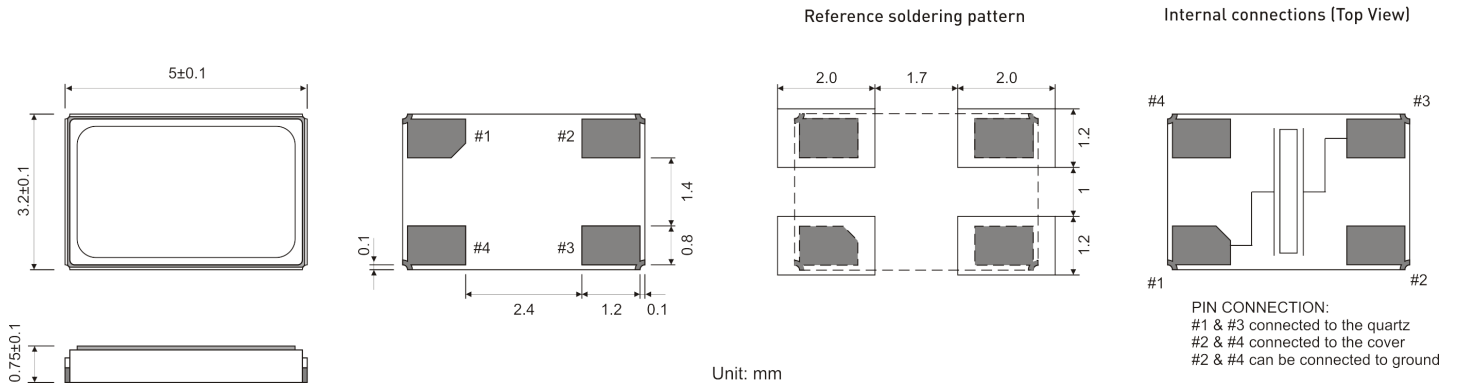
RESONANCE RESISTANCE

FREQUENCY IN MHz	VIBRATION MODE	ESR MAX. IN Ω
8.0 ~ 16.0 MHz	Fundamental	80
16.0 ~ 54.0 MHz	Fundamental	25
54.0~ 133.0 MHz	3 rd Overtone	80

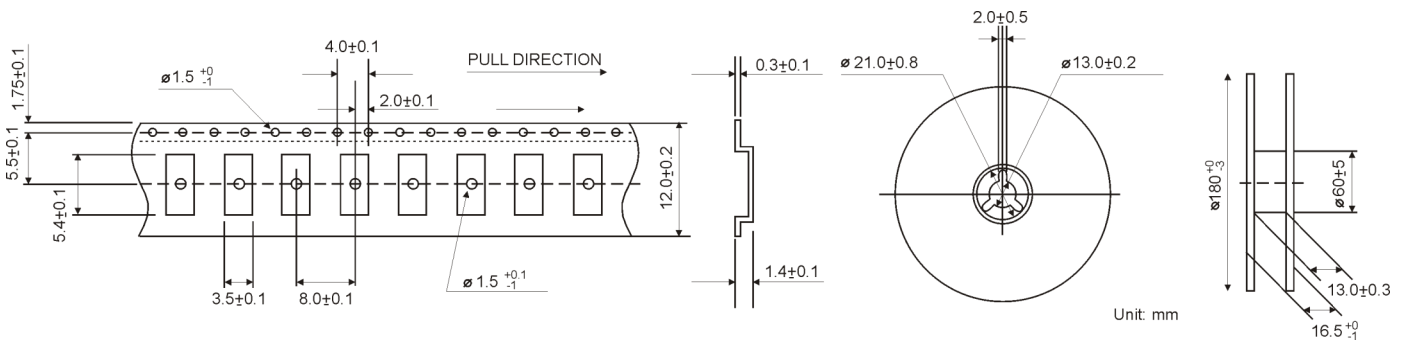
LIST OF STANDARD FREQUENCIES

12.000 MHz	12.288 MHz	13.000 MHz	13.560 MHz	14.318 MHz	14.3181 MHz	14.7456 MHz
15.360 MHz	16.000 MHz	16.384 MHz	18.432 MHz	19.200 MHz	19.660 MHz	20.000 MHz
22.1184 MHz	22.5792 MHz	24.000 MHz	24.576 MHz	25.000 MHz	26.000 MHz	27.000 MHz
27.120 MHz	28.63636 MHz	29.4912 MHz	30.000 MHz	32.000 MHz	33.000 MHz	36.000 MHz
40.000 MHz	48.000 MHz	50.000 MHz				

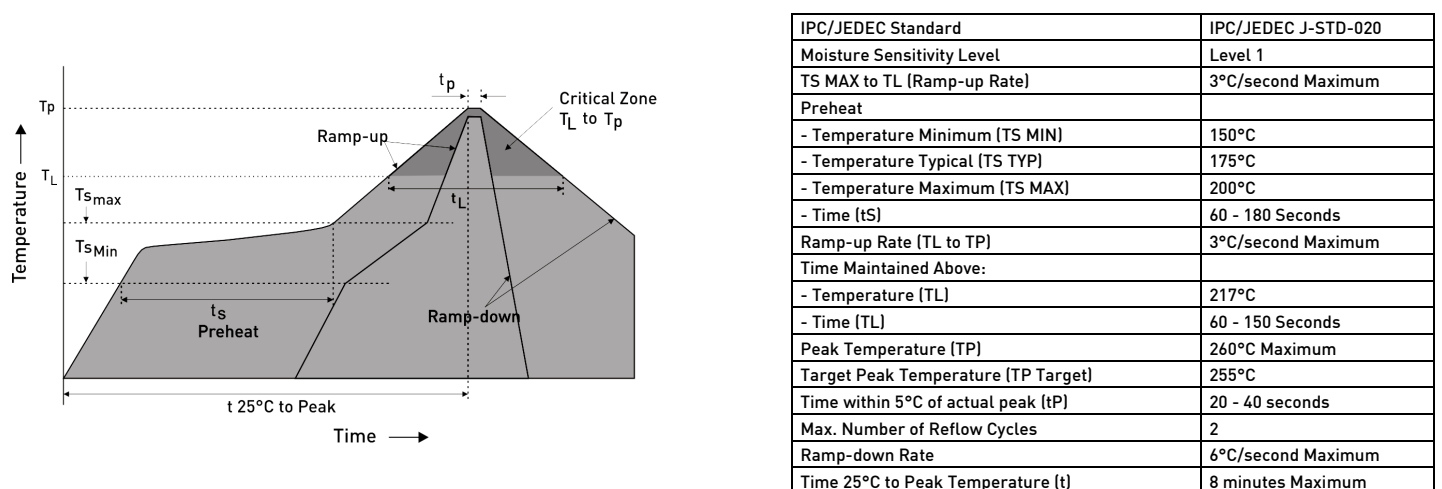
DIMENSIONS



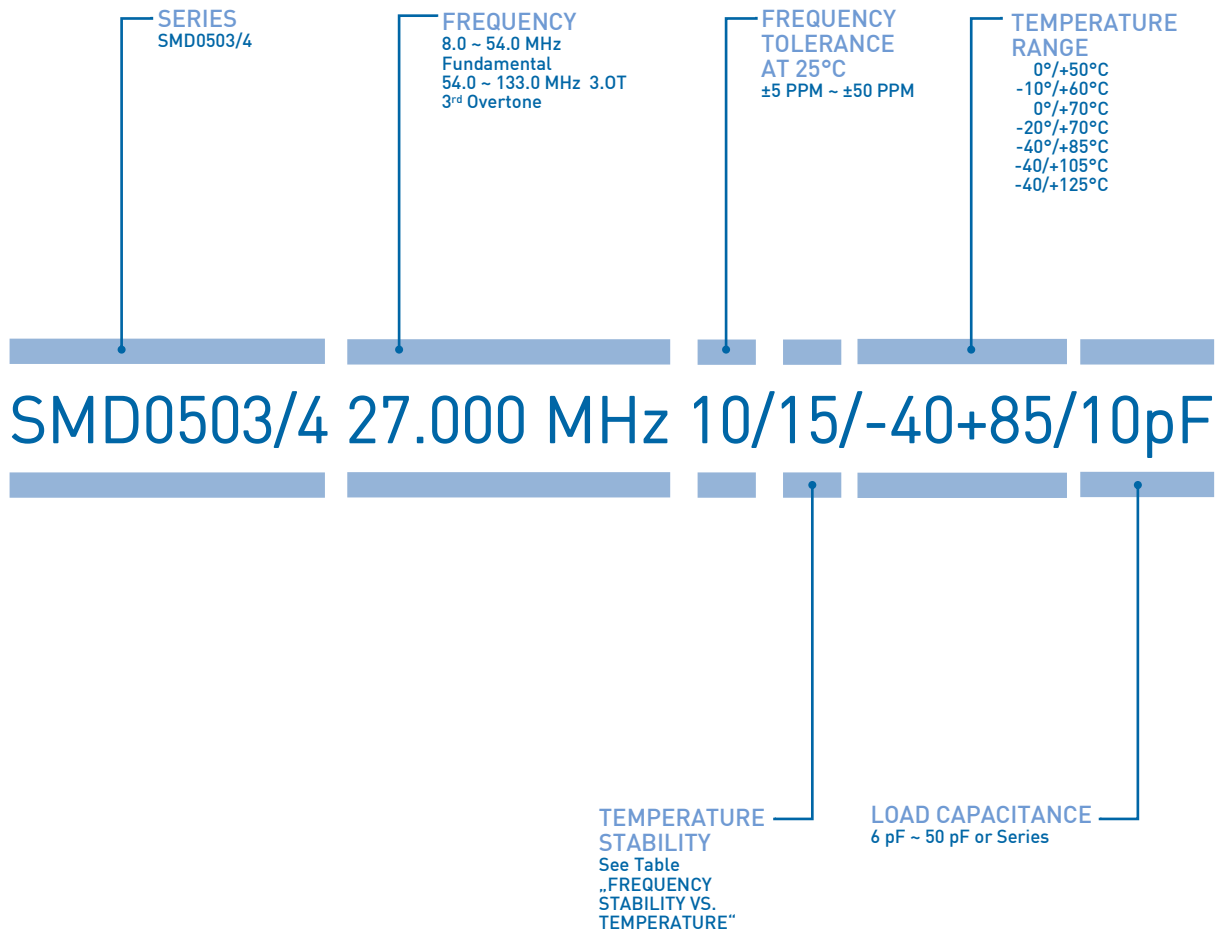
REEL SPECIFICATION



REFLOW SOLDER PROFILE



ORDERING INFORMATION



EXAMPLE: SMD0503/4 27.000 MHz 10/15/-40+85/10pF
PLEASE INDICATE YOUR REQUIRED PARAMETERS



REVISION HISTORY^[2]

VERSION	RELEASE DATE	AMENDMENTS SUMMARY
00	APRIL 2015	+ Initial Data Sheet (SPEC 01/REV.00)
01	AUGUST 2015	+ Revised Drive Level + Revised Frequency vs. Temperature Table
02	AUGUST 2023	+ Revised Frequency range + Revised ESR + Added Standard Frequencies



PREMIUM QUALITY BY PETERMANN-TECHNIK



OUR COMPANY IS CERTIFIED ACCORDING TO ISO 9001:2015 AND 14001:2015

THIS IS FOR YOU TO ENSURE THAT THE PRINCIPLES OF QUALITY MANAGEMENT ARE FULLY IMPLEMENTED IN OUR QM-SYSTEM AND QUALITY CONTROL METHODS .