

LOW ESR SMD MHz QUARTZ CRYSTAL

SERIES "SMD01210/4" (1.2x1.0mm / 4pads)

FEATURES

- + Smallest ceramic packaged low cost MHz quartz crystal
- + Ultra low profile
- + Standard operating temperature range of -10/+60 to -40/+85°C
- + Excellent clock generator for CPU's, Wireless, Mobile Comm., IoT, IoT, WIFI, Industrial, etc.
- + LRT-TECHNOLOGY Inside (LRT is our unique [Low ESR Resonator-Technology](#))
- + Our top quality promise / depth of production:
 - Only use of crystal blanks from our in-house production, based on our unique LRT-Technology
 - Excellent product features guaranteed by multiple 100% tests and 100% end-test
 - 100% quality monitoring from crystal raw material to the end product
 - Excellent quality, performance and reliability is guaranteed.



GENERAL DATA

PB FREE / ROHS COMPLIANT

PARAMETERS	PRODUCT FEATURES AND CONDITIONS
SMD-CRYSTAL SERIES	SMD01210/4
NUMBER OF SOLDER PADS	4
FREQUENCY RANGE	24.0 ~ 285.0 MHz AT-Fundamental
DEVELOPED STANDARD FREQUENCIES	24.0 MHz / 25.0 MHz / 26.0 MHz / 32.0 MHz / 38.4 MHz / 40.0 MHz / 48.0 MHz / 50.0 MHz
FREQUENCY TOLERANCES AT 25°C	±10 ppm ~ ±50 ppm
LOAD CAPACITANCE [C _L]	6 ~ 50 pF (8 pF standard), or Series Resonance
WORKING TEMPERATURE RANGES	-10/+60°C ~ -40/+85°C
TEMPERATURE STABILITY	±10 ppm ~ ±50 ppm (see FREQUENCY STABILITY VS. TEMPERATURE table)
SHUNT CAPACITANCE [C ₀]	1 pF max.
DRIVE LEVEL	100 µW type. / 200 µW max.
AGING	±1 ppm ~ ±3 ppm max. per year
INSULATION RESISTANCE	>500 MΩ DC/100V ±10%
STORAGE TEMPERATURE	-55°+125°C
PRODUCT WEIGHT	0.0008 g
MSL LEVEL	1
DELIVERY FORM	Tape and Reel (3.000 pcs per reel)
RoHS	Lead free and RoHS compliant
POP (EU)2019/1021	No POP substances
PFAS	No PFAS present
PROP 65	Compliant to PROP 65
TSCA	Compliant to TSCA

[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.
4. Do not solder by hot air gun.

FREQUENCY STABILITY VS. TEMPERATURE

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

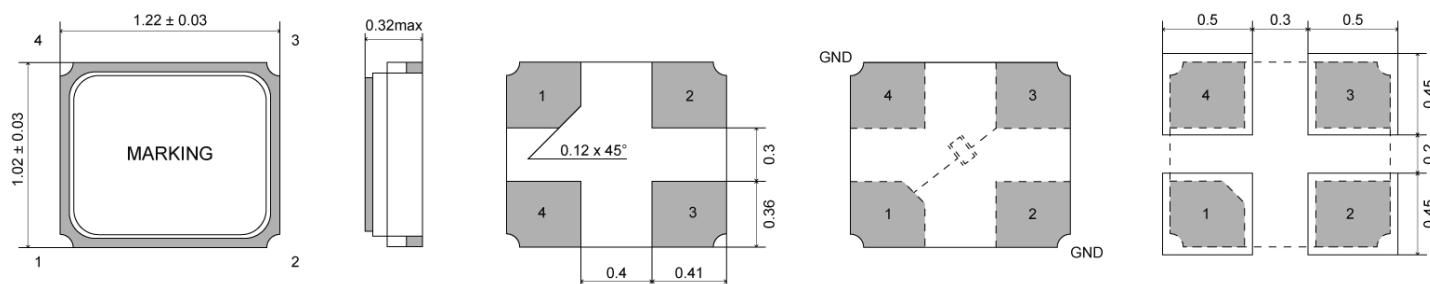
ESR (EQUIVALENT SERIES RESISTANCE)

FREQUENCY IN MHz	VIBRATION MODE	ESR MAX. IN Ω
24.0 ~ 32.0 MHz	Fundamental	100
32.0 ~ 38.0 MHz	Fundamental	80
38.0 ~ 80.0 MHz	Fundamental	60
80.0 ~ 285.0 MHz	Fundamental	40

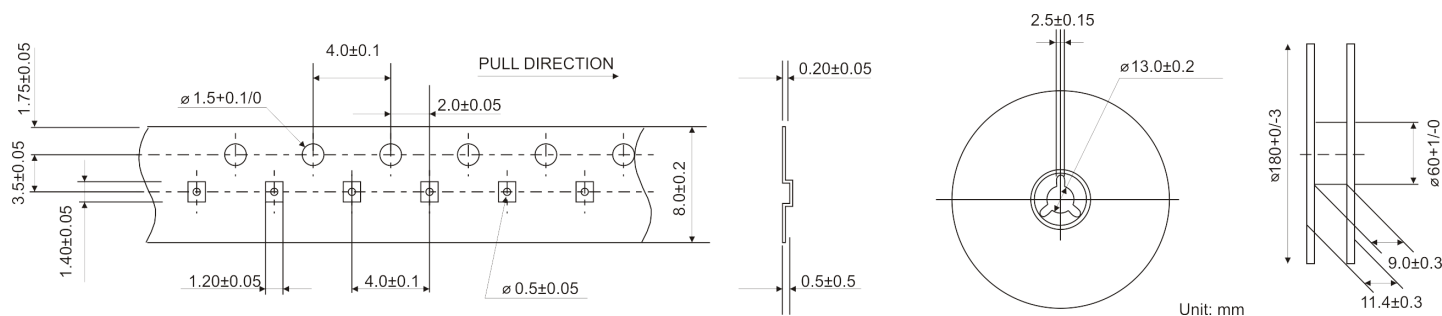
LIST OF STANDARD FREQUENCIES

24.0 MHz	25.0 MHz	26.0 MHz	32.0 MHz
38.4 MHz	40.0 MHz	48.0 MHz	50.0 MHz
others will follow soon			

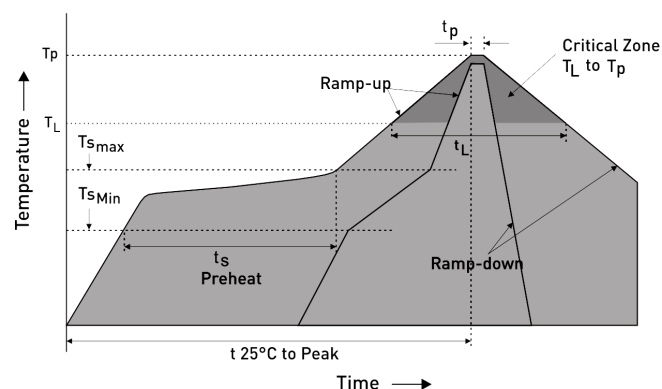
DIMENSIONS



REEL SPECIFICATION

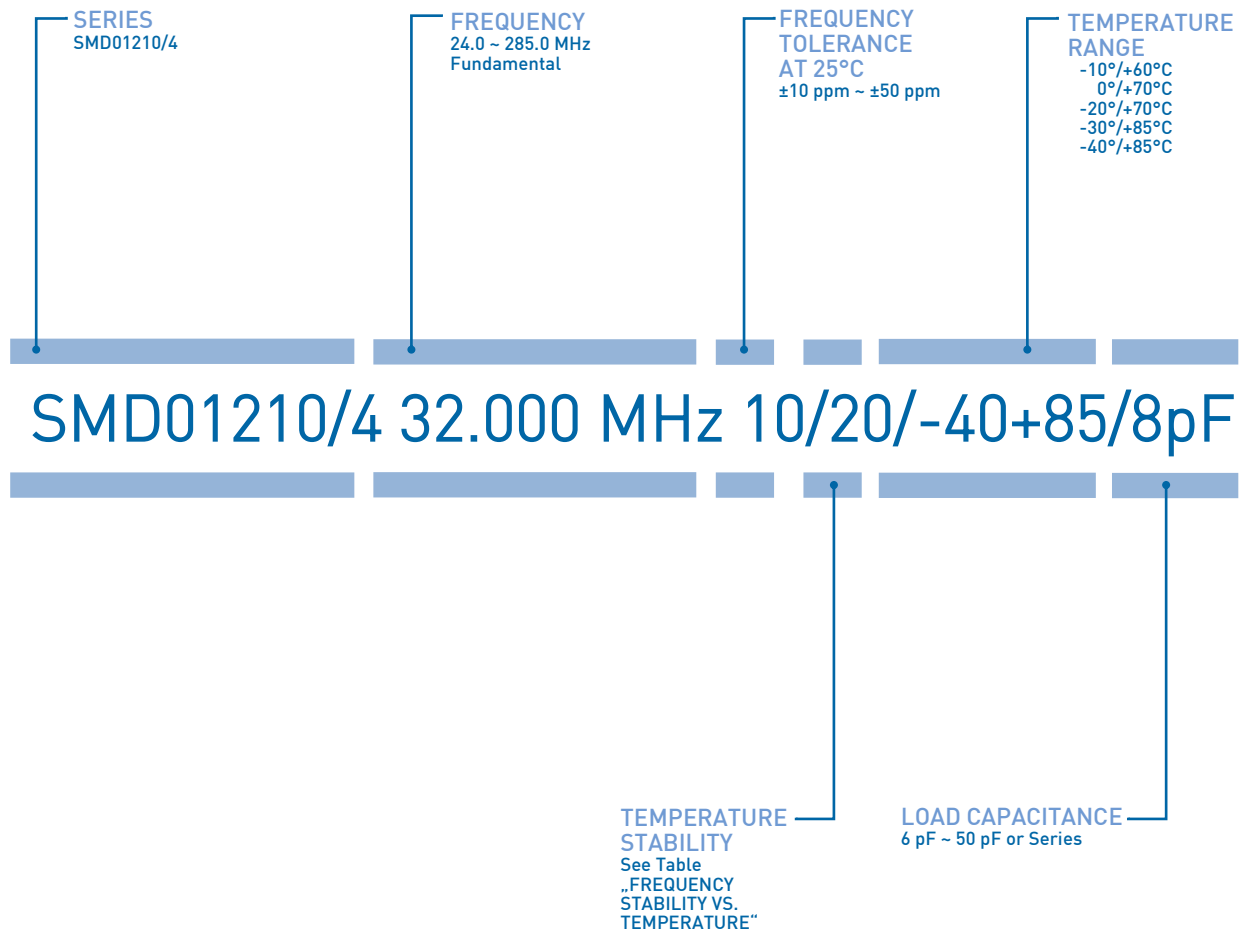


REFLOW SOLDER PROFILE



IPC/JEDEC Standard	IPC/JEDEC J-STD-020
Moisture Sensitivity Level	Level 1
TS MAX to TL (Ramp-up Rate)	3°C/second Maximum
Preheat	
- Temperature Minimum (TS MIN)	150°C
- Temperature Typical (TS TYP)	175°C
- Temperature Maximum (TS MAX)	200°C
- Time (tS)	60 - 180 seconds
Ramp-up Rate (TL to TP)	3°C/second Maximum
Time Maintained Above:	
- Temperature (TL)	217°C
- Time (TL)	60 - 150 seconds
Peak Temperature (TP)	265°C Maximum
Target Peak Temperature (TP Target)	255°C
Time within 5°C of actual peak (tP)	20 - 40 seconds
Max. Number of Reflow Cycles	2
Ramp-down Rate	6°C/second Maximum
Time 25°C to Peak Temperature (t)	8 minutes Maximum

ORDERING INFORMATION



EXAMPLE: SMD01210/4 32.000 MHz 10/20/-40+85/8pF

PLEASE INDICATE YOUR REQUIRED PARAMETERS



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.

THE HEARTBEAT OF YOUR INNOVATION!
RELIABLE · COST-EFFECTIVE · COMPETENT
DESIGN SMARTER – EMPOWERING YOUR PRODUCTS

FOR ALMOST 30 YEARS, WE HAVE BEEN YOUR SPECIALIST FOR CRYSTALS AND OSCILLATORS – FROM PROVEN STANDARDS TO CUSTOM-TAILORED SOLUTIONS.

YOU DEVELOP WITH THE HIGHEST STANDARDS – WE DELIVER THE COMPONENTS TO MATCH: INNOVATIVE, RELIABLE, AND COST-EFFICIENT.

CHOOSE OUR PRODUCTS AND BENEFIT FROM TOP-TIER QUALITY, INNOVATION, STABLE AND INDEPENDENT SUPPLY CHAINS AND PARTNERSHIP ON HIGHEST LEVEL.

SUSTAINABLE SUCCESS FOR YOU AND YOUR PRODUCTS!