



actual size

SMD Quartz Crystal · SMU2

- 2 pad version, 11.5 x 4.8 mm
- extended temperature ranges available
- reflow soldering temperature: 260 °C max.
- package height 3.0 mm max.



RoHS compliant



Pb free



REACH compliant



Conflict mineral free

GENERAL DATA

TYPE		SMU2
frequency range	fund. AT-cut	4.0 ~ 33.0 MHz
	3rd OT AT-cut	ask for availability
frequency tolerance at 25 °C		±20 ppm / ±30 ppm / ±50 ppm
load capacitance C_L		12 pF ~ 32 pF or series
shunt capacitance C_0		< 5 pF
storage temperature		-40 °C ~ +125 °C
shock resistance		> 100 g (half sine pulse, 0.6 ms)
drive level max.		500 µW (100 µW recommended)
aging		< ±5 ppm first year

ESR (SERIES RESISTANCE RS)

frequency in MHz	vibration mode	ESR max. in Ω	ESR typ. in Ω
4.0 ~ 5.999	fund. - AT	80	60
6.0 ~ 6.999	fund. - AT	70	35
7.0 ~ 7.999	fund. - AT	50	25
8.0 ~ 8.999	fund. - AT	50	25
9.0 ~ 13.999	fund. - AT	35	15
14.0 ~ 33.000	fund. - AT	30	10
ask	3rd OT AT	(100)	(60)

TABLE 1: FREQUENCY STABILITY VS. TEMPERATURE

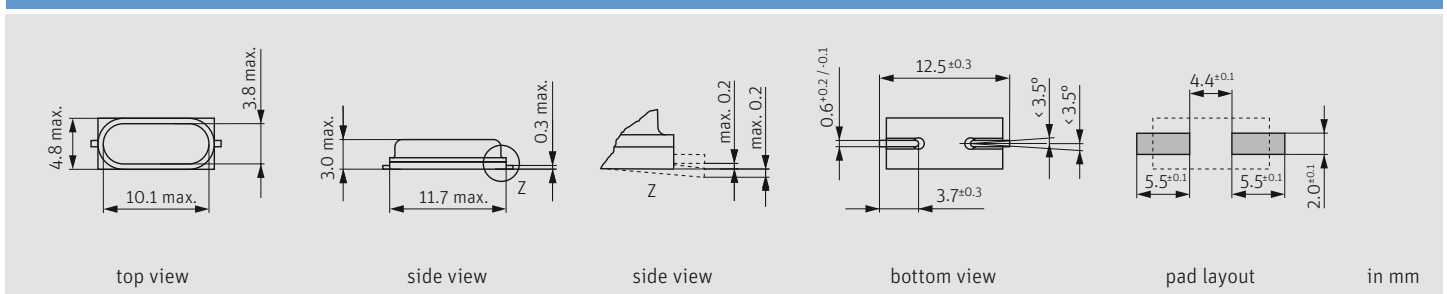
		±20 ppm	±30 ppm	±50 ppm	±100 ppm	±150 ppm
-20 °C ~ +70 °C	STD.	△	○	●		
-40 °C ~ +85 °C	T1		○	○	●	
-40 °C ~ +105 °C	T2			○	○	
-40 °C ~ +125 °C	T3					○

● standard ○ available △ ask if available

NOTE

- extended operating temperatures up to +125 °C
- please refer to the automotive datasheet for the AEC-Q200 qualified version

DIMENSIONS



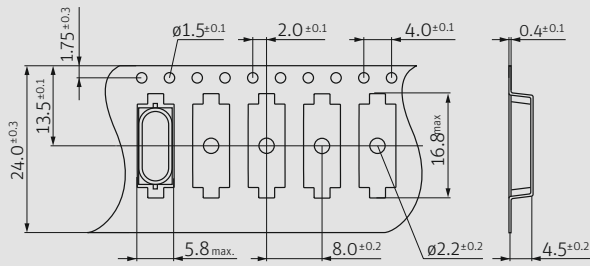
ORDER INFORMATION

Q	frequency	type	load capacitance	tolerance at 25 °C	stability vs. temp. range	option
Quartz	4.0 ~ 33.0 MHz	SMU2	12 pF ~ 32 pF S for series	30 = ±30 ppm std 20 = ±20 ppm 50 = ±50 ppm	see table	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C T3 = -40 °C ~ +125 °C FU = for fundamental frequencies ≥ 20 MHz 3OT = 3rd overtone (if available)

Example: Q 25.0-SMU2-12-30/50-T1-FU-LF (Suffix LF = RoHS compliant / Pb free pins or pads)

SMD Quartz Crystal · SMU2 · Industrial Application

TAPING SPECIFICATION

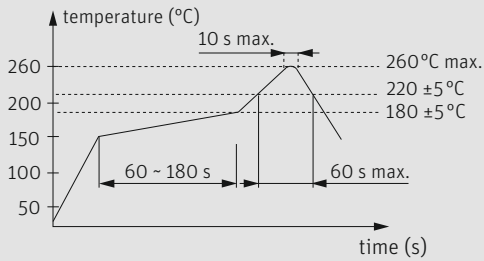


1000 pcs per reel

Direction of feed →

in mm

REFLOW SOLDERING PROFILE



note: parts are also suitable for soldering systems with lead (Pb) content

LOAD CAPACITANCE CODES

7 pF: m	13 pF: v	20 pF: c	32 pF: e
8 pF: k	14 pF: x	22 pF: g	series: s
9 pF: n	15 pF: j	24 pF: d	T: 3rd OT
10 pF: h	16 pF: b	25 pF: r	
11 pF: l	17 pF: t	27 pF: w	
12 pF: a	18 pF: f	30 pF: .	

example 10.0 MHz / 12 pF: 10a000

MARKING

frequency with load capacitance code
company code / date code / internal code

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
2023	2027	a	b	c	d	e	f	g	h	j	k	l	m
2024	2028	n	p	q	r	s	t	u	v	w	x	y	z
2025	2029	A	B	C	D	E	F	G	H	J	K	L	M
2026	2030	N	P	Q	R	S	T	U	V	W	X	Y	Z