



actual size

# SMU3 · AEC-Q200

- 2 Pad Version, 11.5 x 4.8 mm
- AEC-Q200 qualified
- production certified according IATF 16949
- package height 4.0 mm max.



RoHS compliant



Pb free



REACH compliant



Conflict mineral free

## GENERAL DATA

TYPE	SMU3 AEC-Q200
frequency range	3.2768 ~ 33.0 MHz (fund. AT-cut) 27.0 ~ 60.0 MHz (3rd OT AT-cut)
frequency tolerance at 25 °C	±20 ppm / ±30 ppm / ±50 ppm
load capacitance $C_L$	12 pF ~ 32.0 pF or series
shunt capacitance $C_0$	< 5 pF
storage temperature	-40 °C ~ +125 °C
shock resistance	> 100 g (half sine pulse, 6.0 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
3.276 ~ 3.499	fund. - AT	200	100
3.579 ~ 3.999	fund. - AT	120	80
4.000 ~ 5.999	fund. - AT	80	60
6.000 ~ 6.999	fund. - AT	70	35
7.000 ~ 8.999	fund. - AT	50	25
9.000 ~ 13.999	fund. - AT	35	15
14.0 ~ 33.000	fund. - AT	30	10
27.0 ~ 60.000	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					○

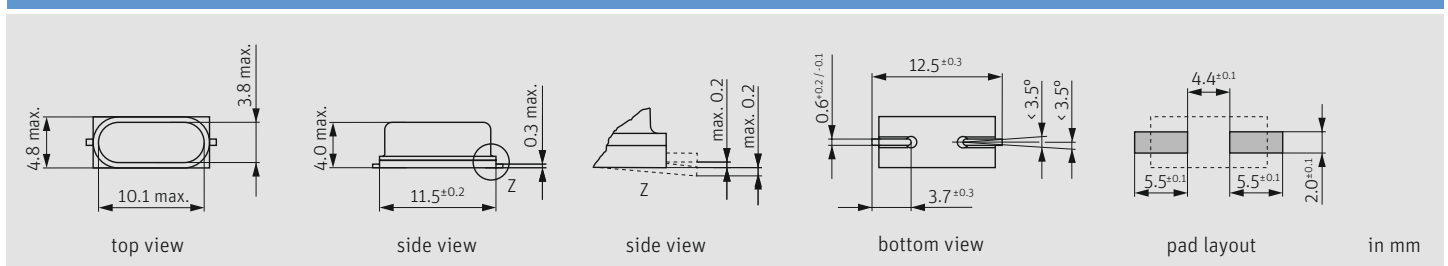
● standard ○ available

## MARKING

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

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2019	2023	a	b	c	d	e	f	g	h	j	k	l	m
2020	2024	n	p	q	r	s	t	u	v	w	x	y	z
2021	2025	A	B	C	D	E	F	G	H	J	K	L	M
2022	2026	N	P	Q	R	S	T	U	V	W	X	Y	Z

## DIMENSIONS



## ORDER INFORMATION

Q	frequency	type	load capacitance	tolerance at 25 °C	stability vs. temp. range	option 1
Quartz	3.2768 ~ 60.0 MHz	SMU3	12 pF ~ 32 pF S for series	20 = ±20 ppm 30 = ±30 ppm 50 = ±50 ppm	20 = ±20 ppm 30 = ±30 ppm 50 = ±50 ppm 100 = ±100 ppm 150 = ±150 ppm	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 30T = 3rd overtone AEC = AEC-Q200 qualified

**Example: Q 30.0-SMU3-30-30/50-T2-FU-AEC-LF** (Suffix LF = RoHS compliant / Pb free)