

ECX-32 SMD CRYSTAL

Request a Sample



The sub miniature ECX-32 is a compact SMD Crystal. The 3.2 x 2.5 x 0.8 mm ceramic package is ideal for LoRa WAN, wireless, and high density applications.

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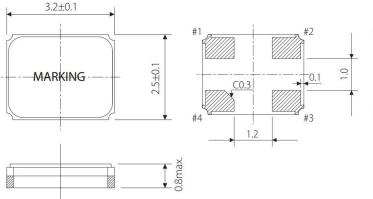


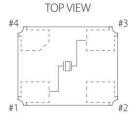
- Low Profile
- 3.2 x 2.5 mm Footprint
- Extended Temp. Range Option
- RoHS Compliant

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

PARAMETERS	CONDITIONS		ECX-32		UNITS
		MIN	TYP	MAX	
Frequency		8.000		54.000	MHz
Mode of Oscillation	Fundamental				
Frequency Tolerance*	@ +25°C			± 50	ppm
Frequency Stability*	-20 ~ +70°C			± 50	ppm
Shunt Capacitance	Со			5	pF
Load Capacitance	Specify in P/N	4	20	Series	pF
Drive Level	DL			100	μW
Operating Temperature*	Topr	-20		+70	°C
Storage Temperature	Tstg	-55		+125	°C
Aging (First Year)	@ +25°C ±3°C			±5	ppm

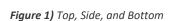
DIMENSIONS (mm)





Equivalent Series Resistant	ce
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Frequency (MHz)	ESR Ω Max.
8.000 ~ 9.999	400
10.000 ~ 15.999	100
16.000 ~ 19.999	80
20.000 ~ 23.999	60
24.000 ~ 54.000	40



Crystal is symmetrical, pad 1 & 3 are interchangeable. Chamfer on the bottom can be on pad 4 or pad 1 and has no electrical significance.

Pad Connections				
1	In/Out			
2	Gnd			
3	Out/In			
4	Gnd			

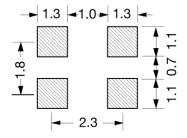


Figure 2) Suggested land

PART NUMBERING GUIDE: Example ECS-200-20-33-TR

ECS - FREQUENCY ABBREVIATION		LOAD	PACKAGE		AVAILABLE OP	PACKAGING	
		CAPACITANCE		Tolerance	e Stability	Temp Range	
ECS	200 = 20.000 MHz See P/N Guide	20 = 20 pF S = Series	33 = ECX-32	Blank = Std A = ± 25 ppm J = ± 20 ppm R = ± 15 ppm C = ± 10 ppm	Blank= Std D= ±100 ppm E = ± 50 ppm G = ± 30 ppm H = ± 25 ppm	Blank= Std L = -10 ~ +70°C M = -20 ~ +70°C Y = -30 ~ +85°C N = -40 ~ +85°C	& Reel

^{*} Specify available options in P/N.

 $P = -40 \sim +105$ °C $S = -40 \sim +125 °C$ $U = -55 \sim +125 °C$

 $T = \pm 20 \text{ ppm } \dagger$

 $W = \pm 15 ppm †$

 $K = \pm 10 ppm \dagger$

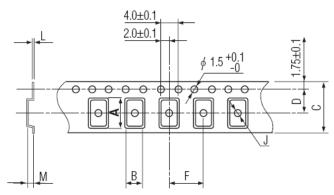
Rev.2019

[†] Contact ECS for availability over extended temp range.





POCKET TAPE DIMENSIONS (mm)



Α	В	С	D	F	J	L	М	Reel Dia.	Qty/Reel
3.5	2.8	8.0	3.5	4.0	1.1	0.25	1.0	180	1000

SOLDER PROFILE				
Peak solder Temp +260°C Max 10 sec Max.				
2 Cycles Max.				
MSL 1, Lead Finish Au				

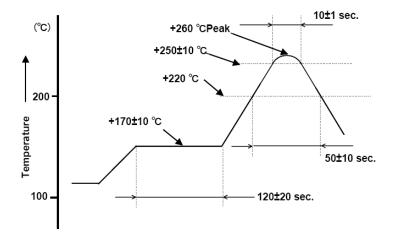


Figure 1) Suggested Reflow Profile

DEVELOPED FREQUENCIES					
Abbreviation	Frequency (MHZ)				
80	8.000				
100	10.000				
120	12.000				
122.8	12.288				
143	14.31818				
147.4	14.7456				
160	16.000				
184	18.432				
192	19.200				
196	19.6608				
200	20.000				
240	24.000				
245.7	24.576				
250	25.000				
260	26.000				
270	27.000				
300	30.000				
320	32.000				
360	36.000				
400	40.000				
480	48.000				

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ECS:

ECS-360-S-33-TR ECS-400-S-33-TR ECS-480-20-33-TR ECS-480-S-33-TR ECS-160-20-33-TR ECS-184-20-33-TR ECS-196-20-33-TR ECS-200-20-33-TR ECS-240-20-33-TR ECS-250-20-33-TR ECS-270-20-33-TR ECS-300-20-33-TR ECS-300-S-33-TR ECS-320-20-33-TR ECS-320-S-33-TR ECS-360-20-33-TR ECS-400-20-33-TR ECS-120-20-33-CKM-TR ECS-120-20-33-DU-TR ECS-130-20-33-CKM-TR ECS-160-20-33-CKM-TR ECS-160-20-33-DU-TR ECS-162.57-20-33-CKM-TR ECS-162.57-20-33-DU-TR ECS-184-20-33-CKM-TR ECS-184-20-33-DU-TR ECS-200-20-33-CKM-TR ECS-200-20-33-DU-TR ECS-240-20-33-CKM-TR ECS-240-20-33-DU-TR ECS-250-20-33-CKM-TR ECS-250-20-33-DU-TR ECS-270-20-33-CKM-TR ECS-270-20-33-DU-TR ECS-320-20-33-CKM-TR ECS-320-20-33-DU-TR ECS-480-20-33-CKM-TR ECS-480-20-33-DU-TR ECS-31250-10-33-AGL-TR ECS-130-20-33-EN-TR ECS-200-18-33-JGN-TR ECS-250-18-33-JGN-TR ECS-320-18-33-JGN-TR ECS-147.4-18-33-JGN-TR ECS-184.3-18-33-JGN-TR ECS-330-18-33-JGN-TR ECS-240-18-33-JGN-TR ECS-260-18-33-JGN-TR ECS-192-18-33-JGN-TR ECS-130-18-33-JGN-TR ECS-160-18-33-JGN-TR ECS-163.8-18-33-JGN-TR ECS-143-18-33-JGN-TR ECS-120-18-33-JGN-TR ECS-122.8-18-33-JGN-TR ECS-245.7-18-33-JGN-TR ECS-270-18-33-JGN-TR ECS-480-18-33-JGN-TR ECS-260-8-33-JGN-TR ECS-122.8-8-33-JGN-TR ECS-300-18-33-JGN-TR ECS-480-8-33-RHN-TR ECS-100-12-33-AGN-TR ECS-500-8-33-AGN-TR ECS-135.60-8-33-JGN-TR ECS-160-8-33-JGN-TR ECS-300-10-33-AGL-TR ECS-500-18-33-AGM-TR ECS-260-18-33-AGM-TR ECS-260-10-33-JGN-TR ECS-500-10-33-RTN-TR ECS-320-10-33-AGM-TR ECS-271.2-8-33-AGN-TR ECS-200-8-33-JGN-TR ECS-192-8-33-JGN-TR ECS-200-18-33-AGM-TR ECS-333.33-18-33-JGN-TR ECS-320-12-33-AGN-TR ECS-100-18-33-AGM-TR ECS-147.4-8-33-JGN-TR ECS-271.2-12-33-AGN-TR ECS-294.912-18-33-JEM-TR ECS-270-18-33-AGM-TR ECS-240-12-33-AGN-TR ECS-122.8-18-33-AGM-TR ECS-554.666-10-33-AGN-TR ECS-120-20-33-AEN-TR ECS-135.60-10-33-AGL-TR ECS-250-10-33-AGM-TR ECS-250-8-33-AGN-TR ECS-320-10-33-JTL-TR ECS-221-18-33-JGN-TR ECS-260-12-33-AGM-TR ECS-120-12-33-AGN-TR ECS-400-18-33-JGN-TR ECS-270-10-33-AGM-TR ECS-160-18-33-JEM-TR ECS-200-12-33-AGN-TR ECS-135.60-12-33-AGM-TR ECS-540-8-33-JTN-TR