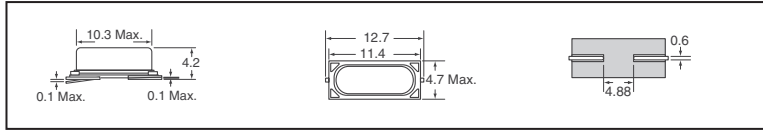


**ABLS Series HC49US SMD Crystals**

Dim. in mm.



**Specifications:**

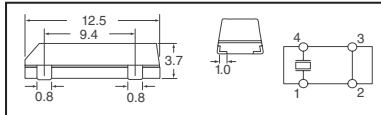
- ABLS-xxx-10-J4Y Series:**
  - Frequency Stability: ±30ppm, -20°C ~ 70°C
  - Frequency Tolerance: ±30ppm
  - Operating Temperature: -40°C ~ 105°C
  - Load Capacitance: 18.0pF
- ABLS-xxx-B2-T Series:**
  - Frequency Stability: ±50ppm, -20°C ~ 70°C
  - Frequency Tolerance: ±20ppm
  - Operating Temperature: -20°C ~ 70°C
  - Load Capacitance: 18.0pF
- ABLS-xxx-10-R20-D Series:**
  - Frequency Stability: ±50ppm
  - Frequency Tolerance: ±50ppm
  - Operating Temperature: 0°C ~ 70°C
  - Load Capacitance: 20.0pF
- ABLS-xxx-D-R60-1-W-T Series:**
  - Frequency Stability: ±25ppm
  - Frequency Tolerance: ±10ppm
  - Operating Temperature: -40°C ~ 85°C
  - Load Capacitance: 18.0pF

Frequency (MHz)	Digi-Key Part No.	Cut Tape Price Each	Tape & Reel Pricing 1,000	Abracon Part No.	Compatible Chip Sets and Applications
<b>ABLS-xxx-10-J4Y Series — Chip Set Crystals</b>					
13.262260	535-9703-1-ND	.52	.43	.38	264.26
13.548600	535-9704-1-ND	.52	.43	.38	264.26
14.089190	535-9705-1-ND	.52	.43	.38	264.26
14.276430	535-9706-1-ND	.52	.43	.38	264.26
14.299830	535-9707-1-ND	.52	.43	.38	264.26
14.463660	535-9708-1-ND	.52	.43	.38	264.26
14.822520	535-9709-1-ND	.52	.43	.38	264.26

**ABSM2 Series 12.5 x 4.6 SMD Crystals**

Dim. in mm.

- Specifications:**
- Frequency Stability: ±50ppm Maximum, 10°C ~ 60°C
- Frequency Tolerance: ±30ppm
- Operating Temperature: -10°C ~ 60°C
- Load Capacitance: 18pF

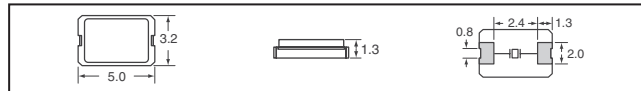


Frequency (MHz)	Digi-Key Part No.	Cut Tape Price Each	T & R Pricing 1,000	50	Abracon Part No.
3.579545	535-9722-1-ND	.66	.54	.48	335.41
3.686400	535-9723-1-ND	.66	.54	.48	335.41
4.000000	535-9724-1-ND	.66	.54	.48	335.41
4.800000	535-9725-1-ND	.66	.54	.48	335.41
6.000000	535-9726-1-ND	.66	.54	.48	335.41
7.372800	535-9727-1-ND	.66	.54	.48	335.41
8.192000	535-9728-1-ND	.66	.54	.48	335.41
8.000000	535-9729-1-ND	.66	.54	.48	335.41
10.000000	535-9730-1-ND	.66	.54	.48	335.41
11.059200	535-9731-1-ND	.66	.54	.48	335.41
12.000000	535-9732-1-ND	.66	.54	.48	335.41
12.288000	535-9733-1-ND	.66	.54	.48	335.41
14.318180	535-9734-1-ND	.66	.54	.48	335.41
14.745600	535-9735-1-ND	.66	.54	.48	335.41
16.000000	535-9736-1-ND	.66	.54	.48	335.41
16.934400	535-9737-1-ND	.66	.54	.48	335.41
19.660800	535-9738-1-ND	.66	.54	.48	335.41
20.000000	535-9739-1-ND	.66	.54	.48	335.41
24.000000	535-9740-1-ND	.66	.54	.48	335.41
24.576000	535-9741-1-ND	.66	.54	.48	335.41
25.000000	535-9742-1-ND	.66	.54	.48	335.41
27.000000	535-9743-1-ND	.66	.54	.48	335.41
32.000000	535-9744-1-ND	.66	.54	.48	335.41
32.768000	535-9745-1-ND	.66	.54	.48	335.41
40.000000	535-9746-1-ND	.66	.54	.48	335.41
48.000000	535-9747-1-ND	.66	.54	.48	335.41
50.000000	535-9748-1-ND	.66	.54	.48	335.41
60.000000	535-9749-1-ND	.66	.54	.48	335.41
64.000000	535-9750-1-ND	.66	.54	.48	335.41

† For Tape and Reel part number, change 1-ND to 2-ND.

**ABM3 Series 5.0 x 3.2 SMD Crystals**

Dim. in mm.



- Specifications:**
- Frequency Stability: ±50ppm, -20°C ~ 70°C
- Frequency Tolerance: ±20ppm
- Operating Temperature: -20°C ~ 70°C
- Load Capacitance: 18.0pF

Frequency (MHz)	Digi-Key Part No.	Cut Tape Price Each	T & R Pricing 1,000	50	Abracon Part No.
12.000000	535-9100-1-ND	1.00	.82	.73	508.20
13.560000	535-9101-1-ND	1.00	.82	.73	508.20
14.318180	535-9102-1-ND	1.00	.82	.73	508.20
16.000000	535-9103-1-ND	1.00	.82	.73	508.20

Frequency (MHz)	Digi-Key Part No.	Cut Tape Price Each	T & R Pricing 1,000	50	Abracon Part No.
<b>ABLS-xxx-B2-T Series</b>					
3.579545	535-9081-1-ND	.41	.36	.31	190.94
3.686400	535-9082-1-ND	.41	.36	.31	190.94
4.000000	535-9085-1-ND	.41	.36	.31	190.94
4.915200	535-9086-1-ND	.41	.36	.31	190.94
5.000000	535-9087-1-ND	.41	.36	.31	190.94
7.372800	535-9088-1-ND	.41	.36	.31	190.94
8.000000	535-9089-1-ND	.41	.36	.31	190.94
8.192000	535-9090-1-ND	.41	.36	.31	190.94
10.000000	535-9065-1-ND	.41	.36	.31	190.94
11.059200	535-9066-1-ND	.41	.36	.31	190.94
12.000000	535-9067-1-ND	.41	.36	.31	190.94
12.288000	535-9068-1-ND	.41	.36	.31	190.94
14.318180	535-9069-1-ND	.41	.36	.31	190.94
14.745600	535-9070-1-ND	.41	.36	.31	190.94
16.000000	535-9071-1-ND	.41	.36	.31	190.94
18.432000	535-9072-1-ND	.41	.36	.31	190.94
19.660800	535-9073-1-ND	.41	.36	.31	190.94
20.000000	535-9074-1-ND	.41	.36	.31	190.94
22.118400	535-9075-1-ND	.41	.36	.31	190.94
24.000000	535-9076-1-ND	.41	.36	.31	190.94
24.576000	535-9077-1-ND	.41	.36	.31	190.94
25.000000	535-9078-1-ND	.41	.36	.31	190.94
27.000000	535-9079-1-ND	.41	.36	.31	190.94
32.000000	535-9080-1-ND	.41	.36	.31	190.94
48.000000	535-9083-1-ND	.41	.36	.31	190.94
49.152000	535-9084-1-ND	.41	.36	.31	190.94
<b>ABLS-xxx-10-R20-D Series — Crystals for RF Transceivers</b>					
9.794100	535-9694-1-ND	.44	.36	.32	223.61
9.843750	535-9689-1-ND	.44	.36	.32	223.61
12.187500	535-9696-1-ND	.44	.36	.32	223.61
13.062500	535-9697-1-ND	.44	.36	.32	223.61
13.491600	535-9805-1-ND	.44	.36	.32	223.61
13.560000	535-9687-1-ND	.44	.36	.32	223.61
<b>ABLS-xxx-10-Rxx-D Series — Crystals for RF Transceivers</b>					
4.897000	535-9688-1-ND	.44	.36	.32	223.61
6.745800	535-9686-1-ND	.44	.36	.32	223.61
13.605000	535-9690-1-ND	.44	.36	.32	223.61
14.335900	535-9691-1-ND	.44	.36	.32	223.61
14.359400	535-9692-1-ND	.44	.36	.32	223.61
<b>ABLS-xxx-D-R60-1-W-T Series — Zigbee Specification Crystal</b>					
24.000000	535-9701-1-ND	.68	.64	.55	272.25

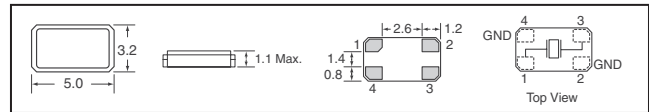
† For Tape and Reel part number, change 1-ND to 2-ND.

Frequency (MHz)	Digi-Key Part No.	Cut Tape Price Each	T & R Pricing 1,000	50	Abracon Part No.
18.432000	535-9104-1-ND	1.00	.82	.73	508.20
20.000000	535-9105-1-ND	1.00	.82	.73	508.20
24.000000	535-9106-1-ND	1.00	.82	.73	508.20
24.576000	535-9107-1-ND	1.00	.82	.73	508.20
25.000000	535-9108-1-ND	1.00	.82	.73	508.20
27.000000	535-9109-1-ND	1.00	.82	.73	508.20
28.636000	535-9110-1-ND	1.00	.82	.73	508.20
29.491200	535-9111-1-ND	1.00	.82	.73	508.20
30.000000	535-9112-1-ND	1.00	.82	.73	508.20
33.000000	535-9113-1-ND	1.00	.82	.73	508.20
40.000000	535-9114-1-ND	1.00	.82	.73	508.20
48.000000	535-9115-1-ND	1.00	.82	.73	508.20

† For Tape and Reel part number, change 1-ND to 2-ND.

**ABM3B Series 5.0 x 3.2 SMD Crystals**

Dim. in mm.



- Specifications:**
- Frequency Stability: ±10ppm, -10°C ~ 60°C
- Frequency Tolerance: ±10ppm @ 25°C
- Operating Temperature: -10°C ~ 60°C
- Load Capacitance: 10.0pF
- Frequency Stability: ±50ppm, -20°C ~ 70°C
- Frequency Tolerance: ±20ppm @ 25°C
- Operating Temperature: -20°C ~ 70°C
- Load Capacitance: 18.0pF
- Frequency Stability: ±50ppm
- Frequency Tolerance: ±30ppm
- Operating Temperature: -40°C ~ 85°C
- Load Capacitance: 10.0pF
- Frequency Stability: ±25ppm
- Frequency Tolerance: ±10ppm
- Operating Temperature: -40°C ~ 85°C
- Load Capacitance: 18.0pF
- ESR: 60Ω Maximum

Frequency (MHz)	Digi-Key Part No.	Cut Tape Price Each	T & R Pricing 1,000	50	Abracon Part No.
<b>ABM3B-xxx-10-U-T Series</b>					
8.000000	535-9721-1-ND	1.00	.82	.73	508.20
10.000000	300-8195-1-ND	1.40	1.15	1.02	711.48
11.059200	300-8196-1-ND	1.40	1.15	1.02	711.48
12.000000	300-8197-1-ND	1.26	1.03	.92	640.33
12.288000	300-8198-1-ND	1.26	1.03	.92	640.33
12.800000	300-8199-1-ND	1.40	1.15	1.02	711.48
13.000000	300-8200-1-ND	1.26	1.03	.92	640.33
13.500000	300-8201-1-ND	1.40	1.15	1.02	711.48
13.560000	300-8202-1-ND	1.26	1.03	.92	640.33
14.400000	300-8203-1-ND	1.40	1.15	1.02	711.48
14.745600	300-8204-1-ND	1.40	1.15	1.02	711.48
15.360000	300-8205-1-ND	1.26	1.03	.92	640.33
16.000000	300-8206-1-ND	1.26	1.03	.92	640.33
16.384000	300-8207-1-ND	1.26	1.03	.92	640.33
16.800000	300-8208-1-ND	1.40	1.15	1.02	711.48
18.432000	300-8209-1-ND	1.26	1.03	.92	640.33
19.200000	300-8210-1-ND	1.40	1.15	1.02	711.48
19.440000	300-8211-1-ND	1.40	1.15	1.02	711.48
19.680000	300-8212-1-ND	1.40	1.15	1.02	711.48
19.800000	300-8213-1-ND	1.40	1.15	1.02	711.48
20.000000	300-8214-1-ND	1.26	1.03	.92	640.33

† See data sheet for electrical specifications † For Tape and Reel part number, change 1-ND to 2-ND. (Continued)

Digi-Reel® Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

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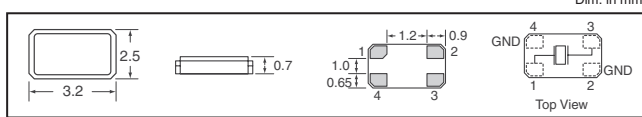
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(UK091) 1313

Frequency (MHz)	Digi-Key Part No.	Cut Tape Price Each	T & R Pricing†	Abracón Part No.
		1 10 50	1,000	
22.0000	300-8215-1-ND	1.40 1.15 1.02	711.48	ABM3B-22.000MHZ-10-1-U-T
24.0000	300-8216-1-ND	1.26 1.03 92	640.33	ABM3B-24.000MHZ-10-1-U-T
24.5760	300-8217-1-ND	1.26 1.03 92	640.33	ABM3B-24.576MHZ-10-1-U-T
25.0000	300-8218-1-ND	1.26 1.03 92	640.33	ABM3B-25.000MHZ-10-1-U-T
26.0000	300-8219-1-ND	1.40 1.15 1.02	711.48	ABM3B-26.000MHZ-10-1-U-T
28.63636	300-8220-1-ND	1.40 1.15 1.02	711.48	ABM3B-28.63636MHZ-10-1-U-T
29.49120	300-8221-1-ND	1.40 1.15 1.02	711.48	ABM3B-29.4912MHZ-10-1-U-T
30.00000	300-8222-1-ND	1.26 1.03 92	640.33	ABM3B-30.000MHZ-10-1-U-T
40.00000	300-8223-1-ND	1.26 1.03 92	640.33	ABM3B-40.000MHZ-10-1-U-T
44.00000	300-8224-1-ND	1.40 1.15 1.02	711.48	ABM3B-44.000MHZ-10-1-U-T
48.00000	300-8225-1-ND	1.26 1.03 92	640.33	ABM3B-48.000MHZ-10-1-U-T
<b>ABM3B-xxx-B2-T Series</b>				
8.00000	535-9120-1-ND	1.00 82 73	508.20	ABM3B-8.000MHZ-B2-T
12.00000	535-9116-1-ND	1.00 82 73	508.20	ABM3B-12.000MHZ-B2-T
12.88800	535-9117-1-ND	1.00 82 73	508.20	ABM3B-12.888MHZ-B2-T
13.00000	535-9118-1-ND	1.00 82 73	508.20	ABM3B-13.000MHZ-B2-T
13.82400	535-9119-1-ND	1.00 82 73	508.20	ABM3B-13.824MHZ-B2-T
14.31818	535-9120-1-ND	1.00 82 73	508.20	ABM3B-14.31818MHZ-B2-T
15.36000	535-9121-1-ND	1.00 82 73	508.20	ABM3B-15.360MHZ-B2-T
16.00000	535-9122-1-ND	1.00 82 73	508.20	ABM3B-16.000MHZ-B2-T
16.39400	535-9123-1-ND	1.00 82 73	508.20	ABM3B-16.394MHZ-B2-T
18.43200	535-9124-1-ND	1.00 82 73	508.20	ABM3B-18.432MHZ-B2-T
20.00000	535-9125-1-ND	1.00 82 73	508.20	ABM3B-20.000MHZ-B2-T
24.00000	535-9126-1-ND	1.00 82 73	508.20	ABM3B-24.000MHZ-B2-T
24.57600	535-9127-1-ND	1.00 82 73	508.20	ABM3B-24.576MHZ-B2-T
25.00000	535-9128-1-ND	1.00 82 73	508.20	ABM3B-25.000MHZ-B2-T
27.00000	535-9129-1-ND	1.00 82 73	508.20	ABM3B-27.000MHZ-B2-T
30.00000	535-9130-1-ND	1.00 82 73	508.20	ABM3B-30.000MHZ-B2-T
32.00000	535-9131-1-ND	1.00 82 73	508.20	ABM3B-32.000MHZ-B2-T
40.00000	535-9132-1-ND	1.00 82 73	508.20	ABM3B-40.000MHZ-B2-T
48.00000	535-9133-1-ND	1.00 82 73	508.20	ABM3B-48.000MHZ-B2-T
<b>ABM3B-xxx-D4 Series — Crystals for RF Transceivers</b>				
12.18750	535-9688-1-ND	1.26 1.03 92	640.33	ABM3B-12.1875MHZ-10-D4
13.06250	535-9690-1-ND	1.26 1.03 92	640.33	ABM3B-13.0625MHZ-10-D4
<b>ABM3B-xxx-D-R60-1-W-T Series — Zigbee Specification Crystals</b>				
24.00000	535-9700-1-ND†	1.50 1.40 1.20	598.95	ABM3B-24.000MHZ-D-R60-1-W-T

† See data sheet for electrical specifications † For Tape and Reel part number, change 1-ND to 2-ND.

**ABM8 Series 3.2 x 2.5 SMD Crystals**

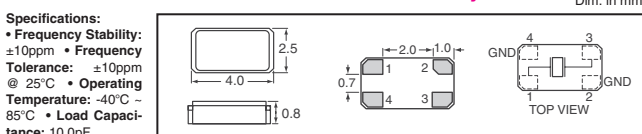


**Specifications:**  
**ABM8-xxx-B2-T Series:** • Frequency Stability: ±50ppm, -20°C ~ 70°C • Frequency Tolerance: ±20ppm @ 25°C • Operating Temperature: -20°C ~ 70°C • Load Capacitance: 18.0pF  
**ABM8-xxx-10-1-U-T Series:** • Frequency Tolerance: ±10ppm @ 25°C • Frequency Stability: ±10ppm, -10°C ~ 60°C • Operating Temperature: -10°C ~ 60°C • Load Capacitance: 10.0pF

Frequency (MHz)	Digi-Key Part No.	Cut Tape Price Each	T & R Pricing†	Abracón Part No.
		1 10 50	1,000	
<b>ABM8-xxx-B2-T Series</b>				
16.00000	535-9134-1-ND	1.40 1.15 1.02	711.48	ABM8-16.000MHZ-B2-T
18.43200	535-9135-1-ND	1.40 1.15 1.02	711.48	ABM8-18.432MHZ-B2-T
20.00000	535-9136-1-ND	1.40 1.15 1.02	711.48	ABM8-20.000MHZ-B2-T
22.11840	535-9137-1-ND	1.40 1.15 1.02	711.48	ABM8-22.1184MHZ-B2-T
24.00000	535-9138-1-ND	1.40 1.15 1.02	711.48	ABM8-24.000MHZ-B2-T
24.57600	535-9139-1-ND	1.40 1.15 1.02	711.48	ABM8-24.576MHZ-B2-T
25.00000	535-9140-1-ND	1.40 1.15 1.02	711.48	ABM8-25.000MHZ-B2-T
27.00000	535-9141-1-ND	1.40 1.15 1.02	711.48	ABM8-27.000MHZ-B2-T
28.37500	535-9142-1-ND	1.40 1.15 1.02	711.48	ABM8-28.375MHZ-B2-T
28.63636	535-9143-1-ND	1.40 1.15 1.02	711.48	ABM8-28.63636MHZ-B2-T
29.49120	535-9144-1-ND	1.40 1.15 1.02	711.48	ABM8-29.4912MHZ-B2-T
30.00000	535-9145-1-ND	1.40 1.15 1.02	711.48	ABM8-30.000MHZ-B2-T
33.00000	535-9146-1-ND	1.40 1.15 1.02	711.48	ABM8-33.000MHZ-B2-T
40.00000	535-9147-1-ND	1.40 1.15 1.02	711.48	ABM8-40.000MHZ-B2-T
44.00000	535-9148-1-ND	1.40 1.15 1.02	711.48	ABM8-44.000MHZ-B2-T
48.00000	535-9149-1-ND	1.40 1.15 1.02	711.48	ABM8-48.000MHZ-B2-T
<b>ABM8-xxx-10-1-U-T Series — Wireless Communication Crystals</b>				
13.00000	535-9673-1-ND	2.27 1.94 1.46	904.60	ABM8-13.000MHZ-10-1-U-T
14.74560	535-9674-1-ND	2.27 1.94 1.46	904.60	ABM8-14.7456MHZ-10-1-U-T
16.00000	535-9675-1-ND	2.27 1.94 1.46	904.60	ABM8-16.000MHZ-10-1-U-T
16.39400	535-9676-1-ND	2.27 1.94 1.46	904.60	ABM8-16.394MHZ-10-1-U-T
16.80000	300-8227-1-ND	1.78 1.46 1.30	904.60	ABM8-16.800MHZ-10-1-U-T
19.20000	300-8228-1-ND	1.78 1.46 1.30	904.60	ABM8-19.200MHZ-10-1-U-T
20.00000	300-8229-1-ND	2.27 1.94 1.46	904.60	ABM8-20.000MHZ-10-1-U-T
24.55350	300-8229-1-ND	1.78 1.46 1.30	904.60	ABM8-24.5535MHZ-10-1-U-T
24.57600	535-9678-1-ND	2.27 1.94 1.46	904.60	ABM8-24.576MHZ-10-1-U-T
26.00000	300-8230-1-ND	1.78 1.46 1.30	904.60	ABM8-26.000MHZ-10-1-U-T
27.00000	535-9679-1-ND	2.27 1.94 1.46	904.60	ABM8-27.000MHZ-10-1-U-T
30.00000	535-9680-1-ND	2.27 1.94 1.46	904.60	ABM8-30.000MHZ-10-1-U-T
36.00000	535-9681-1-ND	2.27 1.94 1.46	904.60	ABM8-36.000MHZ-10-1-U-T
40.00000	535-9682-1-ND	2.27 1.94 1.46	904.60	ABM8-40.000MHZ-10-1-U-T

† For Tape and Reel part number, change 1-ND to 2-ND.

**ABM9 Series 4.0 x 2.5 SMD RF Transceiver Crystals**

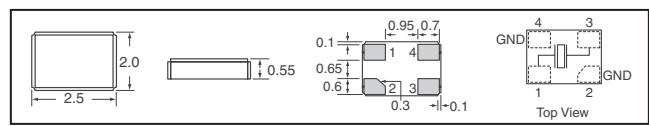


**Specifications:**  
• Frequency Stability: ±10ppm • Frequency Tolerance: ±10ppm @ 25°C • Operating Temperature: -40°C ~ 85°C • Load Capacitance: 10.0pF

Frequency (MHz)	Digi-Key Part No.	Cut Tape Price Each	T & R Pricing†	Abracón Part No.
		1 10 50	1,000	
16.000	535-9693-1-ND	1.64 1.34 1.20	833.45	ABM9-16.000MHZ-10-D-1U

† For Tape and Reel part number, change 1-ND to 2-ND.

**ABM10 Series 2.5 x 2.0 SMD Crystals**

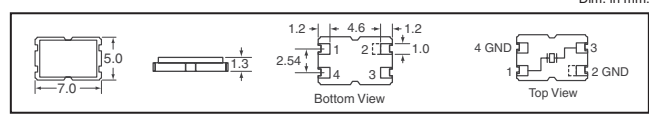


**Specifications:**  
**ABM10-xxx-E20-T Series:** • Frequency Stability: ±20ppm, -20°C ~ 70°C • Frequency Tolerance: ±20ppm • Operating Temperature: -20°C ~ 70°C • Load Capacitance: 10.0pF  
**ABM10-xxx-8-7A15-T Series:** • Frequency Stability: ±15ppm, -10°C ~ 60°C • Frequency Tolerance: ±15ppm • Operating Temperature: -10°C ~ 60°C • Load Capacitance: 8.0pF  
**ABM10-xxx-7A15-T Series:** • Frequency Stability: ±15ppm, -10°C ~ 60°C • Frequency Tolerance: ±15ppm • Operating Temperature: -10°C ~ 60°C • Load Capacitance: 10.0pF

Frequency (MHz)	Digi-Key Part No.	Cut Tape Price Each	T & R Pricing†	Abracón Part No.
		1 10 50	1,000	
<b>ABM10-xxx-E20-T Series</b>				
20.00000	535-9091-1-ND	2.29 1.88 1.67	1168.86	ABM10-20.000MHZ-E20-T
22.11840	535-9092-1-ND	2.29 1.88 1.67	1168.86	ABM10-22.1184MHZ-E20-T
24.00000	535-9093-1-ND	2.29 1.88 1.67	1168.86	ABM10-24.000MHZ-E20-T
24.57600	535-9094-1-ND	2.29 1.88 1.67	1168.86	ABM10-24.576MHZ-E20-T
25.00000	535-9095-1-ND	2.29 1.88 1.67	1168.86	ABM10-25.000MHZ-E20-T
27.00000	535-9096-1-ND	2.29 1.88 1.67	1168.86	ABM10-27.000MHZ-E20-T
30.00000	535-9097-1-ND	2.29 1.88 1.67	1168.86	ABM10-30.000MHZ-E20-T
40.00000	535-9098-1-ND	2.29 1.88 1.67	1168.86	ABM10-40.000MHZ-E20-T
48.00000	535-9099-1-ND	2.29 1.88 1.67	1168.86	ABM10-48.000MHZ-E20-T
<b>ABM10-xxx-8-7A15-T Series — Crystals for Wireless, Bluetooth and A/W/O</b>				
24.00000	535-9622-1-ND	2.93 2.51 1.88	1168.86	ABM10-24.000MHZ-8-7A15-T
28.63636	535-9623-1-ND	2.93 2.51 1.88	1168.86	ABM10-28.63636MHZ-8-7A15-T
32.00000	535-9625-1-ND	2.93 2.51 1.88	1168.86	ABM10-32.000MHZ-8-7A15-T
40.00000	535-9627-1-ND	2.93 2.51 1.88	1168.86	ABM10-40.000MHZ-8-7A15-T
<b>ABM10-xxx-7A15-T Series — Crystals for Wireless, Bluetooth and A/W/O</b>				
26.00000	535-9624-1-ND	2.93 2.51 1.88	1168.86	ABM10-26.000MHZ-7A15-T
32.00000	535-9626-1-ND	2.93 2.51 1.88	1168.86	ABM10-32.000MHZ-7A15-T

† For Tape and Reel part number, change 1-ND to 2-ND.

**ABMM Series 5.0 x 7.0 SMD Crystals**

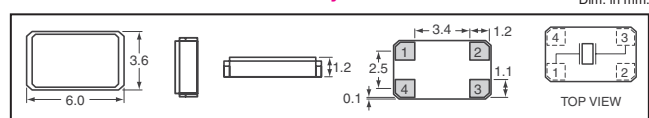


**Specifications:** • Frequency Stability: ±50ppm, -20°C ~ 70°C • Frequency Tolerance: ±20ppm • Operating Temperature: -20°C ~ 70°C • Load Capacitance: 18.0pF

Frequency (MHz)	Digi-Key Part No.	Cut Tape Price Each	T & R Pricing†	Abracón Part No.
		1 10 50	1,000	
8.00000	535-9164-1-ND	.64 .53 .47	325.25	ABMM-8.000MHZ-B2-T
10.00000	535-9150-1-ND	.64 .53 .47	325.25	ABMM-10.000MHZ-B2-T
11.05920	535-9151-1-ND	.64 .53 .47	325.25	ABMM-11.0592MHZ-B2-T
12.00000	535-9152-1-ND	.64 .53 .47	325.25	ABMM-12.000MHZ-B2-T
14.31818	535-9153-1-ND	.64 .53 .47	325.25	ABMM-14.31818MHZ-B2-T
14.74560	535-9154-1-ND	.64 .53 .47	325.25	ABMM-14.7456MHZ-B2-T
16.00000	535-9155-1-ND	.64 .53 .47	325.25	ABMM-16.000MHZ-B2-T
16.93440	535-9156-1-ND	.64 .53 .47	325.25	ABMM-16.9344MHZ-B2-T
19.66080	535-9157-1-ND	.64 .53 .47	325.25	ABMM-19.6608MHZ-B2-T
20.00000	535-9158-1-ND	.64 .53 .47	325.25	ABMM-20.000MHZ-B2-T
24.00000	535-9159-1-ND	.64 .53 .47	325.25	ABMM-24.000MHZ-B2-T
24.57600	535-9160-1-ND	.64 .53 .47	325.25	ABMM-24.576MHZ-B2-T
25.00000	535-9161-1-ND	.64 .53 .47	325.25	ABMM-25.000MHZ-B2-T
27.00000	535-9162-1-ND	.64 .53 .47	325.25	ABMM-27.000MHZ-B2-T
32.00000	535-9163-1-ND	.64 .53 .47	325.25	ABMM-32.000MHZ-B2-T

† For Tape and Reel part number, change 1-ND to 2-ND.

**ABMM2 Series 6.0 x 3.6 SMD Crystals**



**Specifications:** • Frequency Stability: ±20ppm, -20°C ~ 70°C • Frequency Tolerance: ±20ppm • Operating Temperature: -20°C ~ 70°C • Load Capacitance: 18.0pF

Frequency (MHz)	Digi-Key Part No.	Cut Tape Price Each	T & R Pricing†	Abracón Part No.
		1 10 50	1,000	
8.00000	535-9628-1-ND	.86 .75 .56	345.58	ABMM2-8.000MHZ-E2-T
10.00000	535-9629-1-ND	.86 .75 .56	345.58	ABMM2-10.000MHZ-E2-T
11.05920	535-9630-1-ND	.86 .75 .56	345.58	ABMM2-11.0592MHZ-E2-T
12.00000	535-9631-1-ND	.86 .75 .56	345.58	ABMM2-12.000MHZ-E2-T
14.31818	535-9632-1-ND	.86 .75 .56	345.58	ABMM2-14.31818MHZ-E2-T
14.74560	535-9633-1-ND	.86 .75 .56	345.58	ABMM2-14.7456MHZ-E2-T
16.00000	535-9634-1-ND	.86 .75 .56	345.58	ABMM2-16.000MHZ-E2-T
16.93440	535-9635-1-ND	.86 .75 .56	345.58	ABMM2-16.9344MHZ-E2-T
19.66080	535-9636-1-ND	.86 .75 .56	345.58	ABMM2-19.6608MHZ-E2-T
20.00000	535-9637-1-ND	.86 .75 .56	345.58	ABMM2-20.000MHZ-E2-T
24.00000	535-9638-1-ND	.86 .75 .56	345.58	ABMM2-24.000MHZ-E2-T
24.57600	535-9639-1-ND	.86 .75 .56	345.58	ABMM2-24.576MHZ-E2-T
25.00000	535-9640-1-ND	.86 .75 .56	345.58	ABMM2-25.000MHZ-E2-T
27.00000	535-9641-1-ND	.86 .75 .56	345.58	ABMM2-27.000MHZ-E2-T
32.00000	535-9642-1-			

Specifications: • Frequency: 32.768kHz • Frequency Tolerance: ±20ppm

Fig.	Load Cap. (pF)	Operating Temperature (°C)	Digi-Key Part No.	Cut Tape Price Each			Tape & Reel†		Abracon Part No.
				1	10	50	Qty.	Pricing	
<b>Through Hole Tuning Fork Crystals</b>									
1	12.5	-20 ~ 70	535-9031-ND‡	.54	.46	.42	—	—	AB15T-32.768KHZ
	12.5	-10 ~ 60	535-9032-ND‡	.18	.16	.14	—	—	AB26T-32.768KHZ
	12.5	-10 ~ 60	535-9034-ND‡	.18	.16	.14	—	—	AB38T-32.768KHZ
<b>Surface Mount Tuning Fork Crystals</b>									
2	12.5	-40 ~ 85	535-9033-1-ND	.44	.37	.28	2,000	172.79/M	AB26TRB-32.768KHZ-T
3	12.5	-40 ~ 85	535-9165-1-ND	.94	.81	.61	3,000	376.07/M	ABS13-32.768KHZ-T
4	12.5	-40 ~ 85	535-9166-1-ND	.61	.53	.40	3,000	243.94/M	ABS25-32.768KHZ-T
5	12.5	-40 ~ 85	535-9536-1-ND	.76	.66	.49	3,000	304.92/M	ABS10-32.768KHZ-T
	7.0	-40 ~ 85	535-9537-1-ND	.76	.66	.49	3,000	304.92/M	ABS10-32.768KHZ-7-T
	9.0	-40 ~ 85	535-9538-1-ND	.76	.66	.49	3,000	304.92/M	ABS10-32.768KHZ-9-T
	12.5	-40 ~ 85	535-9539-1-ND	.89	.77	.58	3,000	355.74/M	ABS09-32.768KHZ-T
	7.0	-40 ~ 85	535-9540-1-ND	.89	.77	.58	3,000	355.74/M	ABS09-32.768KHZ-7-T
	9.0	-40 ~ 85	535-9541-1-ND	.89	.77	.58	3,000	355.74/M	ABS09-32.768KHZ-9-T
	12.5	-40 ~ 85	535-9542-1-ND	1.07	.92	.69	3,000	426.89/M	ABS07-32.768KHZ-T
	7.0	-40 ~ 85	535-9543-1-ND	1.07	.92	.69	3,000	426.89/M	ABS07-32.768KHZ-7-T
	9.0	-40 ~ 85	535-9544-1-ND	1.07	.92	.69	3,000	426.89/M	ABS07-32.768KHZ-9-T

Specifications: • Frequency: 32.768kHz • Operating Temperature: -40°C ~ 85°C

Fig.	Supply Voltage (V)	Frequency Stability (ppm)	Digi-Key Part No.	Cut Tape Price Each			Tape & Reel†		Abracon Part No.
				1	10	50	Qty.	Pricing	
<b>32.768kHz Surface Mount Oscillators</b>									
6	3.3	±20	535-9545-1-ND	2.80	2.40	1.80	1,000	1118.04	ASVK-32.768KHZ-LJT
7	3.3	±20	535-9546-1-ND	3.18	2.73	2.05	1,000	1270.50	ASFLK-32.768KHZ-LJT
8	3.3	-140 ~ 10	535-9717-1-ND	3.18	2.73	2.05	1,000	1270.50	ASHK4-32.768KHZ-LT
	1.8	-140 ~ 10	535-9718-1-ND	3.18	2.73	2.05	1,000	1270.50	ASHK4-32.768KHZ-LT
8	1.8	-140 ~ 0	535-9719-1-ND	3.18	2.73	2.05	1,000	1270.50	ASHK5-32.768KHZ-LT
	1.5	-140 ~ 0	535-9719-1-ND	3.18	2.73	2.05	1,000	1270.50	ASHK5-32.768KHZ-LT

† For Tape and Reel part number, change 1-ND to 2-ND. ‡ Bulk Pricing

Dim.	A	B (Max.)	C	D	E
AB15T	ø1.4	5.1	4.3 (Typ.)	0.45	ø0.2
AB26T	ø2.1	6.2	9.0 (Min.)	0.80	ø0.26
AB38T	ø3.2	8.3	9.0 (Min.)	1.10	ø0.35

Dim.	L	W	H
ABS10	4.9	1.8	1.0
ABS09	4.1	1.5	0.9
ABS07	3.2	1.5	0.9

Pin	Function
1	Tri-state or NC
2	GND
3	Output
4	Vcc

Pin	Function
1	E/D
2	GND
3	Output
4	Vcc

Pin	Function
1	Tri-state
2	GND
3	Output
4	Vcc

## Oscillators

### ACH and ACO Series Oscillators

Specifications: • Frequency Stability: ±30ppm; -20°C ~ 70°C • Operating Temperature: -20°C ~ 70°C

Features: • HCMOS and TTL compatible

Dim. in mm.

Fig.	Frequency (MHz)	Digi-Key Part No.	1	Price Each	100	500	Abracon Part No.
<b>ACH Series Half Size Oscillators — 5.0V</b>							
1	14.31818	535-9170-5-ND	.94	.85	.68	.61	ACH-14.31818MHZ-EK
	40.00000	535-9180-5-ND	.94	.85	.68	.61	ACH-40.000MHZ-EK
<b>ACHL Series Half Size Oscillators — 3.3V</b>							
1	3.68640	535-9197-5-ND	.94	.85	.68	.61	ACHL-3.6864MHZ-EK
	32.00000	535-9195-5-ND	.94	.85	.68	.61	ACHL-32.000MHZ-EK
<b>ACO Series Full Size Oscillators — 5.0V</b>							
2	4.00000	535-9218-5-ND	.94	.85	.68	.61	ACO-4.000MHZ-EK
	14.31818	535-9206-5-ND	.94	.85	.68	.61	ACO-14.31818MHZ-EK
<b>ACOL Series Full Size Oscillators — 3.3V</b>							
2	25.00000	535-9229-5-ND	.94	.85	.68	.61	ACOL-25.000MHZ-EK
	50.00000	535-9237-5-ND	.94	.85	.68	.61	ACOL-50.000MHZ-EK

### ASD Series 2.5 x 2.0 SMD Oscillators

Specifications: • Frequency Stability: ±50ppm • Operating Temperature: -20°C ~ 70°C

Note: For nonstandard frequencies, please reference AP2S Series Programmable Oscillators.

Dim. in mm.

Pin	Function
1	Enable/Disable (STBY)*
2	GND/Case
3	Output
4	Vdd

\* H or Open = Oscillation  
L = Oscillation stops/Hi impedance

Frequency (MHz)	Digi-Key Part No.	1	Price Each	100	500	Digi-Key Part No.	Tape & Reel Pricing	Abracon Part No.
<b>ASD1 Series — 3.0V</b>								
1.54400	535-9579-1-ND	4.20	3.60	2.70	2.40	535-9579-2-ND	1677.06	ASD1-1.544MHZ-ECT
3.68640	535-9580-1-ND	4.20	3.60	2.70	2.40	535-9580-2-ND	1677.06	ASD1-3.6864MHZ-ECT
4.00000	535-9581-1-ND	4.20	3.60	2.70	2.40	535-9581-2-ND	1677.06	ASD1-4.000MHZ-ECT
7.37280	535-9582-1-ND	4.20	3.60	2.70	2.40	535-9582-2-ND	1677.06	ASD1-7.3728MHZ-ECT
8.00000	535-9583-1-ND	4.20	3.60	2.70	2.40	535-9583-2-ND	1677.06	ASD1-8.000MHZ-ECT
10.00000	535-9584-1-ND	4.20	3.60	2.70	2.40	535-9584-2-ND	1677.06	ASD1-10.000MHZ-ECT
11.05920	535-9585-1-ND	4.20	3.60	2.70	2.40	535-9585-2-ND	1677.06	ASD1-11.0592MHZ-ECT
12.00000	535-9586-1-ND	4.20	3.60	2.70	2.40	535-9586-2-ND	1677.06	ASD1-12.000MHZ-ECT
14.31818	535-9587-1-ND	4.20	3.60	2.70	2.40	535-9587-2-ND	1677.06	ASD1-14.31818MHZ-ECT
14.74560	535-9588-1-ND	4.20	3.60	2.70	2.40	535-9588-2-ND	1677.06	ASD1-14.7456MHZ-ECT
18.43200	535-9589-1-ND	4.20	3.60	2.70	2.40	535-9589-2-ND	1677.06	ASD1-18.432MHZ-ECT
20.00000	535-9590-1-ND	4.20	3.60	2.70	2.40	535-9590-2-ND	1677.06	ASD1-20.000MHZ-ECT
24.00000	535-9591-1-ND	4.20	3.60	2.70	2.40	535-9591-2-ND	1677.06	ASD1-24.000MHZ-ECT
24.57600	535-9592-1-ND	4.20	3.60	2.70	2.40	535-9592-2-ND	1677.06	ASD1-24.576MHZ-ECT
25.00000	535-9593-1-ND	4.20	3.60	2.70	2.40	535-9593-2-ND	1677.06	ASD1-25.000MHZ-ECT
27.00000	535-9594-1-ND	4.20	3.60	2.70	2.40	535-9594-2-ND	1677.06	ASD1-27.000MHZ-ECT
30.00000	535-9595-1-ND	4.20	3.60	2.70	2.40	535-9595-2-ND	1677.06	ASD1-30.000MHZ-ECT
32.00000	535-9596-1-ND	4.20	3.60	2.70	2.40	535-9596-2-ND	1677.06	ASD1-32.000MHZ-ECT
33.00000	535-9597-1-ND	4.20	3.60	2.70	2.40	535-9597-2-ND	1677.06	ASD1-33.000MHZ-ECT

(Continued)

**Digi-Reel®** Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

**Free shipping on orders over £50! All prices are in British pound sterling and include duties.**

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