

# AVX Resonators, Filters and Crystal Units



**A** Built-in capacitors

Recommended land pattern

**B**

Recommended land pattern

**C**

Recommended land pattern

**D**

CODE	L	W
KNH21	2.0±0.2	1.25±0.02
CODE	T	G
KNH21	0.85±0.15	0.40±0.30
KNH21C106DA	1.0±0.15	-
CODE	P	R
KNH21	0.30±0.20	±0.01

**E**

Recommended land pattern

**F**

Recommended land pattern

**DIMENSIONS: mm**

Test Circuit

Vdd: 5V  
Rf: 1MΩ  
IC: MC14069UB (3.58 to 8MHz)  
MC74HC04 (8 to 20MHz)  
C1, C2: 30pF 3.58 to 8 MHz (typ)  
30pF 8.01 - 20 MHz (typ)

RoHS Compliant

## RESONATORS

AVX produces a broad range of high quality ceramic resonators. The high quality and extensive coverage of this product line allows optimum design of almost any oscillating circuit. Ceramic resonators stand between quartz crystal oscillators and LC/RC oscillators in regard to accuracy but are considerably smaller, require no adjustments, have improved start-up times, and are low in cost.

### Specifications:

- Temperature Characteristics: -20°C to +80°C
- Resonant Impedance: 2.00-2.90MHz = 200 ohm max
- Frequency Tolerance: ±0.5%
- 3.00-3.57MHz = 100 ohm max
- 3.58-8.00MHz = 30 ohm max
- 8.01-20.00MHz = ohm max

MOUSER STOCK NO.	AVX Part No.	Fig.	Frequency (MHz)	Load Capacitance	Price Each					Reel Quantity	Price Per Piece
					1	10	100	500	1000		
581-PBRC-2.00B	PBRC2.00HR50X000	A	2.00	33pF	.86	.74	.57	.46	.43	2000	.40
581-PBRC-2.45B	PBRC2.45HR50X000	A	2.45	33pF	3.50	2.70	1.86	1.48	1.11	2000	.88
581-PBRC-3.58B	PBRC3.58HR50X000	A	3.58	33pF	.56	.48	.37	.30	.28	2000	.26
581-PBRC-3.68B	PBRC3.68HR50X000	A	3.68	33pF	.47	.40	.31	.25	.22	2000	.219
581-PBRC-4.00B	PBRC4.00HR50X000	A	4.00	33pF	.47	.40	.31	.25	.22	2000	.219
581-PBRC-5.00H	PBRC5.00HR50X000	A	5.00	33pF	.69	.66	.62	.58	.57	2000	.56
581-PBRC-6.00B	PBRC6.00HR50X000	A	6.00	33pF	.56	.48	.37	.30	.28	2000	.26
581-PBRC-7.37B	PBRC7.37HR50X000	A	7.37	33pF	2.73	1.64	.96	.89	.82	2000	.68
581-PBRC-8.00B	PBRC8.00HR50X000	A	8.00	33pF	.56	.48	.37	.30	.28	2000	.26
581-PBRC-11.0592BR07	PBRC11.06HR70X000	A	11.06	10pF	4.99	3.24	2.88	1.69	1.40	2000	1.26
581-PBRC-14.74BR07	PBRC14.74HR70X000	A	14.74	10pF	2.88	2.77	1.62	1.50	1.39	2000	1.00
581-PBRC-4.00A	PBRC-4.00AR	B	4.00	none	.69	.66	.62	.58	.57	2000	.56
581-PBRC-20.00G	PBRC-20.00AR	B	20.00	none	1.35	1.24	.92	.82	.78	2000	.73
581-PBRC4.00MR50X	PBRC4.00MR50X000	C	4.00	15pF	.49	.42	.39	.29	.26	3000	.228
581-PBRC4.91MR50X	PBRC4.91MR50X000	C	4.91	15pF	.49	.42	.39	.29	.26	3000	.228
581-PBRC5.00MR50X	PBRC5.00MR50X000	C	5.00	15pF	.56	.48	.45	.33	.30	3000	.26
581-PBRC6.00MR50X	PBRC6.00MR50X000	C	6.00	15pF	.56	.48	.45	.33	.30	3000	.26
581-PBRC7.37MR50X	PBRC7.37MR50X000	C	7.37	15pF	.56	.48	.45	.33	.30	3000	.26
581-PBRC8.00MR50X	PBRC8.00MR50X000	C	8.00	15pF	.56	.48	.45	.33	.30	3000	.26
581-PBRC10.00MR70X	PBRC10.00MR70X000	C	10.00	10pF	.71	.60	.55	.51	.50	3000	.49
581-PBRC12.00MR70X	PBRC12.00MR70X000	C	12.00	10pF	.41	.39	.37	.35	.34	3000	.33
581-PBRC20.00MR70X	PBRC20.00MR70X000	C	20.00	10pF	.69	.66	.62	.58	.57	3000	.56

## KNH21 SERIES EMI FILTERS

**Features:**

- 0805 Size. Rated current up to 6A MAX
- Effective for filtering noise on power (Vcc) lines

MOUSER STOCK NO.	AVX Part No.	Fig.	Capacitance	Rated Current	Rated Voltage	Price Each					Reel Quantity	Price Per Piece
						1	10	100	500	1000		
581-KNH21C104DA3T	KNH21C104DA3T	D	100,000pf	2.0A	25VDC	.81	.77	.45	.26	.182	3000	.126
581-KNH21C105DA3T	KNH21C105DA3T	D	1,000,000pf	4.0A	10VDC	1.35	1.32	.78	.45	.31	3000	.216
581-KNH21C473DA3T	KNH21C473DA3T	D	47,000pf	2.0A	50VDC	.81	.77	.45	.26	.182	3000	.126

## ST2012SB/ST3215SB KHZ RANGE CRYSTAL DEVICES

**Features:**

- Small, Low Profile
- Ceramic Package
- Pb Free
- Reflow Compatible

MOUSER STOCK NO.	AVX Part No.	Fig.	Frequency (MHz)	Load Capacitance	Price Each					Reel Quantity	Price Per Piece
					1	10	100	500	1000		
<b>Dimensions: 2.0x1.2mm</b>											
581-ST2012SB32H5HPWAA	ST2012SB32768H5HPWAA	E	32.768	12.5pf	1.22	1.15	.937	.857	.821	3000	.769
581-ST2012SB32E0HPWB	ST2012SB32768E0HPWB	E	32.768	9.0pf	1.22	1.15	.937	.857	.821	3000	.769
581-ST2012SB32C0HPWB	ST2012SB32768C0HPWB	E	32.768	7.0pf	1.22	1.15	.937	.857	.821	3000	.769
<b>Dimensions: 3.2x1.5mm</b>											
581-ST3232768H5HPWAA	ST3215SB32768H5HPWAA	E	32.768	12.5pf	1.50	1.41	1.12	.90	.85	3000	.75
581-ST3232768E0HPWB	ST3215SB32768E0HPWB	E	32.768	9pf	1.50	1.41	1.12	.90	.85	3000	.75

## CX3225GB SMT CRYSTAL UNITS

**Features:**

- Crystal unit for consumer products
- Ceramic Package
- Product with lead free terminations
- Reflow Compatible

Part No.	Frequency (MHz)	Fig.	Capacitance	Price Each					Reel Quantity	Price Per Piece
				1	10	100	500	1000		
581-CX3225GB10000HE	10	F	8pf	1.30	1.06	.858	.702	.546	3000	.364
581-CX3225GB12000HE	12	F	8pf	1.30	1.06	.858	.702	.546	3000	.364
581-CX3225GB14318HE	14	F	8pf	1.30	1.06	.858	.702	.546	3000	.364
581-CX3225GB16000HE	16	F	8pf	1.30	1.06	.858	.702	.546	3000	.364
581-CX3225GB20000HE	20	F	8pf	1.30	1.06	.858	.702	.546	3000	.364
581-CX3225GB24000HE	24	F	8pf	1.30	1.06	.858	.702	.546	3000	.364
581-CX3225GB25000HE	25	F	8pf	1.30	1.06	.858	.702	.546	3000	.364
581-CX3225GB27000HE	27	F	8pf	1.30	1.06	.858	.702	.546	3000	.364
581-CX3225GB32000HE	32	F	8pf	1.30	1.06	.858	.702	.546	3000	.364
581-CX3225GB40000HE	40	F	8pf	1.30	1.06	.858	.702	.546	3000	.364
581-CX3225GB48000HE	48	F	8pf	1.30	1.06	.858	.702	.546	3000	.364
581-CX3225GB10000HP	10	F	8pf	1.65	1.35	1.08	.891	.693	3000	.462
581-CX3225GB12000HP	12	F	8pf	1.65	1.35	1.08	.891	.693	3000	.462
581-CX3225GB14318HP	14	F	8pf	1.65	1.35	1.08	.891	.693	3000	.462
581-CX3225GB16000HP	16	F	8pf	1.65	1.35	1.08	.891	.693	3000	.462
581-CX3225GB20000HP	20	F	8pf	1.65	1.35	1.08	.891	.693	3000	.462
581-CX3225GB24000HP	24	F	8pf	1.65	1.35	1.08	.891	.693	3000	.462
581-CX3225GB25000HP	25	F	8pf	1.65	1.35	1.08	.891	.693	3000	.462
581-CX3225GB27000HP	27	F	8pf	1.65	1.35	1.08	.891	.693	3000	.462
581-CX3225GB32000HP	32	F	8pf	1.65	1.35	1.08	.891	.693	3000	.462
581-CX3225GB40000HP	40	F	8pf	1.65	1.35	1.08	.891	.693	3000	.462
581-CX3225GB48000HP	48	F	8pf	1.65	1.35	1.08	.891	.693	3000	.462

© Copyright 2012 Mouser Electronics

© Copyright 2012 Mouser Electronics

[mouser.com/avx](http://mouser.com/avx)

a tti company

(800) 346-6873

1095

Frequency Control

AVX