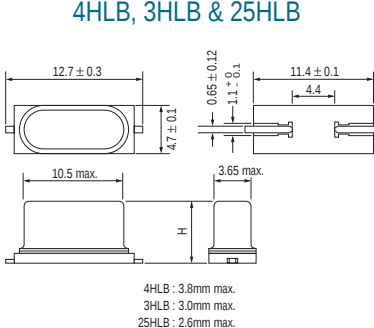
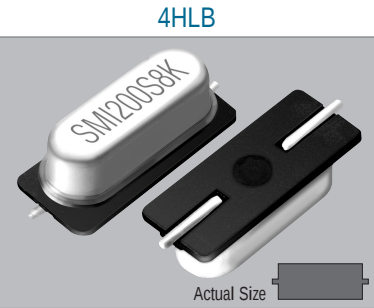
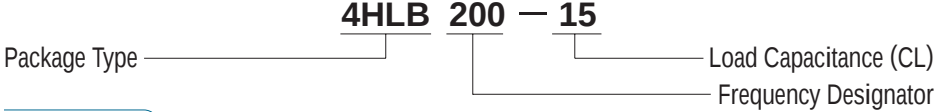




STANDARD SPECIFICATIONS

- 1. Package type 4HLB, 3HLB & 25HLB
- 2. Frequency range 4HLB: 3.27680 MHz to 70.000 MHz
3HLB: 4.000 MHz to 70.000 MHz
25HLB: 20.000 MHz to 70.000 MHz
- 3. Calibration tolerance ± 50 ppm at $+25^{\circ}\text{C} \pm 3^{\circ}\text{C}$
- 4. Temperature stability (referred to $+25^{\circ}\text{C}$) ± 50 ppm over -20°C to $+70^{\circ}\text{C}$ (AT-Cut)
 ± 100 ppm over -10°C to $+60^{\circ}\text{C}$ (BT-Cut)
- 5. Load capacitance 18 pF
- 6. Shunt capacitance (Co) 7 pF max.
- 7. Drive level (P) 100 μW max.
- 8. Aging ± 5 ppm max. at $+25^{\circ}\text{C} \pm 3^{\circ}\text{C}$ per year
- 9. Cut AT-Cut or BT-Cut
- 10. Reflow soldering condition 10 seconds max. at $+235^{\circ}\text{C} \pm 5^{\circ}\text{C}$

PART NUMBERING GUIDE



EXAMPLE

CIRCUIT CALIBRATION CONDITION	FREQUENCY	PACKAGE	SMI PART NO.
Parallel Resonance CL = 15 pF (Optional)	200 = 20.000 MHz	4HLB	4HLB200 –15
Parallel Resonance CL = 18 pF	040 = 4.000 MHz	3HLB	3HLB040 –18
Series Resonance = S (Optional)	500 = 50.000 MHz	25HLB	25HLB500S

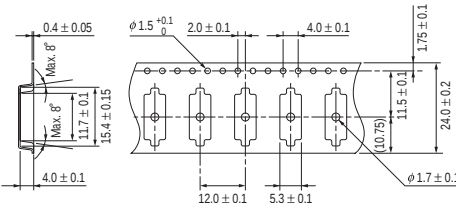
HOW TO ORDER STANDARD SMI CRYSTALS

Order by SMI Part No.

PACKAGE DATA

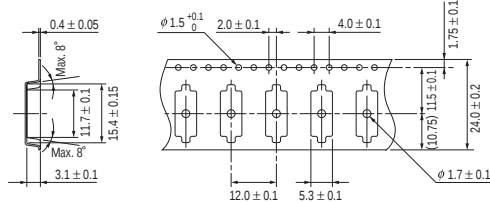
Item	Package	4HLB	3HLB	25HLB
COVER		Metal	Metal	Metal
BASE		Metal	Metal	Metal
INSULATOR		PPS	PPS	PPS
SEALING		Resistance–weld	Resistance–weld	Resistance–weld
TERMINAL PLATING		Solder	Solder	Solder

TAPE SPECIFICATIONS for 4HLB



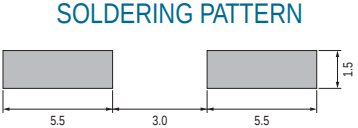
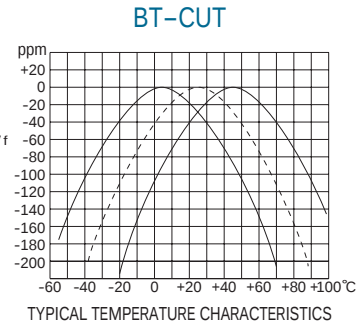
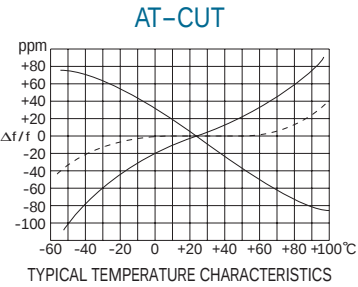
1000pcs. per reel (300mm dia.)

TAPE SPECIFICATIONS for 3HLB & 25HLB



1000pcs. per reel (300mm dia.)

LB STANDARD FREQUENCIES



FREQUENCY MHz	FREQUENCY DESIGNATOR	MAXIMUM EQUIVALENT SERIES RESISTANCE OHMS	FREQUENCY MHz	FREQUENCY DESIGNATOR	MAXIMUM EQUIVALENT SERIES RESISTANCE OHMS
3.276800	032	200	16.000312	160003	50
3.579545	035	200	16.044000	1604	50
3.648000	0364	200	16.128000	1612	50
3.686400	0368	200	16.147200	1614	50
3.802000	038	200	16.257000	162	50
3.840000	0384	200	16.384000	163	50
3.932160	039	200	16.667000	166	50
4.000000	040	150	16.934400	169	50
4.032000	0403	150	17.000000	170	50
4.096000	0409	150	17.100000	171	50
4.194304	041	150	17.700000	177	50
4.200000	042	150	17.734475	1773	50
4.433619	044	150	18.000000	180	50
4.500000	045	150	18.432000	184	50
4.608000	046	150	18.867000	188	50
4.800000	048	150	18.869000	1886	50
4.883300	0488	150	18.870000	1887	50
4.915200	049	150	19.200000	192	50
5.120000	051	120	19.660800	196	50
5.699623	056	120	20.000000	200	40
6.000000	060	100	20.480000	204	40
6.144000	061	100	20.736000	207	40
6.500000	065	100	22.118400	221	40
7.250000	072	80	24.000000	240	40
7.372800	073	80	24.000140	240001	40
7.680000	076	80	24.576000	245	40
7.864320	078	80	25.000000	250	40
8.000000	080	80	25.175000	251	40
9.090500	0909	60	25.312000	253	40
9.216000	092	60	27.000000	270	40
9.600000	096	60	28.000000	280	40
9.756000	097	60	28.224000	282	40
9.830400	098	60	28.636363	286	40
10.000000	100	60	28.800000	288	40
10.240000	1024	60	29.491200	294	40
10.752000	1075	60	30.000000	300	40
11.000000	110	60	32.000000	320	40
11.059200	1105	60	32.215909	322	40
11.673600	116	60	33.333000	333	40
11.700000	117	60	33.868800	338	40
12.000000	120	60	35.251200	352	40
12.096000	1209	60	35.468950	354	40
12.288000	122	60	36.000000	360	40
12.296000	1229	60	40.000000	400	40
13.500000	135	60	40.320000	403	40
14.318180	143	50	44.236800	442	80
14.400000	144	50	48.000000	480	80
14.484000	1448	50	49.920000	499	80
14.644000	146	50	50.000000	500	80
14.745600	147	50	50.680000	506	80 AT-Cut 3RD OT
15.000000	150	50	52.416000	524	80 AT-Cut 3RD OT
15.360000	153	50	56.448000	564	80 AT-Cut 3RD OT
15.500000	155	50	59.800000	598	80 AT-Cut 3RD OT
15.728640	157	50	64.000000	640	80 AT-Cut 3RD OT
16.000000	160	50	80.000000	800	80 AT-Cut 3RD OT