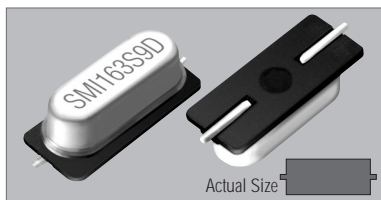


4HLB



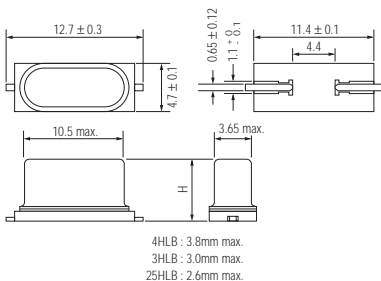
3HLB



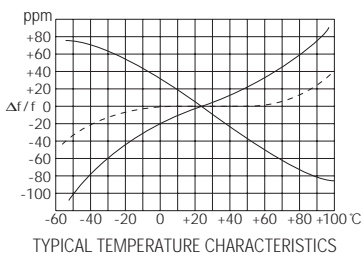
25HLB



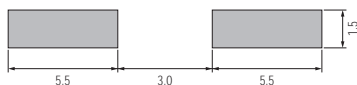
4HLB, 3HLB & 25HLB



AT-CUT



SOLDERING PATTERN



SPECIFICATIONS

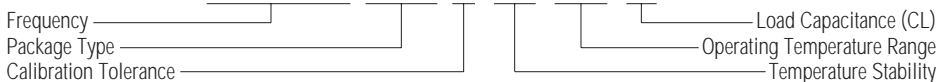
- Package type 4HLB, 3HLB & 25HLB
- Frequency range 4HLB : 3.579545 MHz to 80.000 MHz
3HLB : 4.000 MHz to 70.000 MHz
25HLB : 20.000 MHz to 70.000 MHz
- Calibration tolerance O: ± 10 ppm at +25°C ± 3°C
Q: ± 15 ppm at +25°C ± 3°C
R: ± 20 ppm at +25°C ± 3°C
T: ± 30 ppm at +25°C ± 3°C
- Temperature stability (referred to +25°C) See table below

Ope. Temp. Range	Stability	PPM					
		± 5.0 (JJ)	± 7.5 (LL)	± 10 (OO)	± 15 (OO)	± 20 (RR)	± 30 (TT)
0 – +50°C (eee)	○						
-10 – +50°C (gee)	○						
-10 – +60°C (ggg)	○						
-10 – +70°C (gii)							
-20 – +70°C (iii)							
-30 – +75°C (kii)							
-30 – +80°C (kkk)							
-35 – +80°C (lkk)							
-40 – +85°C (mll)							

- Equivalent series resistance (ESR) See table below
- | FREQUENCY | 3.579 MHz+ | 4.000 MHz+ | 5.000 MHz+ | 6.000 MHz+ | 7.000 MHz+ |
|-----------|------------|------------|------------|------------|------------|
| ESR | 200 Ω max. | 150 Ω max. | 120 Ω max. | 100 Ω max. | 80 Ω max. |
- | FREQUENCY | 9.000 MHz+ | 13.000 MHz+ | 20.000 MHz+ | 36.000 MHz+ (30T) |
|-----------|------------|-------------|-------------|-------------------|
| ESR | 60 Ω max. | 50 Ω max. | 40 Ω max. | 70 Ω max. |
- Shunt capacitance (Co) 5 pF max.
 - Drive level (P) 100 μW max. (10 μW for testing)
 - Aging ± 5 ppm max. at +25°C per year
 - Cut AT-Cut
 - Reflow soldering condition 10 seconds max. at +235°C ± 5°C

PART NUMBERING GUIDE

16.384 MHz 3HLB Q / OO / ggg / 16



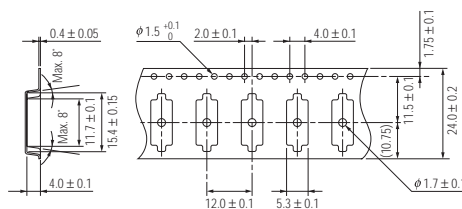
EXAMPLE

FREQUENCY	PACKAGE	CALIBRATION TOLERANCE	TEMPERATURE STABILITY	OPERATING TEMPERATURE RANGE	LOAD CAPACITANCE	PART NUMBER
16.384 MHz	3HLB	Q=± 15 ppm	OO=± 10 ppm	ggg = -10°C to +60°C	16 pF	16.384 MHz 3HLB Q/OO/ggg/16
19.680 MHz	4HLB	R=± 20 ppm	TT=± 30 ppm	kkk = -30°C to +80°C	22 pF	19.680 MHz 4HLB R/TT/kkk/22

PACKAGE DATA

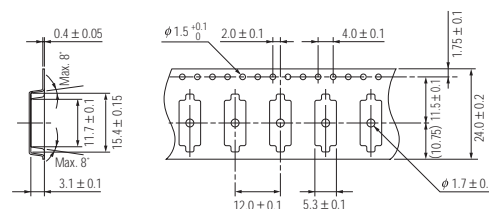
Item	Package	4HLB	3HLB	25HLB
COVER		Metal	Metal	Metal
BASE		Metal	Metal	Metal
INSULATOR		PPS	PPS	PPS
SEALING		Resistance-weld	Resistance-weld	Resistance-weld
TERMINAL PLATING		Solder	Solder	Solder

TAPE SPECIFICATIONS for 4HLB



1000pcs. per reel (300mm dia.)

TAPE SPECIFICATIONS for 3HLB & 25HLB



1000pcs. per reel (300mm dia.)