



5.0 x 3.2 x 1.6 mm

# 5.0 Vdc or 3.3 Vdc • LOW PROFILE ULTRA MINIATURE CERAMIC SURFACE MOUNT CRYSTAL CLOCK OSCILLATORS ASF1, ASFL and ASFL1

## FEATURES:

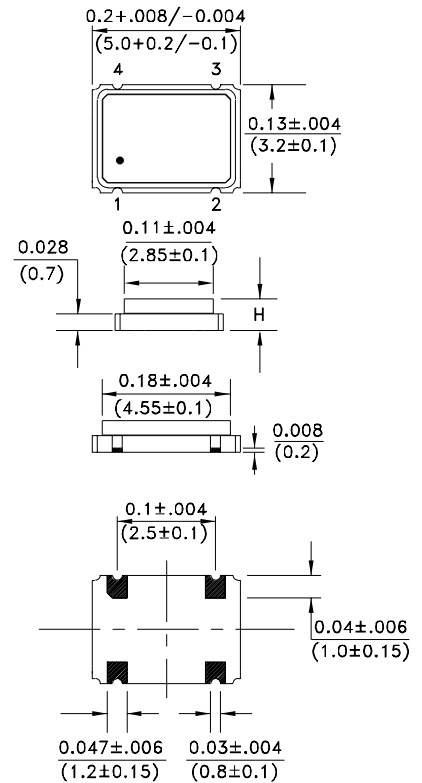
- Compact and low in height.(1.6 mm or 1.2 mm max.)
- Low current consumption.
- Tri state function.
- Suitable for high density SMT., Reflow capable.
- Tight stability option.
- Glass sealed package.

## APPLICATIONS:

- CCD clock for VTR camera.
- Equipment connected to PC or PC cards.
- Thin equipment.

## STANDARD SPECIFICATIONS

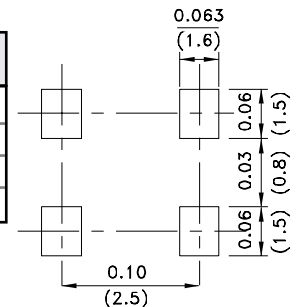
PARAMETERS	ASF1	ASFL	ASFL1
Frequency Range (F <sub>0</sub> )	1.50MHz ~ 125MHz		
Operating Temperature (T <sub>OPR</sub> )	-10°C to +70°C		
Storage Temperature (T <sub>STO</sub> )	-50°C to +125°C		
Frequency Stability (ΔF/ F <sub>0</sub> )	±100ppm max. (See Options)		
Supply Voltage (V <sub>dd</sub> )	5.0 Vdc ±10%	3.3Vdc ±10%	
Input Current (I <sub>dd</sub> )	20mA max. 45mA max. 50mA max. 100mA max.	12mA max. for (F < 33MHz) 25mA max. for (F < 50MHz) 35mA max. for (F < 70MHz) 60mA max. for (F ≤ 125MHz)	
Duty Cycle or Symmetry	40 / 60% max. (See Options)		
Rise and Fall Times (T <sub>R</sub> / T <sub>F</sub> )	6ns max.		
Output Load	5TTL or 15pF(50pF max.) 2TTL or 15pF	5TTL or 15pF(30pF max.) for F < 70MHz 2TTL or 15pF for F ≥ 70MHz	
Output Voltage (V <sub>OH</sub> ) (V <sub>OL</sub> )	"1" 0.9 * V <sub>dd</sub> min. "0" 0.1* V <sub>dd</sub> max.		
Tri-State Function	"1" or Open: Oscillation		> 2.2V
	"0": Output disabled (Hi Z)		< 0.8V
Start-up Time	10ms max.		
Aging per Year	±5ppm @ 25°C		



Bottom view  
Recommended land pattern

Connect a By-Pass capacitor 0.01 μF between V<sub>dd</sub> and GND.  
Environmental, and mechanical specifications, see appendix C. Group 2.  
Marking, see appendix G. Test circuit, waveforms, see appendix B.  
Tape and Reel, see appendix H.(1,000 pcs/reel).  
Reflow profile, see appendix E.  
Application notes, see appendix A.

PIN NO.	FUNCTION
1	Tri State
2	GND / Case
3	Output
4	V <sub>dd</sub>



P/N	H
ASFL	0.063+0.006 (1.6+0.15)
ASF1, ASFL1	0.043+0.004 (1.1+0.1)

Dimensions: Inches (mm)

\* Vary with frequency and temperature.

## ORDERING OPTIONS

ASFXX - Frequency - Temperature - Overall Frequency Stability - Duty Cycle - Packaging

Blank or L  
Blank or 1  
XX.XXXXX MHz  
- E for -20°C to + 70°C  
- F for -30°C to + 70°C  
- N for -30°C to + 85°C  
- L for -40°C to + 85°C  
-J for ± 20ppm max.\*  
-R for ± 25ppm max.\*  
-K for ± 30ppm max.\*  
-H for ± 35ppm max.\*  
-B for ± 40ppm max.  
-C for ± 50ppm max.  
-T (Tape & Reel)  
-S for 45/55% @ 1/2 V<sub>dd</sub>