

ASCO Series

SMD Crystal Clock Oscillator

Description

The ASCO series ultra miniature SMD crystal oscillator is able to provide accurate timing capabilities while fitting within a 1.6 mm x 1.2 mm package. The ASCO series features low current consumption and a tri-state function while supporting a variety of frequency stability options.



Features

- Ultra miniature package: 1.6 x 1.2 x 0.7 mm
- Tri-state function
- Suitable for high density SMT
- Suitable for RoHS compliant reflow process
- Electrical beam sealed package assures extreme accuracy and high reliability

Typical Applications

- CCD clock for VTR camera
- Computers and peripherals
- Portable electronics
- Mobile communications, PDA

Key Electrical Specifications

Parameters		Min.	Typ.	Max.	Units	Notes
Frequency Range*		3		80	MHz	
Operating Temperature		-10		+60	°C	See options
Storage Temperature		-40		+85	°C	
Overall Frequency Stability**		-50		+50	ppm	See options
Supply Voltage (Vdd)		2.97	3.3	3.63	V	Standard
		2.25	2.5	2.75		Option "1"
		1.62	1.8	1.98		Option "2"
Supply Current (I _{dd}) into 15pF Load	Vdd = 3.3 V		3.0	4.5	mA	1MHz ≤ F ≤ 20 MHz
			4.2	6.0		20 MHz < F ≤ 50 MHz
			6.0	8.5		50 MHz < F ≤ 80 MHz
	Vdd = 2.5 V		2.5	3.5		1MHz ≤ F ≤ 20 MHz
			3.0	4.5		20 MHz < F ≤ 50 MHz
			4.0	6.0		50 MHz < F ≤ 80 MHz
	Vdd = 1.8 V		2.0	3.0		1MHz ≤ F ≤ 20 MHz
			2.5	3.5		20 MHz < F ≤ 50 MHz
			3.5	5.0		50 MHz < F ≤ 80 MHz
Standby Current (I _{ST})			1.1	5.0	μA	
Output Load				15	pF	CMOS
Output Voltage	V _{OH}	0.9*Vdd			V	
	V _{OL}			0.1*Vdd		
Tri-state function		"1" (VIH≥0.8*Vdd) or Open : Oscillation "0" (VIH<0.2*Vdd) : Hi Z				
Tri-state disable time				100	ns	
Aging		-3.0		3.0	ppm	@+25°C First year
Symmetry @ 1/2Vdd		40	50	60	%	Standard
		45	50	55		Option S
Start-up Time				2.0	ms	
Rise/Fall Time (Tr/Tf)	Vdd = 3.3 V			5.0	ns	0.1*Vdd to 0.9*Vdd
	Vdd = 2.5 V			5.0	ns	0.1*Vdd to 0.9*Vdd
	Vdd = 1.8 V			6.5	ns	0.1*Vdd to 0.9*Vdd
RMS Phase Jitter				2.0	ps	(12kHz ~ 5 MHz)

Notes: * Please contact Abracon for frequency < 7MHz.

**Overall frequency stability includes initial frequency tolerance @+25°C and stability over the operating temperature.

Options and Part Identification (left blank if standard)

ASCO - MHz - -

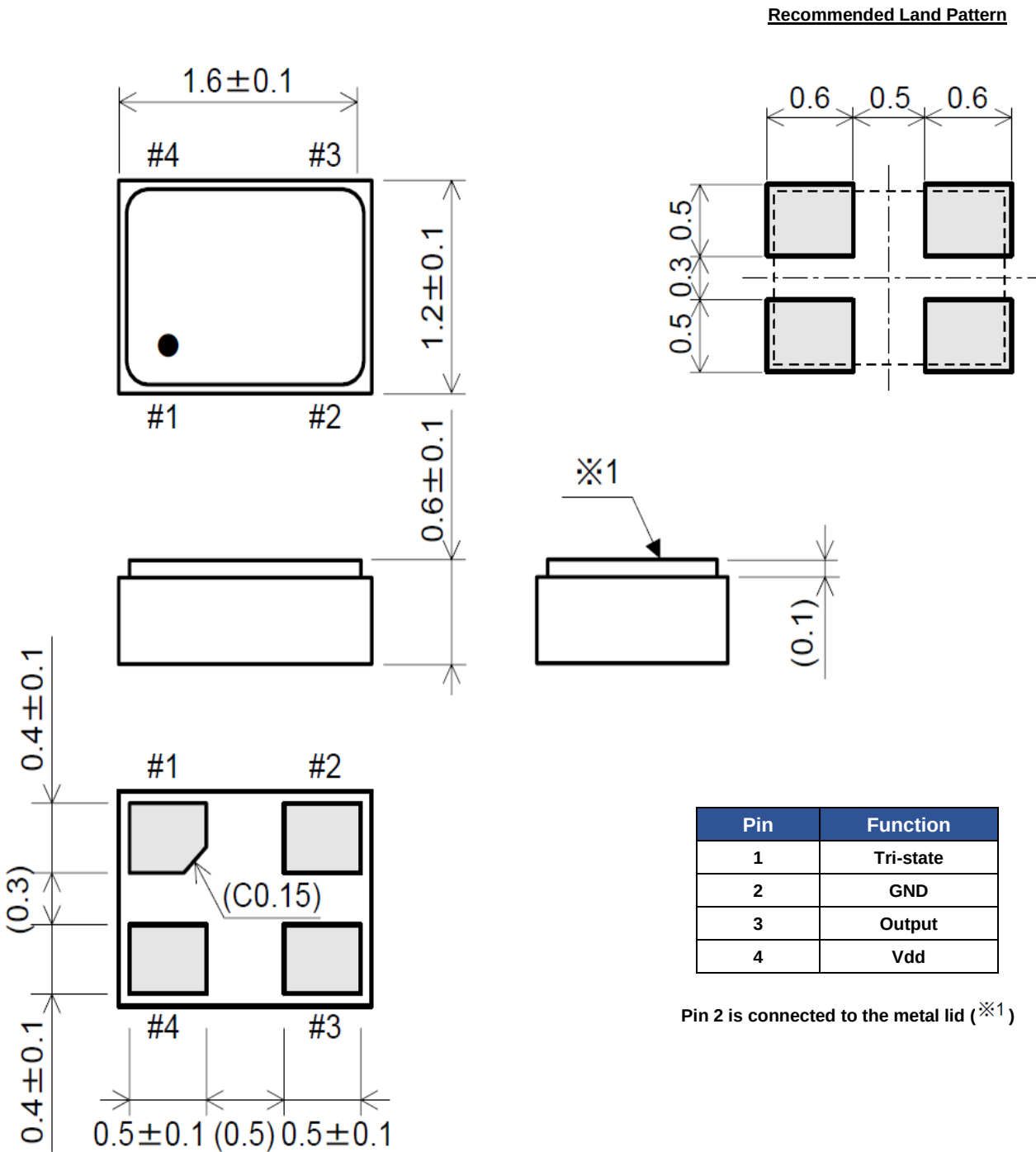
Supply Voltage	Frequency in MHz	Operating Temp.	Overall Freq. Stability	Symmetry	Packaging
Blank: 3.3V±10%	Please specify the frequency in MHz. e.g. 14.31818MHz	Blank: -10°C ~ +60°C	Blank: ±50ppm	Blank: 40/60% @1/2Vdd S: 45/55% @1/2Vdd	Blank: Bulk T3: 3000pcs/reel (Standard)
1: 2.5 V±10%		E: -20°C ~ +70°C	J**: ±20ppm		
2: 1.8 V±10%		N: -30°C ~ +85°C	K: ±30 ppm		
		L*: -40°C ~ +85°C	H: ±35 ppm		
			B: ±40 ppm		

* Only available with standard Freq. stability and option “B”

**Available for -10 to +60°C, option E only

Please contact Abracon for tighter frequency stability options

Mechanical Dimensions



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

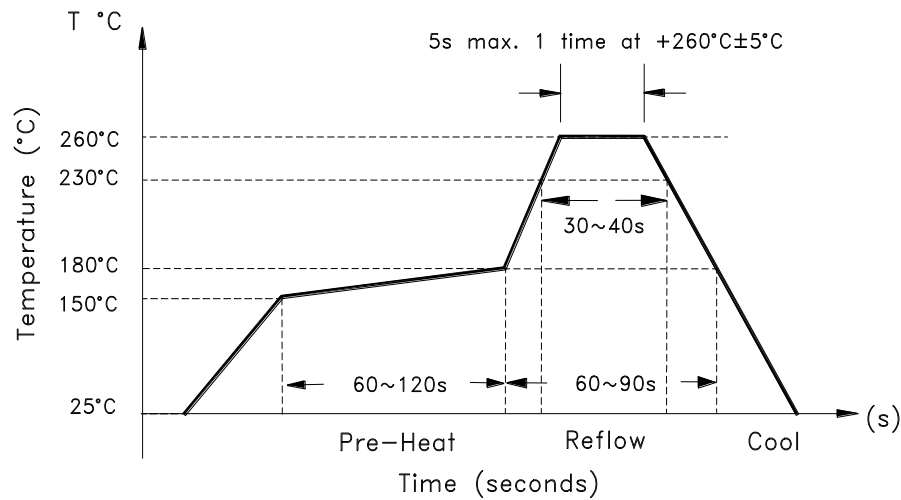
Dimensions: mm

Revision: E
Revised 3/18/2025

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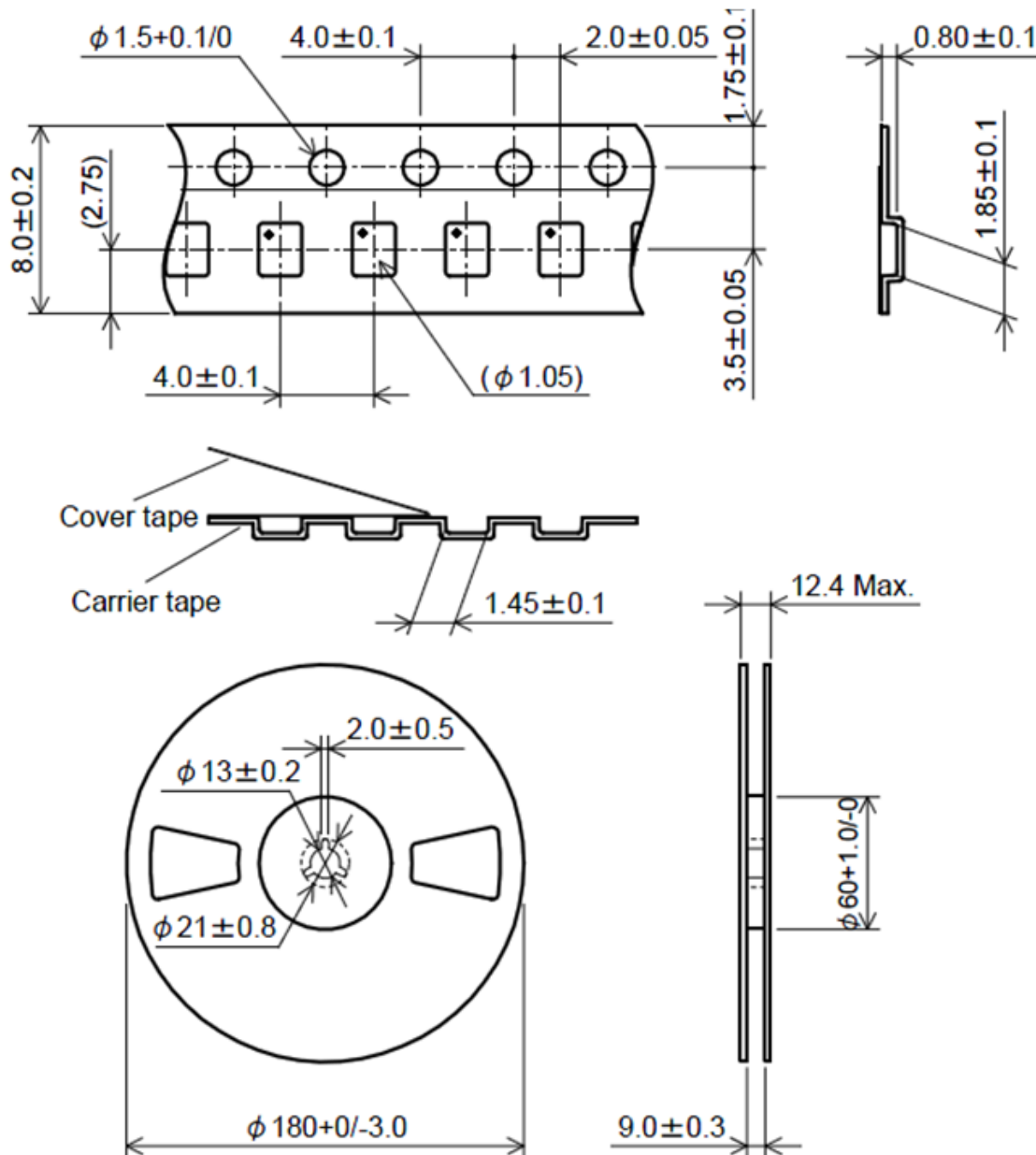
Reflow Profile



SMD Crystal Clock Oscillator

Packaging

T3= 3,000pcs/reel (Standard)



Dimensions: mm

Revision: E
Revised 3/18/2025

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