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.**

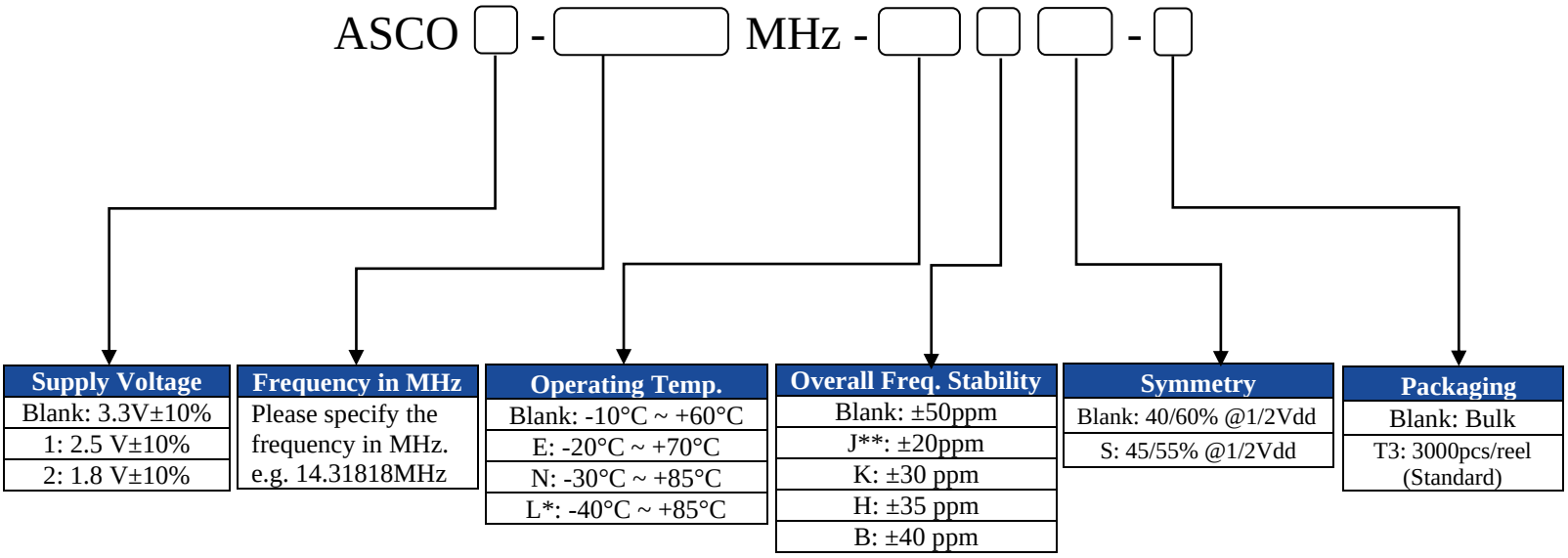
****Overall frequency stability includes initial frequency** tolerance **@+25°C and stability over the operating temperature.**

Revision: E
Revised 3/18/2025

Disclaimer

Check Inventory
Request Samples

Options and Part Identification (left blank if standard)



Supply Voltage
Blank: 3.3V±10%
1: 2.5 V±10%
2: 1.8 V±10%

Frequency in MHz
Please specify the frequency in MHz. e.g. 14.31818MHz

Operating Temp.
Blank: -10°C ~ +60°C
E: -20°C ~ +70°C
N: -30°C ~ +85°C
L*: -40°C ~ +85°C

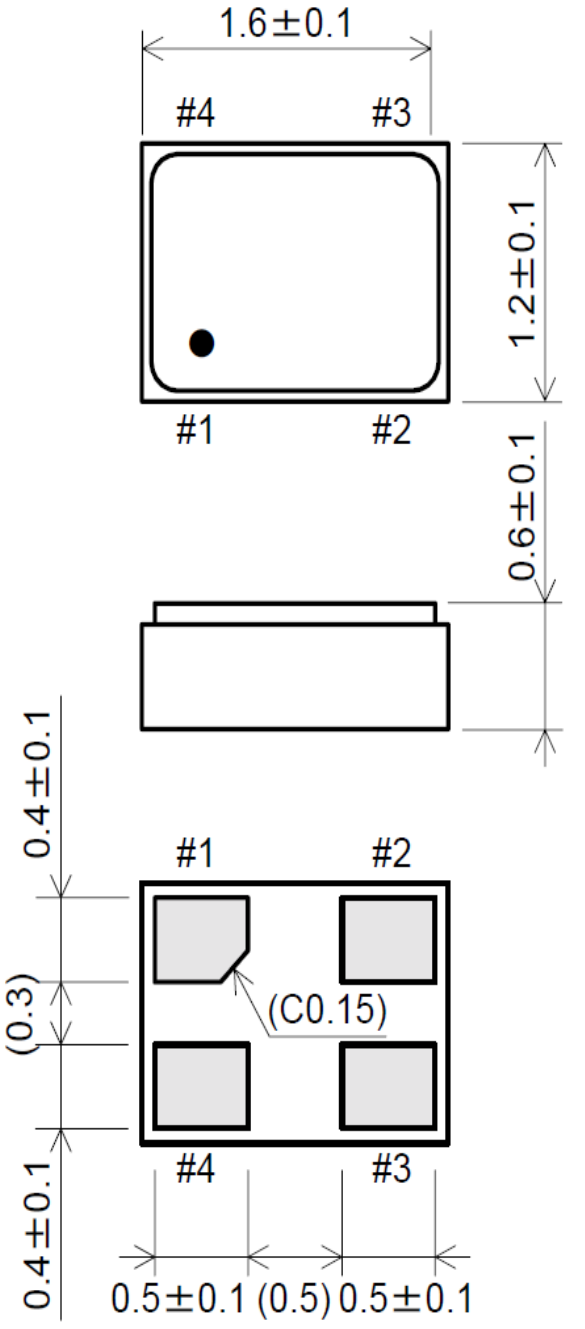
Overall Freq. Stability
Blank: ±50ppm
J**: ±20ppm
K: ±30 ppm
H: ±35 ppm
B: ±40 ppm

Symmetry
Blank: 40/60% @1/2Vdd
S: 45/55% @1/2Vdd

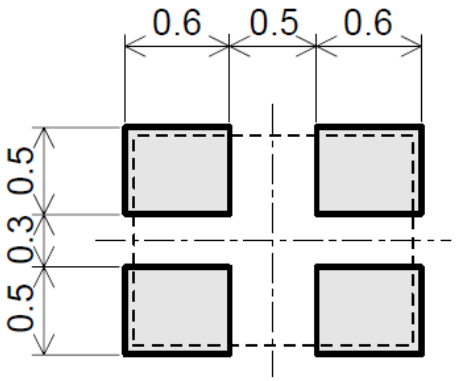
Packaging
Blank: Bulk
T3: 3000pcs/reel (Standard)

* 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



Recommended Land Pattern

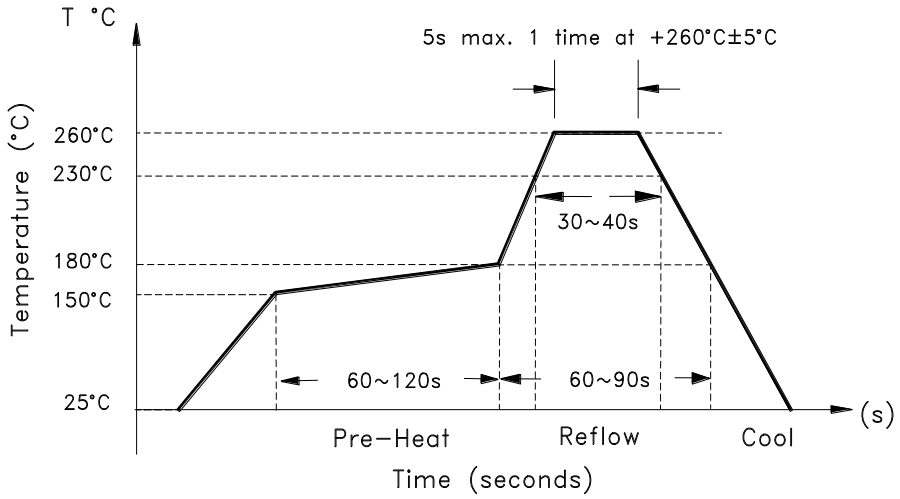


Pin	Function
1	Tri-state
2	GND
3	Output
4	Vdd

Pin 2 is connected to the metal lid (※1)

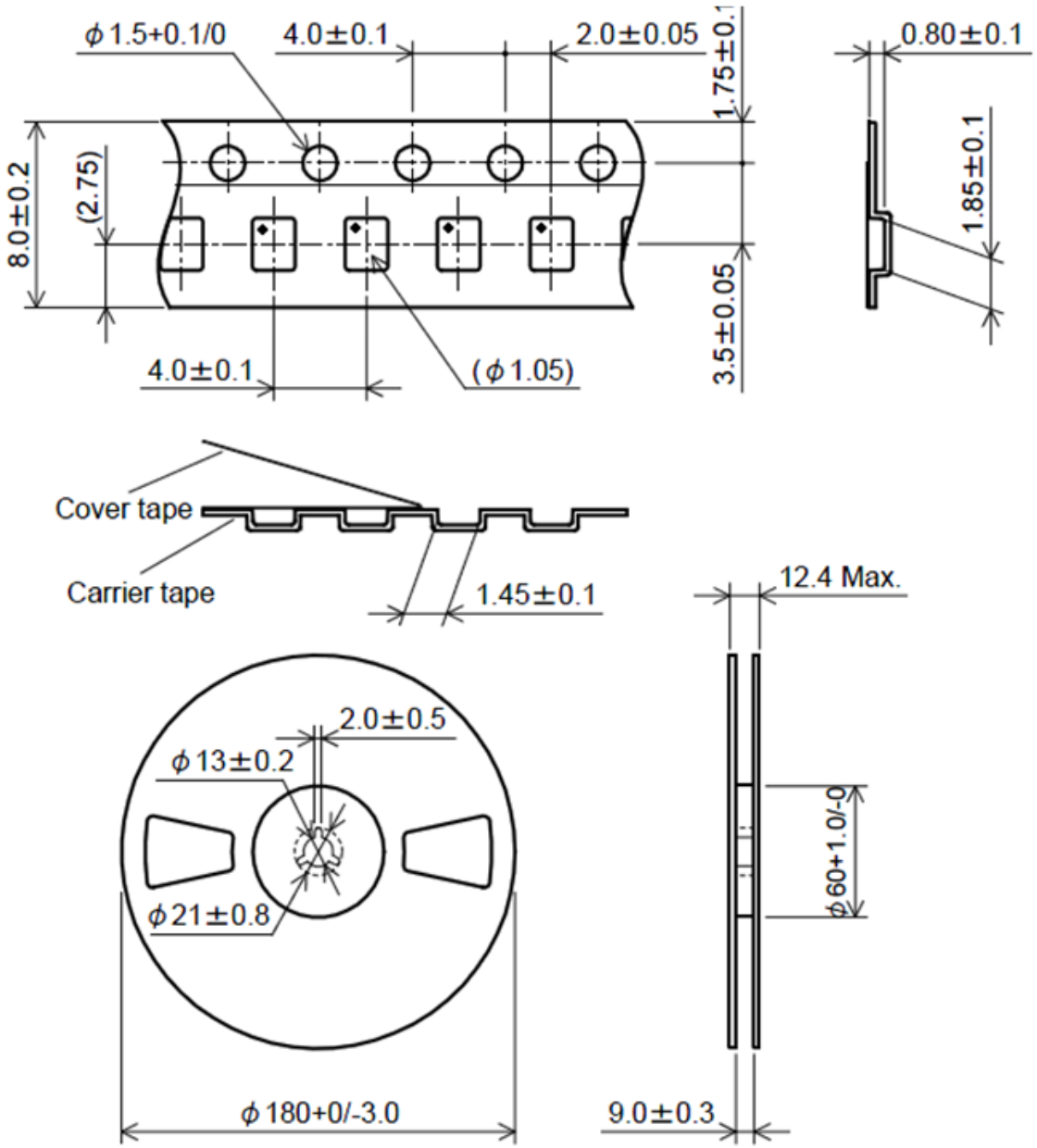
Dimensions: mm

Reflow Profile



Packaging

T3= 3,000pcs/reel (Standard)



Dimensions: mm

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ABRACON:

ASCO-7.3728MHZ-EK-T ASCO-8.000MHZ-EK-T ASCO-11.2896MHZ-EK-T ASCO-38.400MHZ-EK-T ASCO-60.000MHZ-EK-T ASCO-66.666MHZ-EK-T ASCO-1.544MHZ-EK-T3 ASCO-6.000MHZ-EK-T3 ASCO-29.4912MHZ-EK-T3 ASCO-70.000MHZ-EK-T3 ASCO1-1.000MHZ-EK-T3 ASCO-11.0592MHZ-EK-T ASCO-14.7456MHZ-EK-T ASCO-29.4912MHZ-EK-T ASCO-44.000MHZ-EK-T ASCO-1.8432MHZ-EK-T3 ASCO-33.000MHZ-EK-T3 ASCO-37.400MHZ-EK-T3 ASCO-13.000MHZ-EK-T ASCO-3.6864MHZ-EK-T3 ASCO-11.0592MHZ-EK-T3 ASCO-12.288MHZ-EK-T3 ASCO-13.000MHZ-EK-T3 ASCO-6.140MHZ-EK-T ASCO-33.333MHZ-EK-T ASCO-64.000MHZ-EK-T ASCO-2.048MHZ-EK-T3 ASCO-6.140MHZ-EK-T3 ASCO-15.000MHZ-EK-T3 ASCO-48.000MHZ-EK-T3 ASCO-1.544MHZ-EK-T ASCO-66.000MHZ-EK-T ASCO-4.000MHZ-EK-T ASCO-26.000MHZ-EK-T ASCO-32.000MHZ-EK-T ASCO-80.000MHZ-EK-T ASCO-18.432MHZ-EK-T3 ASCO-12.000MHZ-EK-T ASCO-14.31818MHZ-EK-T ASCO-5.000MHZ-EK-T3 ASCO-72.000MHZ-EK-T ASCO-27.120MHZ-EK-T3 ASCO-1.000MHZ-EK-T ASCO-1.000MHZ-EK-T3 ASCO-2.048MHZ-EK-T ASCO-7.3728MHZ-EK-T3 ASCO-16.000MHZ-EK-T ASCO-16.384MHZ-EK-T ASCO-18.432MHZ-EK-T ASCO-4.000MHZ-EK-T3 ASCO-80.000MHZ-EK-T3 ASCO-2.000MHZ-EK-T ASCO-12.288MHZ-EK-T ASCO-20.000MHZ-EK-T ASCO-2.000MHZ-EK-T3 ASCO-32.768MHZ-EK-T3 ASCO-66.000MHZ-EK-T3 ASCO-12.352MHZ-EK-T ASCO-15.000MHZ-EK-T ASCO-70.000MHZ-EK-T ASCO-76.800MHZ-EK-T ASCO-19.440MHZ-EK-T3 ASCO-30.000MHZ-EK-T ASCO-12.500MHZ-EK-T3 ASCO-16.384MHZ-EK-T3 ASCO-75.000MHZ-EK-T3 ASCO-5.000MHZ-EK-T ASCO-12.500MHZ-EK-T ASCO-44.000MHZ-EK-T3 ASCO-60.000MHZ-EK-T3 ASCO-19.440MHZ-EK-T ASCO-40.000MHZ-EK-T ASCO-65.000MHZ-EK-T ASCO-40.000MHZ-EK-T3 ASCO-64.000MHZ-EK-T3 ASCO-72.000MHZ-EK-T3 ASCO-6.000MHZ-EK-T ASCO-24.000MHZ-EK-T ASCO-27.000MHZ-EK-T ASCO-32.768MHZ-EK-T ASCO-33.000MHZ-EK-T ASCO-11.2896MHZ-EK-T3 ASCO-27.000MHZ-EK-T3 ASCO-68.000MHZ-EK-T3 ASCO-76.800MHZ-EK-T3 ASCO1-1.8432MHZ-EK-T3 ASCO-1.8432MHZ-EK-T ASCO-19.200MHZ-EK-T3 ASCO-19.200MHZ-EK-T ASCO-68.000MHZ-EK-T ASCO-14.31818MHZ-EK-T3 ASCO-16.000MHZ-EK-T3 ASCO-32.000MHZ-EK-T3 ASCO-33.333MHZ-EK-T3 ASCO-3.6864MHZ-EK-T ASCO-27.120MHZ-EK-T ASCO-37.400MHZ-EK-T ASCO-48.000MHZ-EK-T ASCO-54.000MHZ-EK-T ASCO-10.000MHZ-EK-T3