

Moisture Sensitivity Level (MSL) – This product is Hermetically Sealed and not Moisture Sensitive - MSL = N/A: Not Applicable

For Vdd=3.3V & 2.5V and custom frequencies between 8.00MHz & 200.000MHz, or carrier frequency > 60.0MHz, please consider Abracon's <u>ASG2-C series</u> of XO and VCXO's

#### **FEATURES:**

- Low height 1.0mm max
- Low current consumption
- Tri-state function
- Suitable for RoHS compliant reflow
- Tight stability option
- Seam sealed package assures high reliability

#### **APPLICATIONS:**

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

# STANDARD SPECIFICATIONS:

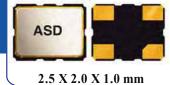
Parameters		Minimum	Typical	Maximum	Units	Notes
Frequency Range		0.750		60	MHz	
Operating Temperature		-20		+70	°C	STD temp. Option code E (See options)
Storage Temperature		-55		+100	°C	
Overall Frequency Stability		-100		+100	ppm	See options
Supply Voltage (Vdd)		+3.135	+3.3	+3.465	V	ASD (Standard)
		+2.85	+3.0	+3.15		ASD1
		+2.375	+2.5	+2.625		ASD2
		+1.71	+1.8	+1.89		ASD3
		+0.95	+1.0	+1.05		ASD6
Input Current (Idd)	ASD (3.3V)		2.5	5	mA	0.750~15.999 MHz
			4	7		16.000~39.999 MHz
			9	13		40.000~60.000 MHz
	ASD1 (3.0V)		2.5	4	mA	0.750~15.999 MHz
			3.5	6		16.000~39.999 MHz
			8	12		40.000~60.000 MHz
	ASD2 (2.5V)		2	3.5	mA	0.750~15.999 MHz
			3	5		16.000~39.999 MHz
			7	10		40.000~60.000 MHz
	ASD3 (1.8V)		1	2.5	mA	0.750~15.999 MHz
			2	4		16.000~39.999 MHz
			4	7		40.000~60.000 MHz
	ASD6 (1.0V)		1.0	2.5	mA	25.000 MHz
Symmetry @ 1/2Vdd		40		60	%	STD (See option)
Output Load:				15	pF	CMOS
Output Voltage (VOH):		0.9* Vdd			V	
Output Voltage (VOL):				0.1* Vdd	V	





# **ASD SERIES**

RoHS/RoHS II compliant



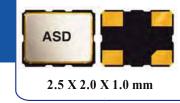
(Continued)

Parameters	ued)						
ASD (3.3V)	Parameters		Minimum	Typical	Maximum	Units	Notes
Rise and Fall Time (Tir/TI):  ASD1 (3.0V)  ASD2 (2.5V)  ASD2 (2.5V)  ASD3 (1.8V)  ASD3 (1.8V)  ASD3 (1.8V)  ASD4 (3.0V)  ASD4 (3.0V)  ASD4 (3.0V)  ASD5 (1.0V)  ASD5 (1.0V)  ASD6 (1.0V)  A	Rise and Fall Time			3	7		0.750~15.999 MHz
Rise and Fall Time (Tr/Tf):  ASD1 (3.0V)  ASD2 (2.5V)  ASD3 (1.8V)  ASD3 (1.8V)  ASD6 (1.0V)  ASD1 (3.0V)  ASD6 (1.0V)  ASD1 (3.0V)  ASD6 (1.0V)  ASD7 (1.0V (1.		ASD (3.3V)		2.5	6		16.000~39.999 MHz
Rise and Fall Time (Te/Tf):  ASD2 (2.5V)  ASD2 (2.5V)  ASD2 (2.5V)  ASD3 (1.8V)  ASD4 (1.0V)  ASD5 (1.0V)  ASD5 (1.0V)  ASD5 (1.0V)  ASD6 (1.0V)  A				2	4		40.000~60.000 MHz
Risc and Fall Time (Tr/TI):  ASD2 (2.5V)  ASD3 (1.8V)  ASD4 (1.8V)  ASD5 (1.8V)  ASD5 (1.8V)  ASD6 (1.8V)  A				3	7		0.750~15.999 MHz
ASD2 (2.5V)		ASD1 (3.0V)		2.5		ns	16.000~39.999 MHz
(Ti/Tif):				2	4		40.000~60.000 MHz
ASD2 (2.5V)							0.750~15.999 MHz
ASD3 (1.8V)		ASD2 (2.5V)				ns	
ASD3 (1.8V)							
ASD6 (1.0V)		ASD3 (1.8V)				ns	
ASD6 (1.0V)							
ASD (3.3V)  ASD (3.3V)  ASD (3.3V)  ASD (3.0V)  ASD (3.0V)  ASD (3.0V)  ASD (3.0V)  ASD (3.0V)  ASD (2.5V)  ASD (2.5V)  ASD (1.0V)  ASD (							
ASD (3.3V)		ASD6 (1.0V)				ns	
Start-up Time:		ASD (3.3V)					
Start-up Time:     6   10   ms   16,000-30,999 Milz   16,000-30,999 Milz   16,000-30,000 Milz   16,000-30,999 M						ms	
Start-up Time:							
Start-up Time:         ASD2 (2.5V)         6         10         40.000-60.000 MHz           ASD2 (2.5V)         6         10         ms         16.000-39.999 MHz         16.000-39.999 MHz         40.000-60.000 MHz         16.000-39.999 MHz         40.000-60.000 MHz         40.000-60.000 MHz         16.000-39.999 MHz		ACD1 (2.0V)				ms	
Start-up Time:         ASD2 (2.5V)         6         10         ms         0.750~15.999 MHz         16.000~39.99 MHz         40.000~60.000 MHz         40.000~60.000 MHz         0.750~15.999 MHz         6         10         ms         0.750~15.999 MHz         0.750		ASD1 (3.0V)					
ASD2 (2.5V)	Stort un Tima:						
S   10   40,000-60,000 MHz   ASD3 (1.8V)	Start-up Time.	ASD2 (2.5V)				me	
ASD3 (1.8V)		ASD2 (2.3 V)				1115	
ASD3 (1.8V)							
S   10		ASD3 (1.8V)				ms	
ASD6 (1.0V)   2.0   10   ms   25.000 MHz		11023 (1.0 )				1113	
Tri-state function (Stand-by):         "1" (VIH≥0.7*Vdd) or Open: Oscillation; "0" (VIH<0.3*Vdd): No oscillation; "0" (VIH<0.3*Vdd): No oscillation; "10" (VIH<0.3*Vdd): No oscillation; "0" (VIH<0.3*Vdd): No oscillation; "0" (VIH<0.3*Vdd): No oscillation; "10" (VIH<0.3*Vdd): No oscillation; "0" (VIH<0.0*Vdd): No oscillation; "0" (VIH<0.0*0.3999 MHz (No oscillation; "0" (No oscillation		ASD6 (1.0V)		2.0		ms	
Thi-state function (Stand-by)	•		"1" (VIH≥0.7				
Phase Jitter (12kHz to 20MHz)  Phase Jitter (12kHz to 20MHz)  ASD1 (3.0V)  ASD2 (2.5V)  ASD3 (1.8V)  ASD3 (1.8V)  Period Jitter RMS  Period Jitter RMS  ASD3 (1.8V)  ASD3 (1.8V)  ASD3 (1.8V)  ASD4 (3.0V)  ASD5 (3.0V)  ASD6 (1.0V)  ASD6 (1.0V)  ASD6 (1.0V)  ASD6 (1.0V)  ASD6 (1.0V)  ASD6 (1.0V)  ASD7 (3.0V)  ASD7 (3.0V)  ASD8 (3.0V)  ASD8 (3.0V)  ASD9 (3.0V)  ASD9 (3.0V)  ASD9 (3.0V)  ASD9 (3.0V)  ASD9 (3.0V)  ASD1 (3.0V)  ASD2 (3.0V)  ASD2 (3.0V)  ASD3 (3.0V)  ASD3 (3.0V)  ASD3 (3.0V)  ASD4 (3.0V)  ASD5 (3.0V)  ASD5 (3.0V)  ASD6 (3.0V)  ASD7 (3.0V)  ASD7 (3.0V)  ASD7 (3.0V)  ASD7 (3.0V)  ASD7 (3.0V)  ASD7 (3.0V)  ASD8 (3.0V)  ASD8 (3.0V)  ASD8 (3.0V)  ASD8 (3.0V)  ASD9 (3.0V)  ASD9 (3.0V)  ASD9 (3.0V)  ASD6 (3.0V)  ASD6 (3.0V)  ASD7 (3.0	Tri-state function (Stan	d-by):					
Phase Jitter (12kHz to 20MHz)  Phase Jitter (12kHz to 20MHz)  ASD1 (3.0V)  ASD2 (2.5V)  ASD2 (2.5V)  ASD3 (1.8V)  ASD6 (1.0V)  Period Jitter RMS  ASD3 (1.8V)  ASD3 (1.8V)  ASD3 (1.8V)  ASD3 (1.8V)  ASD4 (2.5V)  ASD5 (1.0V)  ASD6 (1.0V)  ASD7 (1.0V)  ASD7 (1.0V)  ASD8 (1.0V)  ASD8 (1.0V)  ASD9 (1.0V)  AS		ASD (3.3V)		0.4	1.0	ps	0.750~15.999 MHz
Phase Jitter (12kHz to 20MHz)         ASD1 (3.0V)         0.4         1.0         ps         16.000~39.999 MHz         40.000~60.000 MHz         16.000~39.999 MHz         40.000~60.000 MHz         40.000~60.000 MHz         0.5         1.0         ps         16.000~39.999 MHz         16.000~39.999 MHz         0.5         1.0         ps         16.000~39.999 MHz         16.000~39.							16.000~39.999 MHz
Phase Jitter (12kHz to 20MHz)         ASD1 (3.0V)         0.4         1.0         ps         16.000~39.999 MHz         40.000~60.000 MHz         40.000~60.000 MHz         40.000~60.000 MHz         40.000~60.000 MHz         16.000~39.999 MHz							
Phase Jitter (12kHz to 20MHz)         40.000~60.000 MHz           ASD2 (2.5V)         0.5         1.0         ps         0.750~15.999 MHz           ASD2 (2.5V)         0.5         1.0         ps         16.000~39.999 MHz           40.000~60.000 MHz         0.5         1.0         ps         16.000~39.999 MHz           ASD3 (1.8V)         0.5         1.0         ps         16.000~39.999 MHz           ASD6 (1.0V)         0.3         1.0         ps         25.000 MHz           ASD (3.3V)         3.0         5.0         ps         16.000~39.999 MHz           ASD (3.3V)         3.0         5.0         ps         16.000~39.999 MHz           ASD1 (3.0V)         3.0         5.0         ps         16.000~39.999 MHz           ASD1 (3.0V)         3.0         5.0         ps         16.000~39.999 MHz           ASD1 (3.0V)         3.0         5.0         ps         16.000~39.999 MHz           ASD2 (2.5V)         3.0         5.0         ps         16.000~39.999 MHz           ASD3 (1.8V)         3.0         5.0         ps         16.000~39.999 MHz           ASD3 (1.8V)         3.0         5.0         ps         16.000~39.999 MHz           ASD6 (1.0V)					+	ps	
Phase Jitter (12kHz to 20MHz)  ASD2 (2.5V)  Do.5 1.0 ps 16.000~39.999 MHz  ASD3 (1.8V)  Oo.5 1.0 ps 16.000~39.999 MHz  ASD3 (1.8V)  Oo.5 1.0 ps 16.000~39.999 MHz  ASD3 (1.8V)  Oo.5 1.0 ps 16.000~39.999 MHz  ASD4 (1.0V)  Oo.5 1.0 ps 25.000 MHz  ASD6 (1.0V)  Oo.5 1.0 ps 16.000~39.999 MHz  ASD1 (3.0V)  Oo.5 1.0 ps 16.000~39.999 MHz  ASD1 (3.0V)  Oo.5 1.0 ps 16.000~39.999 MHz  ASD1 (3.0V)  Oo.750~15.999 MHz  Oo.750~		ASD1 (3.0V)					
ASD2 (2.5V)	Phase Jitter						
Period Jitter RMS    0.5   1.0   40.000~60.000 MHz		1 CD 2 (2 5X )				ps	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		ASD2 (2.5V)					
ASD3 (1.8V)							
Period Jitter RMS    ASD2 (2.5V)   ASD3 (1.8V)   ASD6 (1.0V)   ASD6 (1.0							
ASD6 (1.0V)  O.3  1.0  ps  25.000 MHz  0.750~15.999 MHz  16.000~39.999 MHz  3.0  3.0  5.0  ps  16.000~39.999 MHz  40.000~60.000 MHz  3.0  ASD1 (3.0V)  ASD1 (3.0V)  Period Jitter RMS  ASD2 (2.5V)  ASD3 (1.8V)  ASD3 (1.8V)  ASD6 (1.0V)  O.3  O.750~15.999 MHz  16.000~39.999 MHz  40.000~60.000 MHz							
ASD (3.3V)  ASD (3.3V)  ASD (3.3V)  Begin and the properties of th							
ASD (3.3V)  ASD (3.3V)  3.0  3.0  5.0  By  16.000~39.999 MHz  40.000~60.000 MHz  ASD1 (3.0V)  ASD1 (3.0V)  ASD2 (2.5V)  ASD3 (1.8V)  ASD6 (1.0V)  ASD6 (1.0V)  3.0  3.0  3.0  3.0  3.0  3.0  3.0  3.					+	ps	
ASD1 (3.0V)   3.0   5.0     40.000~60.000 MHz						ne	
ASD1 (3.0V)  ASD1 (3.0V)  ASD1 (3.0V)  Begin at 25°C/year  3.0  3.0  3.0  3.0  3.0  3.0  3.0  3.						ps	
ASD1 (3.0V)         3.0         5.0         ps         16.000~39.999 MHz           40.000~60.000 MHz         3.0         5.0         40.000~60.000 MHz           ASD2 (2.5V)         3.0         5.0         ps         16.000~39.999 MHz           ASD3 (1.8V)         3.0         5.0         ps         16.000~39.999 MHz           ASD3 (1.8V)         3.0         5.0         ps         16.000~39.999 MHz           ASD6 (1.0V)         3.0         5.0         ps         16.000~39.999 MHz           ASD6 (1.0V)         4.8         6.0         ps         25.000 MHz           Aging at 25°C/year         -5         +5         ppm		ASD1 (3.0V)					
Period Jitter RMS  ASD2 (2.5V)  ASD2 (2.5V)  ASD3 (1.8V)  ASD6 (1.0V)  ASD6 (1.0V)  3.0  3.0  3.0  3.0  3.0  3.0  3.0  3.						ps	
Period Jitter RMS  ASD2 (2.5V)  3.0  3.0  5.0  ps  16.000~39.999 MHz  16.000~60.000 MHz  3.0  ASD3 (1.8V)  3.0  3.0  5.0  ps  16.000~39.999 MHz  40.000~60.000 MHz  3.0  5.0  ps  16.000~39.999 MHz  40.000~60.000 MHz  40.000~60.000 MHz  ASD6 (1.0V)  4.8  6.0  ps  25.000 MHz  Aging at 25°C/year		11021					
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Period Jitter RMS				+	ps	
ASD3 (1.8V)  ASD6 (1.0V)		ASD2 (2.5V)					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$							
ASD6 (1.0V)     3.0     5.0     40.000~60.000 MHz       4.8     6.0     ps     25.000 MHz       Aging at 25°C/year     -5     +5     ppm				3.0	5.0	ps	
ASD6 (1.0V) 4.8 6.0 ps 25.000 MHz Aging at 25°C/year -5 ppm				3.0			
Aging at 25°C/year -5 +5 ppm				3.0	5.0		40.000~60.000 MHz
		ASD6 (1.0V)		4.8		ps	25.000 MHz
Disable Current: 20 μA							
	Disable Current:				20	μΑ	

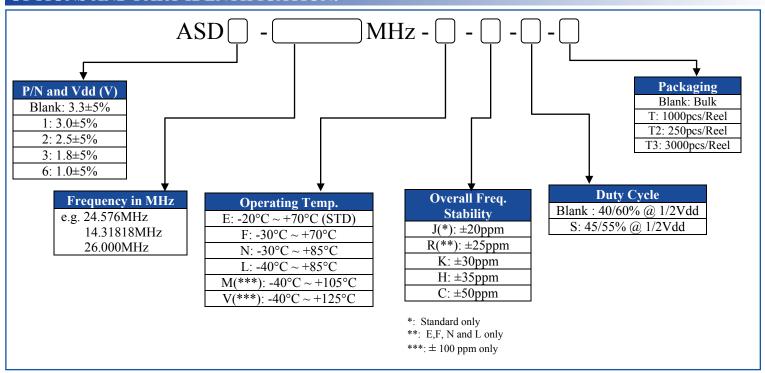




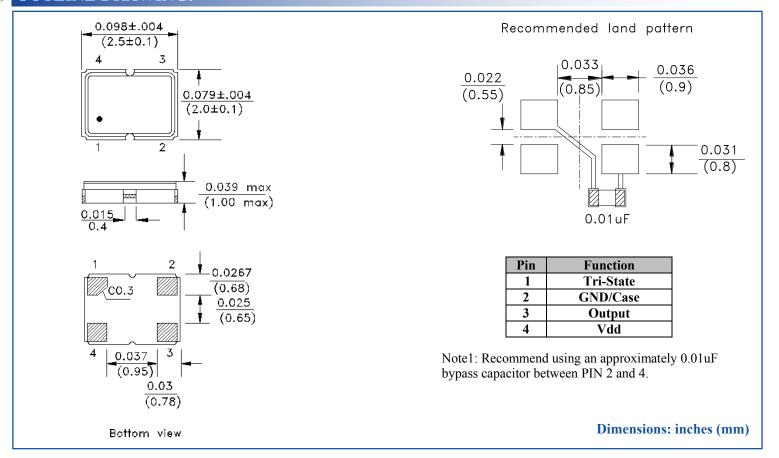
### **ASD SERIES**



### > OPTIONS AND PART IDENTIFICATION:



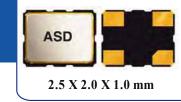
### **OUTLINE DRAWING:**







# **ASD SERIES**



#### **► TAPE & REEL:**

T: 1000pcs/reel T2: 250pcs/reel T3: 3000pcs/reel FEEDING (PULL) DIRECTION

0.25±0.05 ø1.50+1.0/-0

1.75±0.1

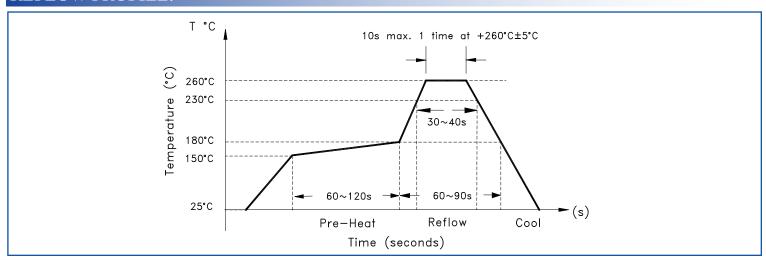
9.0±1

0.85 max.

PIN1

### REFLOW PROFILE:

**Dimensions: mm** 





Need a test socket for the ASD Series? To view compatible PRECISION TEST & BURN-IN SOCKETS for these parts, click here. P/N AXS-2520-04-01

ATTENTION: Abracon Corporation's products are COTS – Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. Abracon's products are not specifically designed for Military, Aviation, Aerospace, Life-dependant Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from Abracon Corporation is required. Please contact Abracon Corporation for more information.



