

32.768kHz LOW POWER SMD CRYTAL OSCILLATOR

ASZKDV

Request Samples



Check Inventory



ESD Sensitive



2.0 x 1.2 x 0.7 mm

RoHS/RoHS II Compliant

MSL Level = 1

Features

- Crystal Technology by Micro Crystal
- Oscillator with internal at 32.768 kHz tuning fork resonator
- Ultra-miniature package 2.0x1.2x0.7mm [max.]
- CMOS output
- Continuous supply voltage operation from 1.6V to 5.5V
- Optimized for low current consumption
- Operating temperature range: -40 to +85 °C, -40 to +125 °C
- Output enable/disable function

Applications

- Portable and wearable electronics
- Internet of Things (IoT)
- Consumer electronics
- Industrial control and automation
- General purpose clock generator for digital systems
- Clock reference for Real Time Clocks (RTCs)
- Timekeeping in network servers and computers
- Electricity, gas and water metering

Key Electrical Specifications [\[Note 1\]](#)

Parameters		Minimum	Typical	Maximum	Units	Notes
Output Frequency		32.768			kHz	
Operating Temperature Range (OTR)		-40		+85	°C	Option "L"
		-40		+125	°C	Option "H"
Storage Temperature Range		-55		+125	°C	
Turnover Temperature		+20	+25	+30	°C	
Frequency Tolerance		-20		+20	ppm	
Temperature Coefficient		-0.035±10%			ppm/°C	
Supply Voltage Range (V _{dd})		+1.6		+5.5	V	@ OTR= -40°C ~ +85°C
		+2.25		+5.5	V	@ OTR= -40°C ~ +125°C
V _{dd} slew rate				±0.5	V/ms	
Current Consumption (I _{dd}) CLKOUT disabled [Note 2, 3]			0.45	0.65	µA	V _{dd} = 3.0 V, @ +25°C
			0.68	0.90		V _{dd} = 5.0 V, @ +25°C
				1.30		V _{dd} = 3.0 V, over OTR -40 to 85°C
				1.80		V _{dd} = 5.0 V, over OTR -40 to 85°C
				1.95		V _{dd} = 3.0 V, over OTR -40 to 125°C
				2.70		V _{dd} = 5.0 V, over OTR -40 to 125°C
Output Load (CL)				15	pF	CMOS
Output Voltage	V _{OH}	V _{dd} -0.4			V	I _{OH} = -400µA, V _{dd} = 1.6 to 5.5 V
	V _{OL}			GND+0.4	V	I _{OL} = 400µA, V _{dd} = 1.6 to 5.5 V
Hi-Z leakage current				±100	nA	OE = GND; OUTPUT= V _{dd} or GND
OE Pin Function		"1" (VIH≥0.7*V _{dd}) or Open: Oscillation "0" (VIL<0.3*V _{dd}): Output disabled				
Aging @ +25°C		-3.0		+3.0	ppm	First year
Duty Cycle		40		60	%	
Voltage Coefficient		-3.0		+3.0	ppm/V	
Start-up Time				0.5	s	
Output Rise Time			30.0	70.0	ns	CL = 10 pF, 10% to 90% V _{dd}
Output Fall Time			30.0	70.0	ns	CL = 10 pF, 10% to 90% V _{dd}
Output Enable Time		0.0		0.5	µs	
Output Disable Time				0.1	µs	

Note 1: V_{dd} = 3.0V; GND = 0V; @ +25 °C unless otherwise indicated

Note 2: See diagram "Typical Supply Current (I_{dd}) vs Supply Voltage (V_{dd})"

Note 3: When OUTPUT is enabled (OE is HIGH) the additional supply current can be calculated as follows: ΔIDD = CL x VDD x Fout



5101 Hidden Creek Ln Spicewood TX 78669
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 01-23-23

ABRACON IS
ISO9001-2015
CERTIFIED

32.768kHz LOW POWER SMD CRYTAL OSCILLATOR

ASZKDV

Request Samples



Check Inventory



ESD Sensitive



2.0 x 1.2 x 0.7 mm
RoHS/RoHS II Compliant
MSL Level = 1

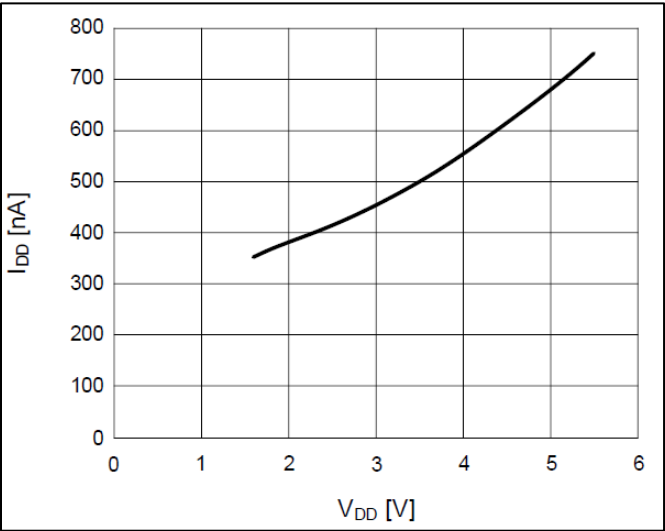
Absolute Maximum Ratings

Parameters	Symbol	Conditions	Rating	Unit
Supply voltage range (4)	V _{dd}	Between V _{dd} and V _{ss}	-0.5 to +6.0	V
Input voltage range (4)	V _{IN}	Between INH and V _{ss}	-0.5 to +6.0 (5)	V
Output voltage range (4)	V _{OUT}	Output pad	-0.5 to +6.0 (5)	V
Electrostatic discharge voltage	V _{ESD}	HBM	±1000	V
Solder reflow profile		Per JEDEC J-STD-020C	+260 max	°C

Note 4: Absolute maximum ratings are the values that must not be exceeded. This product may suffer damage if any one of these parameter ratings is exceeded. Operation and characteristics are guaranteed only when the product is operated per the specification datasheet.

Note 5: V_{dd} is a V_{dd} value of recommended operating conditions

Typical Supply Current (I_{dd}) vs Supply Voltage (V_{dd}), Output Disabled, TOPR = 25°C



ABRACON

5101 Hidden Creek Ln Spicewood TX 78669
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 01-23-23

ABRACON IS
ISO9001-2015
CERTIFIED

32.768kHz LOW POWER SMD CRYTAL OSCILLATOR

ASZKDV

Request Samples



Check Inventory

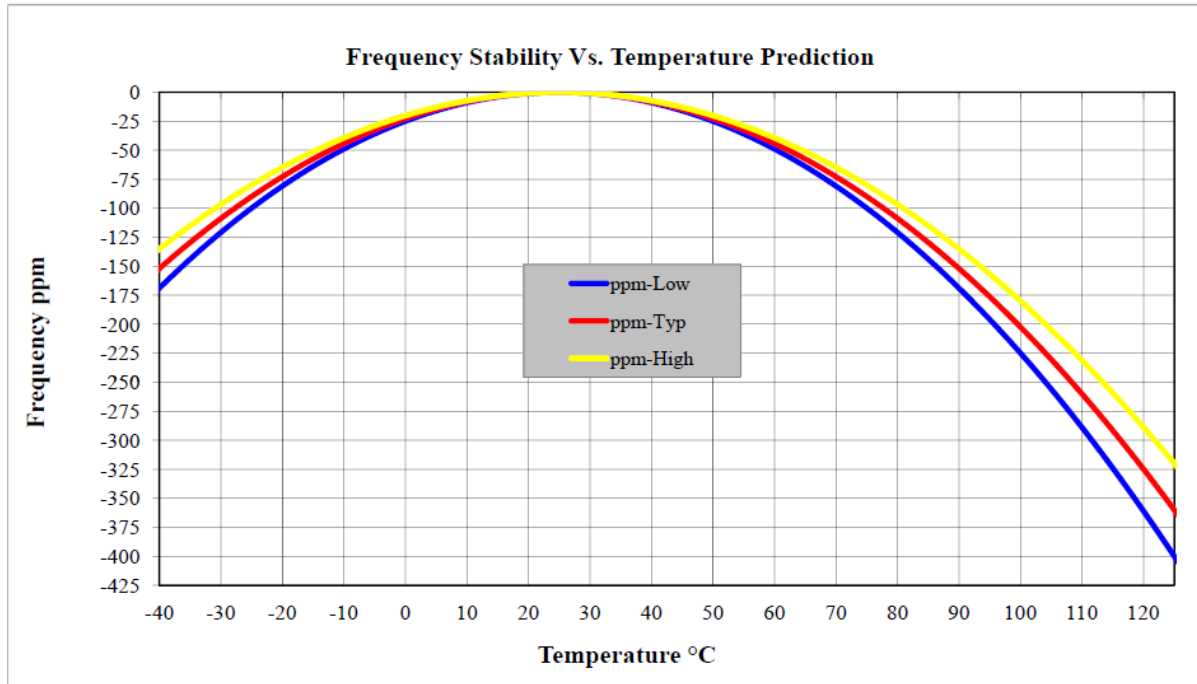


ESD Sensitive



2.0 x 1.2 x 0.7 mm
RoHS/RoHS II Compliant
MSL Level = 1

Typical Frequency Temperature Characteristics



Options and Part Identification

ASZKDV-32.768kHz--

Operating Temp.
L: -40°C ~ +85°C
H: -40°C ~ +125°C

Packaging
Blank: Bulk
T: 1000pcs/Reel
T3: 3000pcs/Reel

32.768kHz LOW POWER SMD CRYTAL OSCILLATOR

ASZKDV

Request Samples



Check Inventory



ESD Sensitive

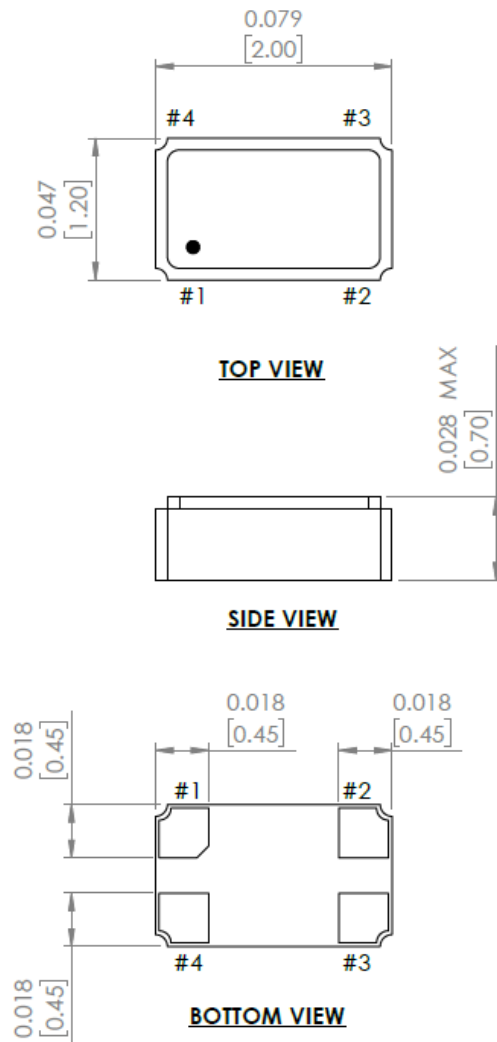


2.0 x 1.2 x 0.7 mm

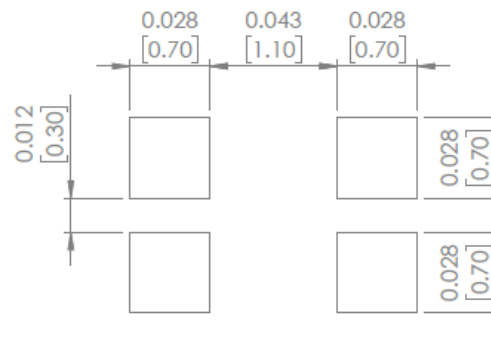
RoHS/RoHS II Compliant

MSL Level = 1

Mechanical Dimensions



Recommended Land Pattern



Pin No.	Function
1	Output
2	GND*
3	OE
4	Vdd

*Metal lid is connected to GND (pin #2)

Sealing Method = Solder Sealing

Dimensions: [inches] mm

Unless specified, all dimensions are typical values.

32.768kHz LOW POWER SMD CRYTAL OSCILLATOR

ASZKDV

Request Samples



Check Inventory



ESD Sensitive



2.0 x 1.2 x 0.7 mm
RoHS/RoHS II Compliant
MSL Level = 1

Reflow Profile [JEDEC J-STD-020]

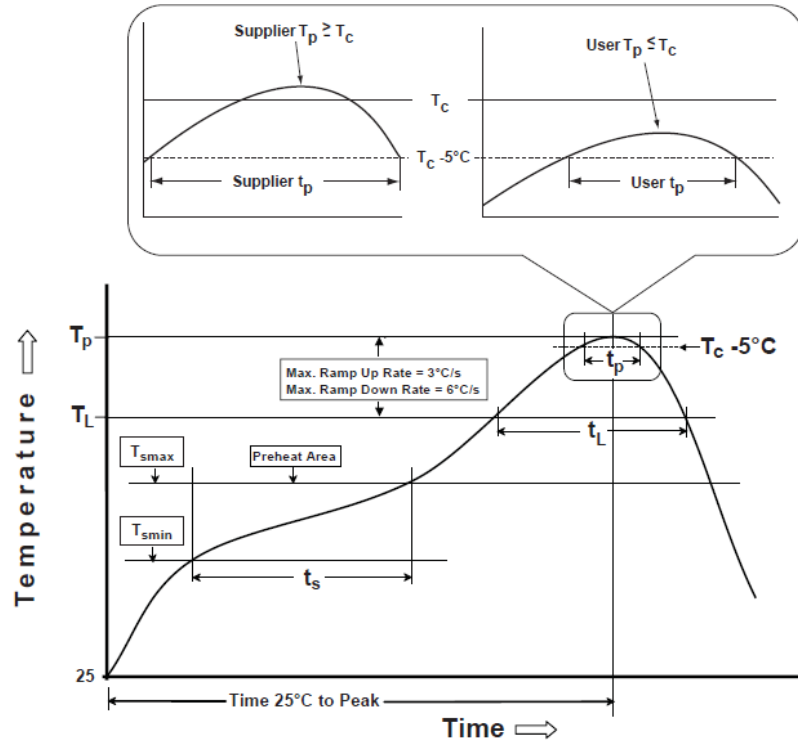


Table 1

SnPb Eutectic Process Classification Temperatures (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2

Pb-Free Process Classification Temperatures (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum (T_{smin})	100°C	150°C
Temperature maximum (T_{smax})	150°C	200°C
Time (T_{smin} to T_{smax}) (t_s)	60 - 120 sec.	60 - 120 sec.
Average ramp-up rate (T_{smax} to T_p)	3°C/sec. max	3°C/sec. max
Liquidous temperature (T_L)	183°C	217°C
Time at liquidous (t_L)	60 - 150 sec.	60 - 150 sec.
Peak package body temperature (T_p)*	see Table 1	see Table 2
Time (t_p)** within 5°C of the specified classification temperature (T_c)	20 sec.	30 sec.
Ramp-down rate (T_p to T_{smax})	6°C/sec. max	6°C/sec. max
Time 25°C to peak temperature	6 min. max	8 min. max
Reflow cycles	2 max	2 max

*Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

**Tolerance for time at peak profile temperature (t_p) is defined as supplier minimum and a user maximum.

32.768kHz LOW POWER SMD CRYTAL OSCILLATOR

ASZKDV

Request Samples



Check Inventory



ESD Sensitive



2.0 x 1.2 x 0.7 mm

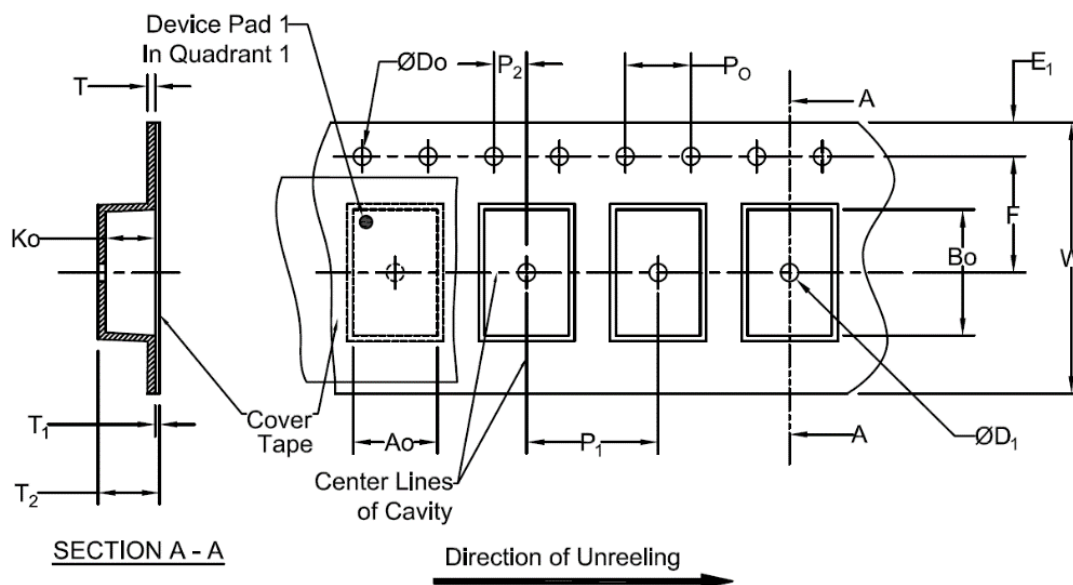
RoHS/RoHS II Compliant

MSL Level = 1

Packaging

T= Tape and reel (1,000pcs/reel)

T3= Tape and reel (3,000pcs/reel)



Tape Specifications (mm)

Width	A_o	B_o	D_o	D_1 (Min)	E_1	F	K_o
8mm	*	*	$1.5+0.1/-0.0$	1.0	1.75 ± 0.1	3.5 ± 0.05	*
Width	P_1	P_2	P_0	T (Max)	T_1 (Max)	T_2 (Max)	W (Max)
8mm	4.0 ± 0.1	2.0 ± 0.05	4.0 ± 0.1	0.6	0.1	2.5	8.3

*Note: Compliant to EIA-481

Dimensions: mm

32.768kHz LOW POWER SMD CRYTAL OSCILLATOR

ASZKDV

Request Samples



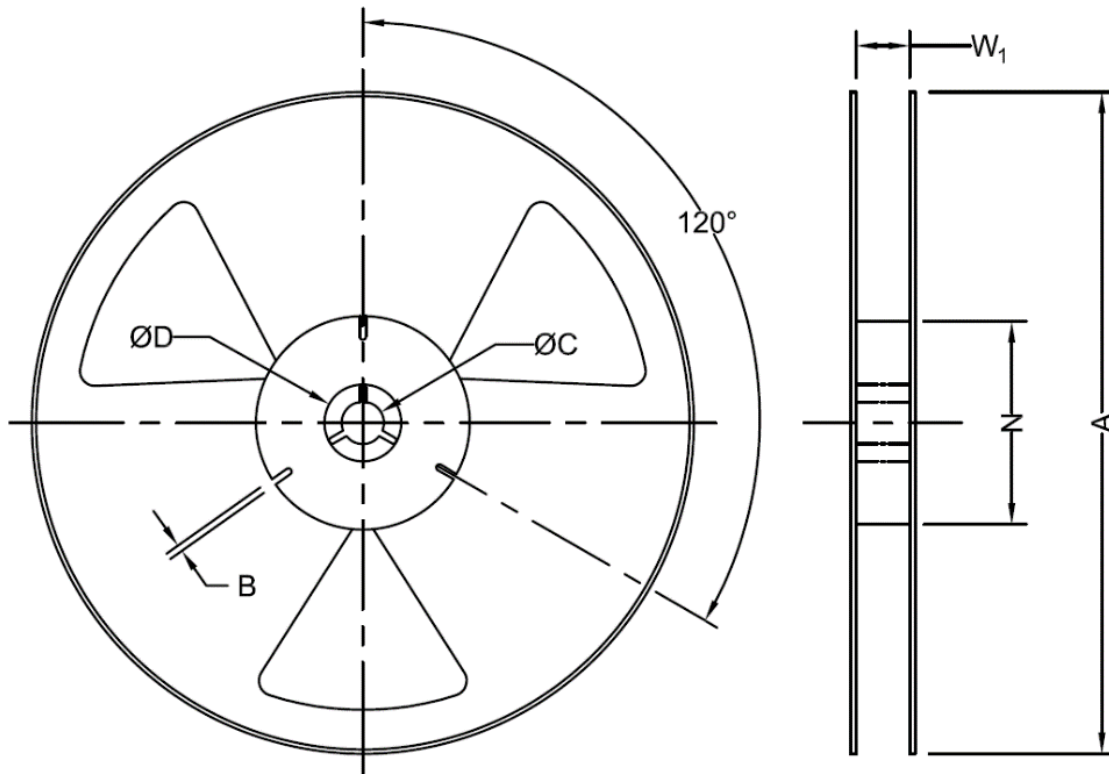
Check Inventory



ESD Sensitive



2.0 x 1.2 x 0.7 mm
RoHS/RoHS II Compliant
MSL Level = 1



Reel Specifications (mm)							
Width	Qty/Reel	A (Nom)	B (Min)	C (Min)	D (Min)	N (Min)	*W ₁
8mm	1000	178	1.5	13.0+0.5/-0.2	20.2	50	8.4+1.5/-0.0
	2000	178	1.5	13.0+0.5/-0.2	20.2	50	8.4+1.5/-0.0
	3000	178	1.5	13.0+0.5/-0.2	20.2	50	8.4+1.5/-0.0
	5000	178	1.5	13.0+0.5/-0.2	20.2	50	8.4+1.5/-0.0

*Note: Measured at Hub

Dimensions: mm

ATTENTION: Abracon LLC'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-dependent 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 LLC is required. Please contact Abracon LLC for more information.



5101 Hidden Creek Ln Spicewood TX 78669
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 01-23-23

ABRACON IS
ISO9001-2015
CERTIFIED

Mouser Electronics

Authorized Distributor

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

ABRACON:

[ASZKDV-32.768kHz-H-T](#) [ASZKDV-32.768kHz-H-T3](#) [ASZKDV-32.768kHz-L-T](#) [ASZKDV-32.768kHz-L-T3](#)