

Oven Controlled Crystal Oscillator

20 x 20mm Standard OCXO – Family Data Sheet

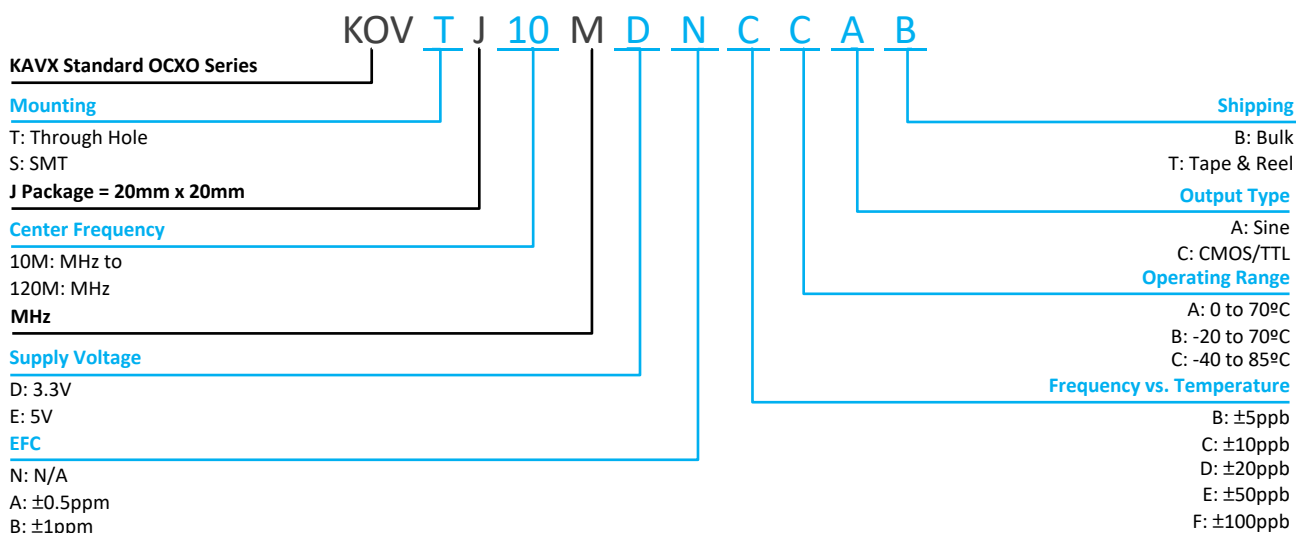


FEATURES

- Thru Hole or Surface Mountable
- High Stability vs. Temperature
- Quick Warm-Up Time
- Low Age Rates
- Low Phase Noise
- 20 x 20mm Package

KYOCERA AVX's high performance OCXO product offering is a result of 90+ years of leading products within the Frequency Control Industry. Modern layout topologies enable KYOCERA AVX to engineer and manufacture robust designs for all applications.

HOW TO ORDER



* Configuration items are in blue

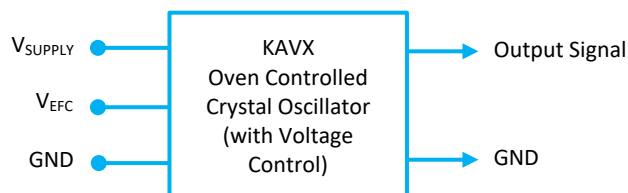
** Not all combinations of options may be possible

*** Other options may be available

APPLICATIONS

- Network Infrastructure
- 5G Picocell
- Test and Measurement Systems
- GPS Precision Timing Devices
- Medical Devices
- Aerospace
- Industrial

BLOCK DIAGRAM



Note: If EFC Option "N" is used, connect V_{EFC} to GND



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order

Oven Controlled Crystal Oscillator

20 x 20mm Standard OCXO – Family Data Sheet



PERFORMANCE SPECIFICATIONS

Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
Frequency Range		10		120	MHz
Initial Tolerance	@ +25°C (Nominal)			±100	ppb
Warm Up Time	To initial tolerance			3	Min
Frequency Stability					
vs. Temperature	Options B - (Max-Min)/2		±5		ppb
	Options C - (Max-Min)/2		±10		ppb
	Options D - (Max-Min)/2		±20		ppb
	Options E - (Max-Min)/2		±50		ppb
	Options F - (Max-Min)/2		±100		ppb
vs. Load	± 5% Δ in Load		±2		ppb
vs. Supply Voltage	± 5% Δ in supply		±2		ppb
ADEV (Short Term Stability)	T = 1 second		5E-11		
Aging					
Per Day	After 30 Days Operation			±1.0	ppb
1 st Year				±100	ppb
Supply Voltage (Vdd)	Option D	3.13	3.3	3.47	Vdc
	Option E	4.75	5	5.25	Vdc
Power Dissipation					
Start Up	@ +25°C (Nominal)			3.5	W
Steady State	@ +25°C (Nominal)		1.5		W
Electronic Frequency Control					
Voltage Range		0	Vdd/2	Vdd	Vdc
Frequency Range	Option N	0			ppm
	Option A	±0.5			ppm
	Option B	±1.0			ppm
Slope			positive		
Input Impedance			100		kΩ
Linearity			10		%

Note: Values typical of 10MHz units



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order

Oven Controlled Crystal Oscillator

20 x 20mm Standard OCXO – Family Data Sheet



PERFORMANCE SPECIFICATIONS

Parameter	Conditions	Values			Unit
Output Characteristics (CMOS/TTL)		MIN	TYP	MAX	
High Output Level	Logic "1"	90% Vdd			Vdc
Low Output Level	Logic "0"	10% Vdd			Vdc
Rise/Fall Time		5			nSec
Duty Cycle		45	50	55	%
Load		15			pF
Output Characteristics (Sinusoid)		MIN	TYP	MAX	
Output Level		9.0			dBm
Spurious		-70			dBc
Harmonics		-40			dBc
Load		45	50	55	Ω

Parameter	Conditions	Values		Unit
Phase Noise		TYP	TYP	
Phase Noise (10 MHz)	Tested at +25°C (Nominal)	Sinusoid	CMOS	
	10Hz	-120	-120	dBc/Hz
	100Hz	-140	-140	dBc/Hz
	1kHz	-145	-145	dBc/Hz
	10kHz	-155	-150	dBc/Hz
	100kHz	-155	-155	dBc/Hz
Phase Noise (100 MHz)	Tested at +25°C (Nominal)	Sinusoid	CMOS	
	10Hz	-90	-90	dBc/Hz
	100Hz	-120	-120	dBc/Hz
	1kHz	-145	-140	dBc/Hz
	10kHz	-155	-145	dBc/Hz
	100kHz	-155	-150	dBc/Hz

Note: Values typical of 10MHz units



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order

Oven Controlled Crystal Oscillator

20 x 20mm Standard OCXO – Family Data Sheet



ENVIRONMENTAL COMPLIANCE

Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
Operating Temperature	Option A	0		+70	°C
	Option B	-20		+70	°C
	Option C	-40		+85	°C
Storage Temperature		-55		+100	°C
Seal	MIL-STD-202 Method 112 Test Condition D				
Mechanical Shock	MIL-STD-202, Method 213, Test Condition C				
Vibration	Mil-Std-202, Method 201				
Acceleration Sensitivity	10MHz output Vibration profile: 0.001G ² /Hz 10Hz to 2kHz		1.0		ppb/g



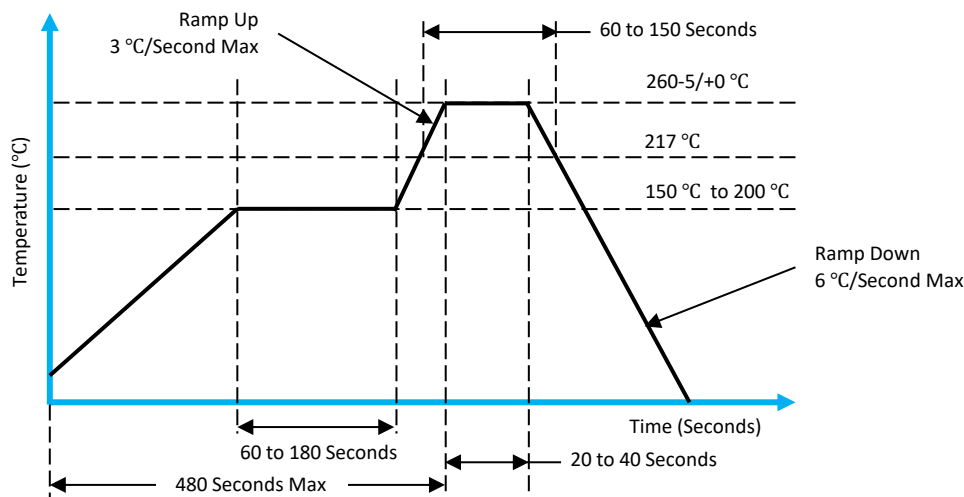
The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order

Oven Controlled Crystal Oscillator

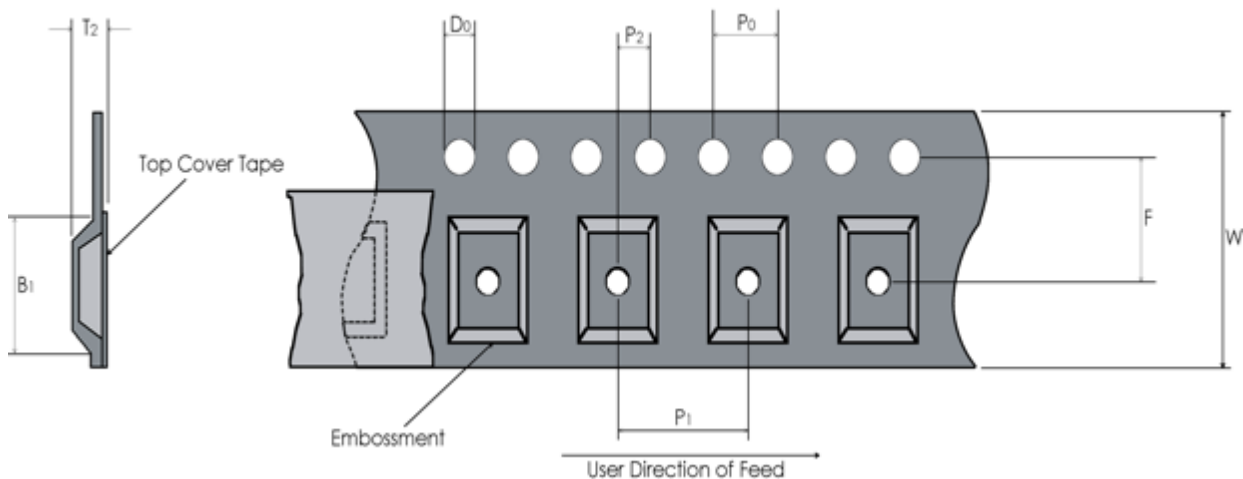
20 x 20mm Standard OCXO – Family Data Sheet



ACCEPTABLE REFLOW PROFILE



TAPE AND REEL



Tape Dimensions (mm)								Reel Dimensions (mm)	
W	F	Do	Po	P1	P2	B1	T2	Outside Dia.	Parts / Reel
44	20.5	1.5	4.0	36	2.0	20.6	19.7	330	250

- Notes:
1. Profile Classification per IPC/JEDEC J-STD-020C Pb-Free Small Body Assembly
 2. Only the SMT version can be selected as a Tape & Reel shipping method
 3. If Tape & Reel is required a MOQ of 200-piece increments are required.



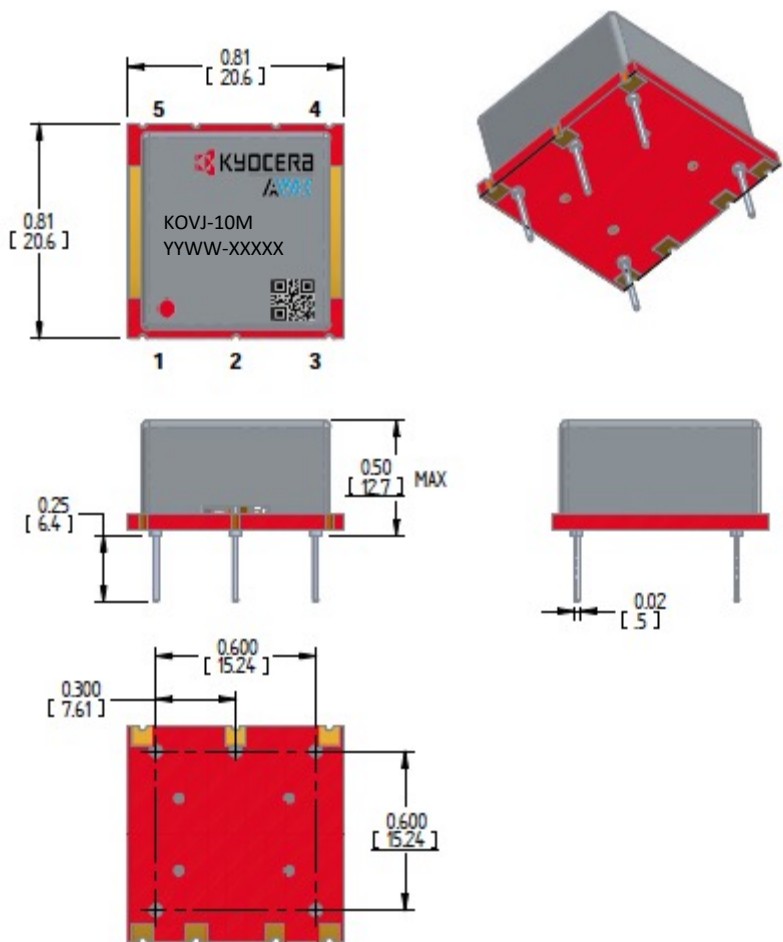
The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order

Oven Controlled Crystal Oscillator

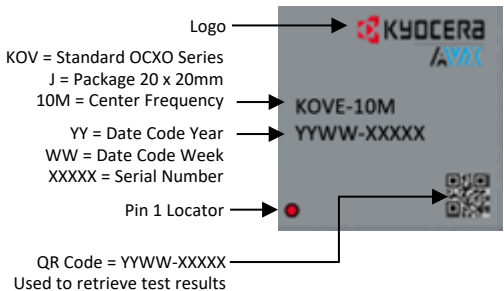
20 x 20mm Standard OCXO – Family Data Sheet



MECHANICAL SPECIFICATIONS - THROUGH HOLE



MARKING



Tolerances (mm) .X = ± 0.5 , .XX = ± 0.2 unless otherwise specified

PIN	FUNCTION
1	Supply Voltage
2	RF Output
3	Ground
4	EFC / N.C.
5, 6, 7	N.C.



Notes:
• Non-RoHS available upon request



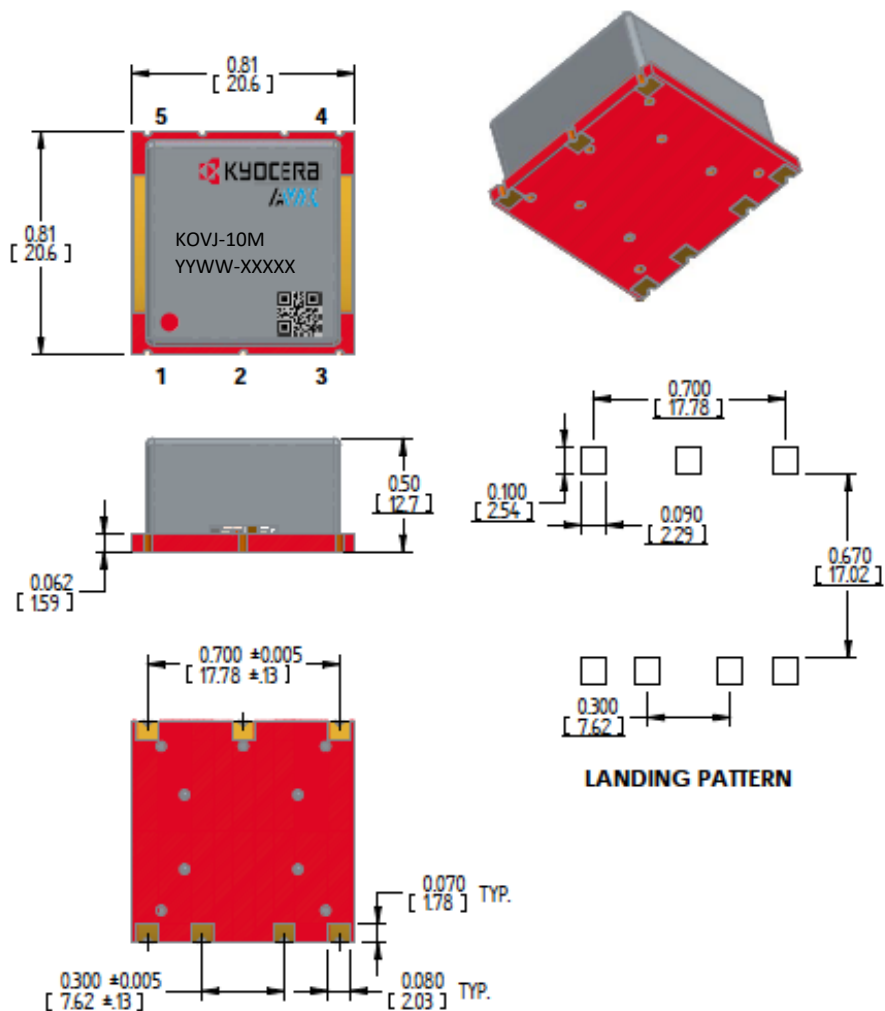
The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order

Oven Controlled Crystal Oscillator

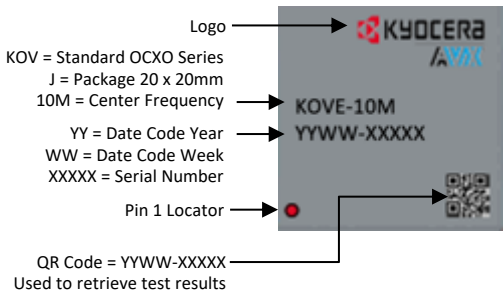
20 x 20mm Dip Standard OCXO – Family Data Sheet



MECHANICAL SPECIFICATIONS – SURFACE MOUNT



MARKING



Tolerances (mm) .X = ± 0.5 , .XX = ± 0.2 unless otherwise specified

PIN	FUNCTION
1	Supply Voltage
2	RF Output
3	Ground
4	EFC / N.C
5, 6, 7	N.C.



Notes:

- Non-RoHS available upon request



The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order

Mouser Electronics

Authorized Distributor

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

KYOCERA AVX:

[KOV TJ100MDBC BAB](#) [KOV TJ10MDBC BAB](#)