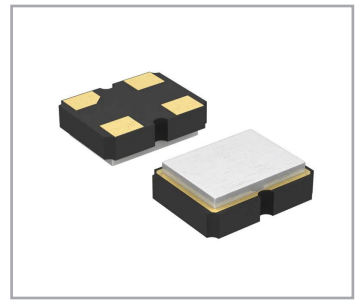
OC Type Crystal Oscillator
Typical 3.2 x 2.5 mm
Frequency 1MHz to 80MHz

STARWAVE



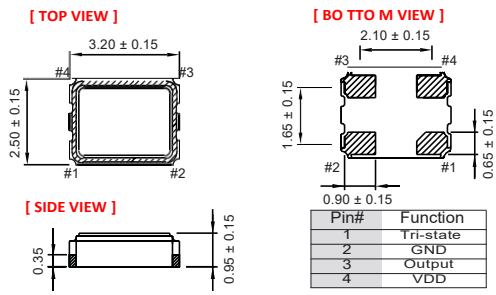
FEATURE

- Typical 3.2 x 2.5 x 0.95 mm ceramic SMD package
- Operation supply voltage: 1.8V, 2.5V and 3.3V
- Output frequency up to 80MHZ
- Tri-State Enable/Disable
- Frequency Stability ±50ppm over -40°C to 105°C
- Pb-free/RoHS compliant

TYPICAL APPLICATION

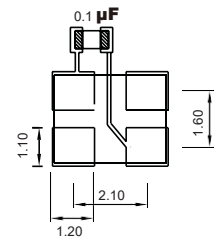
- WLAN/WiMax
- Mobile Phone
- DSC, Set-top Box , HDTV

DIMENSION (mm)



Pin#	Function
1	Tri-state
2	GND
3	Output
4	VDD

SOLDER PAD LAYOUT (mm)



To ensure optimal oscillator performance, place a by-pass capacitor of 0.1µF as close to the part as possible between Vdd and GND pads.

ELECTRICAL SPECIFICATION

Parameter		3.3V		2.5V		1.8V		Unit
		Min.	Max.	Min.	Max.	Min.	Max.	
Supply Voltage Variation (V_{DD})		V_{DD}-5%	V_{DD}+5%	V_{DD}-5%	V_{DD}+5%	V_{DD}-5%	V_{DD}+5%	V
Frequency Range		4.00	54.00	4.00	54.00	4.00	54.00	MHz
Standard Frequency		4.000MHz~54.000MHz						MHz
Supply Current	**At 15pF Load**	-	15	-	10	-	7	mA
	No Load Condition, 1.25MHz ≤ Fo < 10MHz	-	1.5	-	1.5	-	1.2	mA
	No Load Condition, 10MHz ≤ Fo < 20MHz	-	2	-	2	-	1.5	mA
	No Load Condition, 20MHz ≤ Fo < 80MHz	-	3	-	2.5	-	1.5	mA
	No Load Condition, 80MHz ≤ Fo < 125MHz	-	8	-	7	-	5	mA
Duty Cycle		45	55	45	55	45	55	%
Output Level	**Output High**	2.97	-	2.25	-	1.62	-	V
	Output Low	-	0.33	-	0.25	-	0.18	V
Transition Time: Rise / Fall Time+	**1.25MHz ≤ Fo < 10MHz**	-	3	-	4	-	5	nSec
	10MHz ≤ Fo < 20MHz	-	3	-	3	-	4	nSec
	20MHz ≤ Fo < 80MHz	-	3	-	3	-	4	nSec
	80MHz ≤ Fo < 125MHz	-	3	-	3	-	4	nSec
Startup Time		-	2	-	2	-	2	mSec
Tri-State (Input to Pin 1)	**Enable (High Voltage or Floating)**	2.31	-	1.75	-	1.26	-	V
	Disable (Low Voltage or GND)	-	0.99	-	0.75	-	0.54	V
Output Loading		15		15		15		pF
Stand by Current (@-40°C to 85°C)		-	10	-	10	-	10	µA
Stand by Current (@-40°C to 125°C)		-	20	-	20	-	20	µA
Period Jitter (Pk-Pk)		-	40	-	40	-	40	pSec
RMS Phase Jitter (12kHz to 20MHz)		-	1	-	1	-	1	pSec
Aging (@ 25°C, 1st Year)		-	±3	-	±3	-	±3	ppm
Storage Temp. Range		-55	+125	-55	+125	-55	+125	°C

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position
+Transition times are measured between 10% and 90% of V_{DD} withan output load of 15pF

FREQ. STABILITY vs. TEMP. RANGE

Temp. (°C) \ ppm	±15	± 20	±25	±50
-20~+70	△	○	○	○
-40~+85	X	△	○	○
-40~+105	X	△	○	○

*O: Available △: Conditional X: Not available
*Inclusive of calibration @ 25 °C ,operating temperature rrange,input Voltage variation,load variation,aging (1st year),shock,and vibration

Note: not all combination of options are available. Other specifications may be available upon request.

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Ordering Information

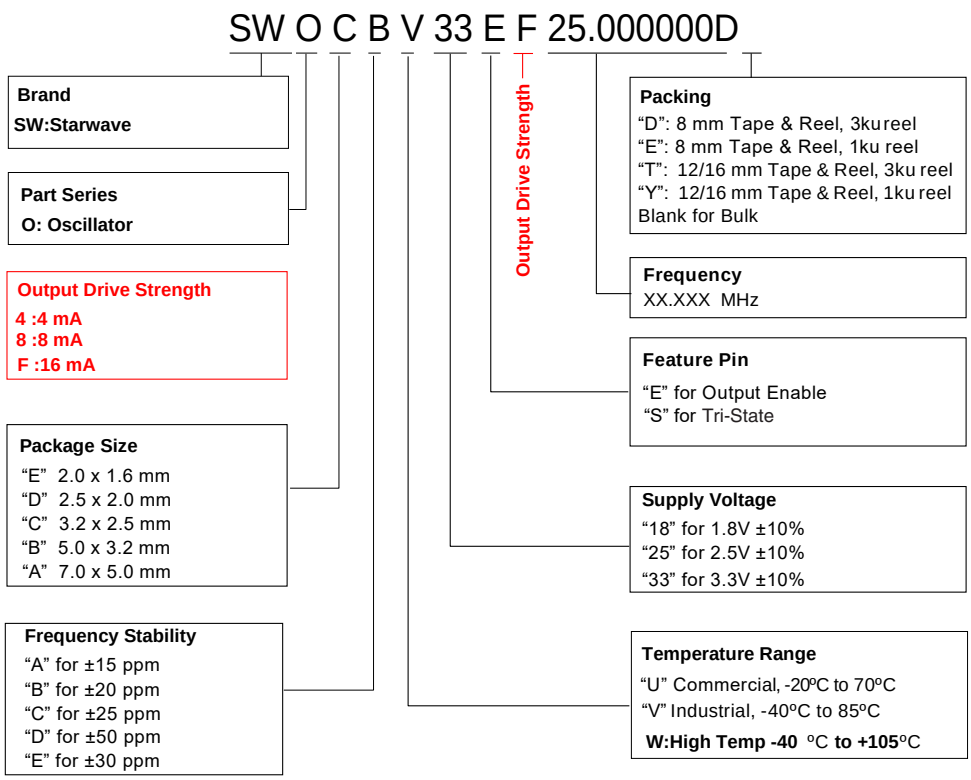

Table 13. Ordering Codes for Supported Tape & Reel Packing Method

Device Size (mm x mm)	16 mm T&R (3ku)	16 mm T&R (1ku)	12 mm T&R (3ku)	12 mm T&R (1ku)	8 mm T&R (3ku)	8 mm T&R (1ku)
2.0 x 1.6	–	–	–	–	D	E
2.5 x 2.0	–	–	–	–	D	E
3.2 x 2.5	–	–	–	–	D	E
5.0 x 3.2	–	–	T	Y	–	–
7.0 x 5.0	T	Y	–	–	–	–