

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

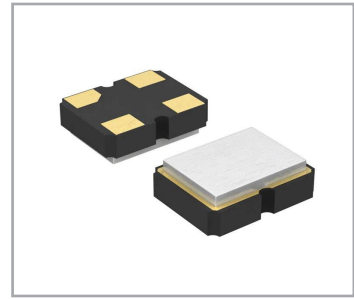
STARWAVE

FEATURE

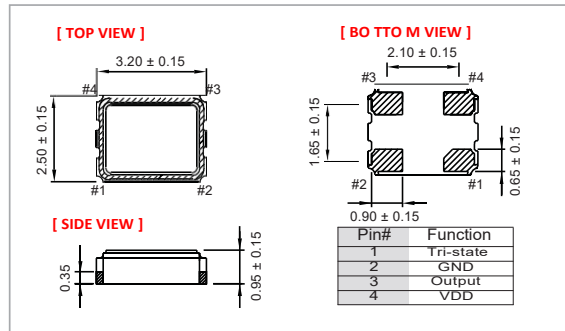
- Typical 3.2 x 2.5 x 0.95 mm ceramic SMD package
- Operation supply voltage: 1.8V, 2.5V and 3.3V
- Output frequency up to 80MHz
- Tri-State Enable/Disable
- Frequency Stability ± 50 ppm over -40°C to 105°C
- Pb-free/RoHS compliant

TYPICAL APPLICATION

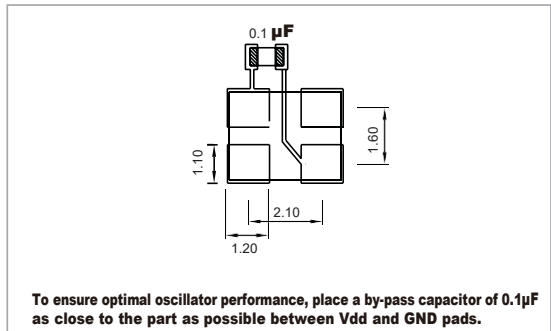
- WLAN/WiMax
- Mobile Phone
- DSC, Set-topBox, HDTV



DIMENSION (mm)



SOLDER PAD LAYOUT (mm)



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 \leq Fo < 10MHz	-	1.5	-	1.5	-	1.2	mA
	No Load Condition, 10MHz \leq Fo < 20MHz	-	2	-	2	-	1.5	mA
	No Load Condition, 20MHz \leq Fo < 80MHz	-	3	-	2.5	-	1.5	mA
	No Load Condition, 80MHz \leq 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 \leq Fo < 10MHz	-	3	-	4	-	5	nSec
	10MHz \leq Fo < 20MHz	-	3	-	3	-	4	nSec
	20MHz \leq Fo < 80MHz	-	3	-	3	-	4	nSec
	80MHz \leq 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 , 1 st Year)		-	± 3	-	± 3	-	± 3	ppm
Storage Temp. Range		-55	+125	-55	+125	-55	+125	$^{\circ}\text{C}$

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} with an output load of 15pF

FREQ. STABILITY vs. TEMP. RANGE

Temp. $^{\circ}\text{C}$	ppm	± 15	± 20	± 25	± 50
-20~+70	Δ	Δ	\circ	\circ	\circ
-40~+85	\times	\times	Δ	\circ	\circ
-40~+105	\times	\times	Δ	\circ	\circ

*O: Available Δ : Conditional X: Not available
*Inclusive of calibration @ 25°C , operating temperature range, 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.

OC Type Crystal Oscillator

Typical 3.2 x 2.5 mm

Frequency 1MHz to 80MHz



Ordering Information

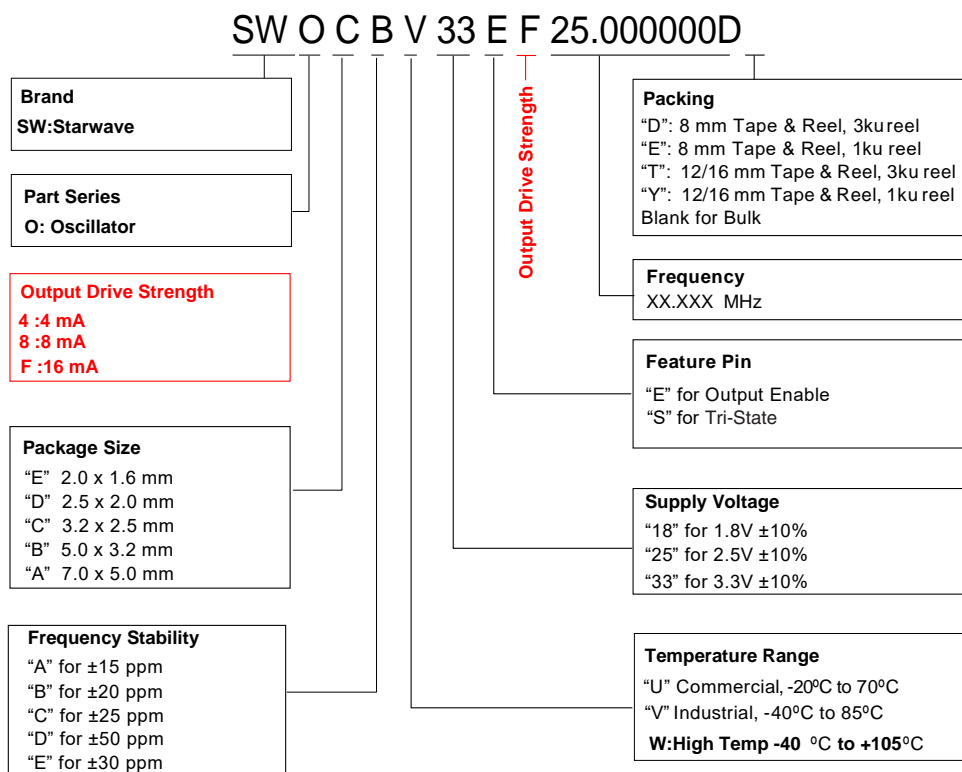


Table 13. Ordering Codes for Supported Tape & Reel Packing Method

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	-	-	-	-