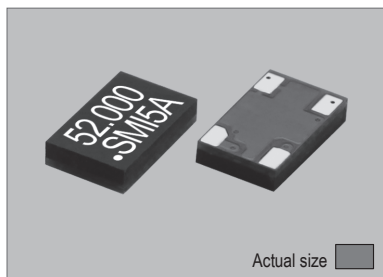


**SXO-4053CS SERIES** (+1.8V to +3.3V FIXED MODELS) 5.0x3.2 mm

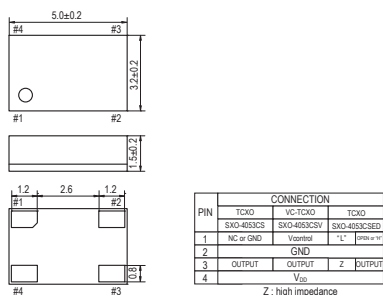
STANDARD SMD TCXO

**SXO-4053CS**

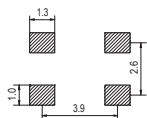


Actual size  
0.043 gm (wt.)

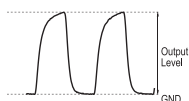
**SXO-4053CS**



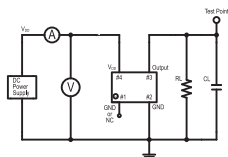
**SOLDERING PATTERN**



**OUTPUT WAVEFORM**

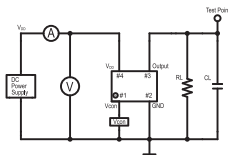


**TEST CIRCUIT SXO-4053CS**



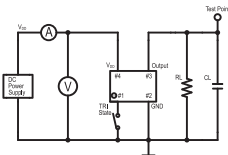
Both DC-Cut capacitor and by-pass capacitor are built in the oscillator.  
RL: 10Kohm ± 10%  
CL: 10pF ± 10% including fixture and probe capacitance

**SXO-4053CSV**



Both DC-Cut capacitor and by-pass capacitor are built in the oscillator.  
RL: 10Kohm ± 10%  
CL: 10pF ± 10% including fixture and probe capacitance

**SXO-4053CEV**



Both DC-Cut capacitor and by-pass capacitor are built in the oscillator.  
RL: 10Kohm ± 10%  
CL: 10pF ± 10% including fixture and probe capacitance

**STANDARD SPECIFICATIONS**

● CLIPPED SINE WAVEFORM  
● PACKAGE SIZE 5.0x3.2 mm

Item	Specifications							
General part number	SXO-4053CS*1	SXO-4053CSV*1	SXO-4053CSED*1					
Frequency range	13.000 MHz to 52.000 MHz							
Initial frequency tolerance at +25°C ±2°C	±1.5 ppm max. *2*3							
TCXO or VC-TCXO	TCXO	VC-TCXO	TCXO					
Frequency Stability	Temperature range	DD/kjj : ±2 ppm max. : over -30°C to +75°C (referred to +25°C) <sup>13</sup> CC/klj : ±1.5 ppm max. : over -30°C to +85°C (referred to +25°C) <sup>13</sup> BB/klj : ±1 ppm max. : over -30°C to +85°C (referred to +25°C) <sup>13</sup> AA/klj : ±0.5 ppm max. : over -30°C to +85°C (referred to +25°C) <sup>13</sup>						
	Input voltage change	± 0.2 ppm max. at V <sub>DD</sub> ±5% DC						
	Output load change	± 0.2 ppm max. at 10 kΩ ±10% with 10 pF ±10%						
	Aging	± 1 ppm max. per year at +25°C ±3°C						
Operating Conditions	Operating temperature	-30°C to +75°C (S1 = Standard 1) -30°C to +85°C (S2 = Standard 2) -40°C to +85°C (W = Option, frequency dependent)						
	Supply voltage (V <sub>DD</sub> )	D = +1.8V, F = +2.5V, H = +2.8V, J = +3.0V, K = +3.3V DC ±5%						
	Control voltage (Pin#1)	n.a.	1/2 V <sub>DD</sub> ±1V (V <sub>DD</sub> = +2.5V to +3.3V)					
	Stand-by control voltage (Pin#1)	n.a.	V <sub>H</sub> : 80% V <sub>DD</sub> min. V <sub>L</sub> : 20% V <sub>DD</sub> max.					
Absolute Max. Ratings	Supply voltage	-0.5V to +4V DC						
	Vcontrol voltage (Pin#1)	n.a.	-0.6V to V <sub>DD</sub> +0.6V DC					
	Storage temperature	-40°C to +85°C						
Input current	1.5 mA max. (13.000 MHz to 30.000 MHz) 1.7 mA max. (30.000 MHz to 40.000 MHz) 2 mA max. (40.000 MHz to 52.000 MHz)							
Stand-by current (Pin#1 = V <sub>L</sub> )	n.a.	n.a.	10µA max.					
Output (-40°C to +85°C)	Level	0.8 V <sub>p-p</sub> min.						
	Load	10 kΩ // 10 pF						
	Waveform	Clipped sine wave (DC-cut)						
Frequency Adjustment	Voltage control	n.a.	±8 ppm to ±13 ppm (V <sub>DD</sub> = +1.8V) ±9 ppm to ±15 ppm (V <sub>DD</sub> = +2.5V to +3.3V)					
		n.a.	n.a.					
Frequency slope	n.a.	positive	n.a.					
Disable delay time	n.a.	n.a.	200 ns max.					
Enable delay time	n.a.	n.a.	10 ms max.					
Start-up time	10 ms max.							
SSB phase noise (26.000 MHz)	-133 dBc / Hz, Typical at 1 kHz offset							
Short-term frequency stability	±1 ppb max. (Allan variance Tau = 0.1 sec.)							
Reflow condition	+250°C ±10°C for 10 seconds +170°C ±10°C for 1 to 2 minutes (preheating)							
Standard frequencies (MHz)	16.368, 16.369, 19.200, 26.000, 27.456, 33.600, 38.400, 52.000							
Optional Operating Temperature*4	Low limit / Symbol	-10°C / g	-15°C / h	-20°C / i	-25°C / j	-30°C / k	-35°C / l	-40°C / m
	High limit / Symbol	+55°C / ff	+60°C / gg	+65°C / hh	+70°C / ii	+75°C / jj	+80°C / kk	+85°C / ll

(\*1) Final part number to be assigned with package type, TCXO or VC-TCXO, frequency stability, input voltage, operating temperature and frequency.  
e.g. SXO-4053CSED-BB/klj-K-S2-26MHz

(\*2) Referred to nominal frequency before reflow soldering.

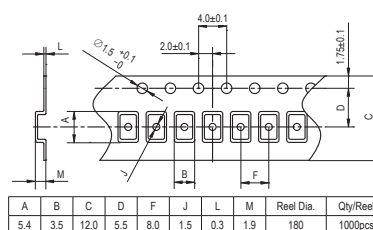
(\*3) At Vcon = 1/2 V<sub>DD</sub> DC for SXO-4053CSV.

(\*4) Select "low limit" and "high limit" for new operating temperature combination from the lists.

**PACKAGE DATA**

Item	Package	SXO-4053CS
Cover		Epoxy Resin
Base		Glass Epoxy
Sealing		Seam (Built-in crystal)
Terminal		Copper (metalized)
Terminal plating		Gold / Nickel (surface) / (under)
RoHS		Compliant (Pb-free)

**TAPE SPECIFICATIONS**



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XTAL

CLK OSC

VCXO

TCXO

OCXO

MGF