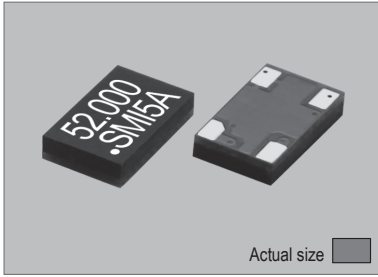
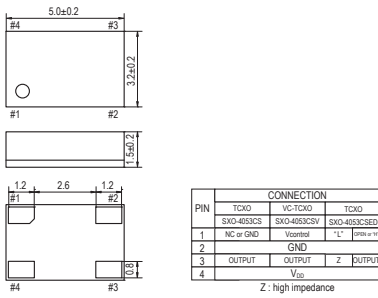
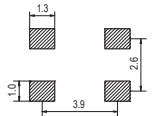
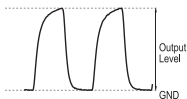
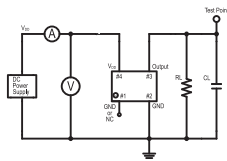
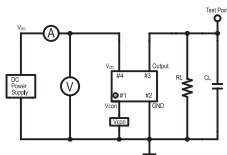
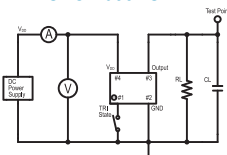


SXO-4053CS

 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 $\pm 10\%$
CL: 10pF $\pm 10\%$ including fixture and probe capacitance

SXO-4053CSV

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

SXO-4053CEV

 Both DC-Cut capacitor and by-pass capacitor are built in the oscillator.
RL: 10Kohm $\pm 10\%$
CL: 10pF $\pm 10\%$ 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 $\pm 2^\circ\text{C}$	± 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 $+75^\circ\text{C}$ (referred to $+25^\circ\text{C}$) ³ CC/klj: ± 1.5 ppm max.: over -30°C to $+85^\circ\text{C}$ (referred to $+25^\circ\text{C}$) ³ BB/klj: ± 1 ppm max.: over -30°C to $+85^\circ\text{C}$ (referred to $+25^\circ\text{C}$) ³ AA/klj: ± 0.5 ppm max.: over -30°C to $+85^\circ\text{C}$ (referred to $+25^\circ\text{C}$) ³						
	Input voltage change	± 0.2 ppm max. at $V_{DD} \pm 5\%$ DC						
	Output load change	± 0.2 ppm max. at 10 k Ω $\pm 10\%$ with 10 pF $\pm 10\%$						
	Aging	± 1 ppm max. per year at $+25^\circ\text{C} \pm 3^\circ\text{C}$						
Operating Conditions	Operating temperature	-30°C to $+75^\circ\text{C}$ (S1 = Standard 1) -30°C to $+85^\circ\text{C}$ (S2 = Standard 2) -40°C to $+85^\circ\text{C}$ (W = Option, frequency dependent)						
	Supply voltage (V_{DD})	D = +1.8V, F = +2.5V, H = +2.8V, J = +3.0V, K = +3.3V DC $\pm 5\%$						
	Control voltage (Pin#1)	n.a.	$1/2 V_{DD} \pm 0.8V$ ($V_{DD} = +1.8V$) $1/2 V_{DD} \pm 1V$ ($V_{DD} = +2.5V$ to $+3.3V$)					
Absolute Max. Ratings	Stand-by control voltage (Pin#1)	n.a.	V_{IH} : 80% V_{DD} min. V_{IL} : 20% V_{DD} max.					
	Supply voltage	-0.5V to +4V DC						
Input current	Vcontrol voltage (Pin#1)	n.a.	-0.6V to $V_{DD} + 0.6V$ DC					
	Storage temperature	-40°C to $+85^\circ\text{C}$						
Stand-by current (Pin#1 = V_{IL})	Supply voltage	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)						
	Level	0.8 Vp-p min.						
	Load	10 k Ω // 10 pF						
Output (-40°C to +85°C)	Waveform	Clipped sine wave (DC-cut)						
	Frequency Adjustment	Voltage control	± 8 ppm to ± 13 ppm ($V_{DD} = +1.8V$) ± 9 ppm to ± 15 ppm ($V_{DD} = +2.5V$ to $+3.3V$)					
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	$+250^\circ\text{C} \pm 10^\circ\text{C}$ for 10 seconds $+170^\circ\text{C} \pm 10^\circ\text{C}$ 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 $V_{con} = 1/2 V_{DD}$ 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
