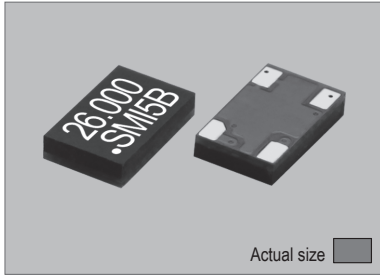


SXO-4053CM SERIES (+1.8 V to +3.3 V FIXED MODELS) 5.0x3.2 mm

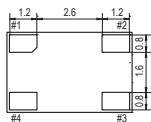
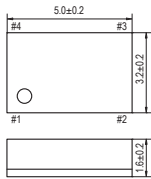
STANDARD SMD TCXO

SXO-4053CM



Actual size
0.043 gm (wt.)

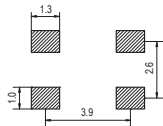
SXO-4053CM



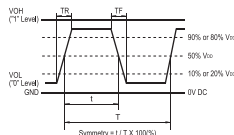
PIN	CONNECTION		
	TCXO	VC-TCXO	TCXO
1	SXO-4053CM	SXO-4053CMV	SXO-4053CMED
2	NC or GND	V _{DD} or I ² C	I ² C or V _{DD}
3	GND	GND	GND
4	OUTPUT	OUTPUT	Z OUTPUT

Z: high impedance

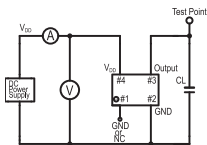
SOLDERING PATTERN



OUTPUT WAVEFORM

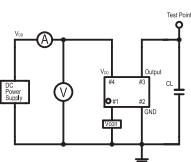


TEST CIRCUIT
SXO-4053CM



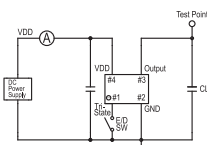
By-pass capacitor is built in the oscillator.
CL: including fixture and probe capacitance.

SXO-4053CMV



By-pass capacitor is built in the oscillator.
CL: including fixture and probe capacitance.

SXO-4053CMED



By-pass capacitor is built in the oscillator.
CL: including fixture and probe capacitance.

STANDARD SPECIFICATIONS

● CMOS OUTPUT
● PACKAGE SIZE 5.0x3.2 mm

Item	Specifications							
General part number	SXO-4053CM*1	SXO-4053CMV*1	SXO-4053CMED*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/k/j: ±2 ppm max.: over -30°C to +75°C (referred to +25°C) ³ CC/kl: ±1.5 ppm max.: over -30°C to +85°C (referred to +25°C) ³ BB/kl: ±1 ppm max.: over -30°C to +85°C (referred to +25°C) ³ AA/kl: ±0.5 ppm max.: over -30°C to +85°C (referred to +25°C) ³						
	Input voltage change	±0.2 ppm max. at V _{DD} ±5% DC						
	Output load change	±0.2 ppm max. at 15 pF ±10%						
	Aging	±1 ppm max. per year at +25°C ±3°C						
	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)						
Operating Conditions	Supply voltage (V _{DD})	D = +1.8V, F = +2.5V, H = +2.8V, J = +3.0V, K = +3.3V ±5% DC						
	Control voltage (Pin#1)	n.a.	0.9V ±0.8V (V _{DD} = +1.8V) 1/2 V _{DD} ±1V (V _{DD} = +2.5V to +3.3V)					
	Stand-by control voltage (Pin#1)	n.a.	n.a.	V _{IH} : 80% V _{DD} min. V _{IL} : 20% V _{DD} max.				
Absolute Max. Ratings	Supply voltage	-0.5V to +4V DC						
	Vcontrol voltage (Vcon)	n.a.	-0.6V to V _{DD} +0.6V DC					
	Storage temperature	-40°C to +85°C						
Input current	Supply voltage	4 mA max. (13.000 MHz to 30.000 MHz) 5 mA max. (30.000 MHz to 40.000 MHz) 6 mA max. (40.000 MHz to 52.000 MHz)						
	Vcontrol voltage (Vcon)	n.a.						
	Storage temperature	-40°C to +85°C						
Stand-by current	n.a.	n.a.	10 µA max.					
Output (-40°C to +85°C)	Symmetry	45% to 55% at 1/2 V _{DD} level						
	Rise and fall times	10 ns max. (10% V _{DD} to 90% V _{DD} level)						
	"0" level	V _{OL} : 10% V _{DD} max.						
	"1" level	V _{OH} : 90% V _{DD} min.						
	Load	15 pF max. (CMOS)						
Frequency Adjustment	Voltage control	n.a.	±8 ppm to ±13 ppm (V _{DD} = +1.8V)					
		n.a.	±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	+240°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-4053CMED-BB/kl-I-K-S2-26MHz

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

(*3) At Vcon = 1/2 V_{DD} DC for SXO-4053CMV.

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

PACKAGE DATA

Item	Package	SXO-4053CM
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

