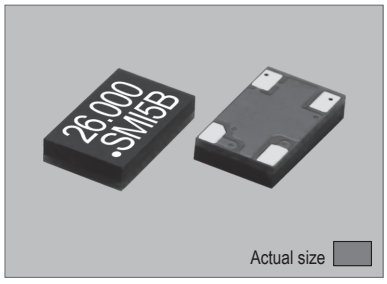
SXO-4053CM SERIES (+1.8 V to +3.3 V FIXED MODELS) 5.0x3.2 mm

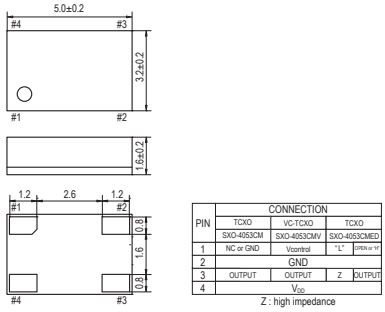
STANDARD SMD TCXO

SXO-4053CM



0.043 gm (wt.)

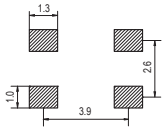
SXO-4053CM



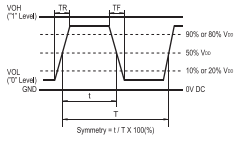
PIN	CONNECTION		
	TCXO	VC-TCXO	TCXO
	SXO-4053CM	SXO-4053CMV	SXO-4053CMED
1	NC or GND	Vcontrol	"L" OPEN or "H"
2	GND		
3	OUTPUT	OUTPUT	Z OUTPUT
4	V_{DD}		

Z : high impedance

SOLDERING PATTERN

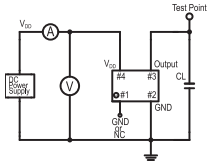


OUTPUT WAVEFORM



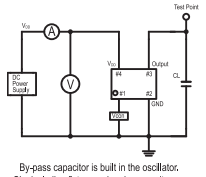
TEST CIRCUIT

SXO-4053CM



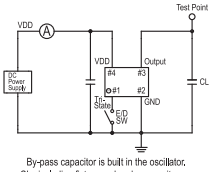
By-pass capacitor is built in the oscillator.
CL : including fixture and probe capacitance.

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 frequnecy 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)*3 CC/kll : ±1.5 ppm max. : over −30°C to +85°C (referred to +25°C)*3 BB/kll : ±1 ppm max. : over −30°C to +85°C (referred to +25°C)*3 AA/kll : ±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 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_{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)	n.a.
	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	n.a.
	Storage temperature	−40°C to +85°C		
Input current		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)		
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.
		n.a.	±9 ppm to ±15 ppm (V_{DD} = +2.5V to +3.3V)	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		+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		

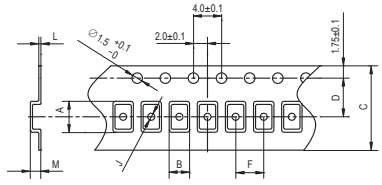
Optional Operating Temperature*4	−10°C / g	−15°C / h	−20°C / i	−25°C / j	−30°C / k	−35°C / l	−40°C / m
Low limit / Symbol							
High limit / Symbol	+55°C / ff	+60°C / gg	+65°C / hh	+70°C / ii	+75°C / jj	+80°C / kk	+85°C / ll

(*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/kll-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



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
5.4	3.5	12.0	5.5	8.0	1.5	0.3	1.9	180	1000pcs