

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

STANDARD SMD TCXO

XTAL

CLK OSC

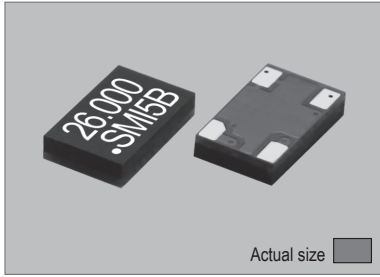
VCXO

TCXO

OCXO

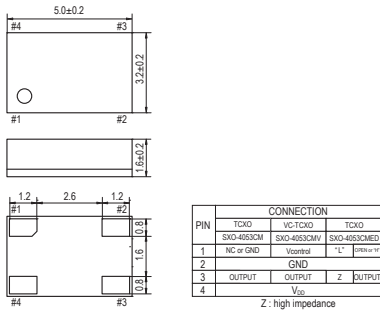
MCF

SXO-4053CM

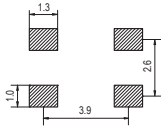


Actual size
0.043 gm (wt.)

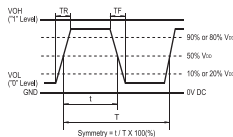
SXO-4053CM



SOLDERING PATTERN

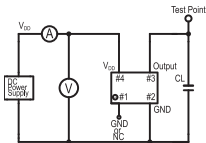


OUTPUT WAVEFORM



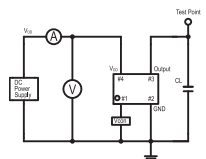
TEST CIRCUIT

SXO-4053CM



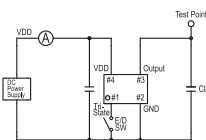
By-pass capacitor is built in the oscillator.
CL: including fixture and probe capacitance.

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/k/l: ±1.5 ppm max. : over -30°C to +85°C (referred to +25°C) ³ BB/k/l: ±1 ppm max. : over -30°C to +85°C (referred to +25°C) ³ AA/k/l: ±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	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/k/l-K-S2-26MHz

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

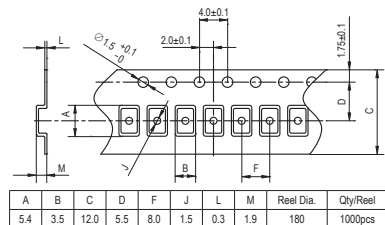
(*³) At Vcon = 1/2 V_{DD} DC for SXO-4053CMV.

(*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



TELCONA AG • Im Vorderasp 4 • CH-8154 Oberglatt • Switzerland
Tel. +41 (0) 44 860 25 50 • Fax +41 (0) 44 860 28 22
info@telcona.com • www.telcona.com