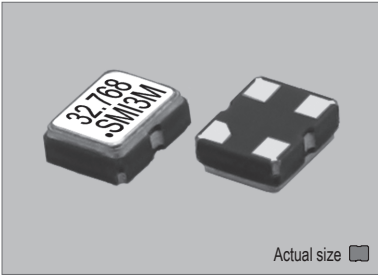


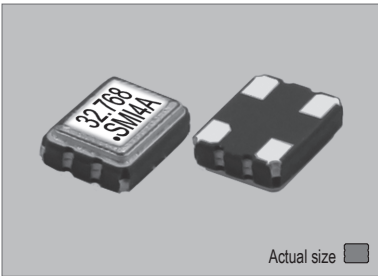
327SMO(C) & 327SMO(D) (+1.8V to +5.0V 32.768 kHz MODELS) 2.5x2.0 mm 3.2x2.5 mm **STANDARD SMD CLOCK OSCILLATORS**

327SMO(C)



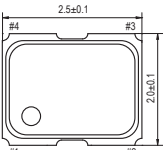
Actual size 0.014 gm (wt)

327SMO(D)

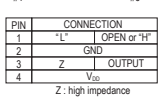
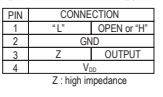
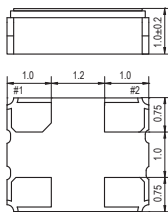
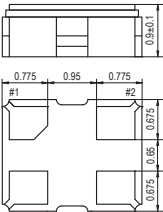
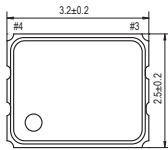


Actual size 0.025 gm (wt)

327SMO(C)



327SMO(D)



PIN	CONNECTION
1	"L" OPEN or "H"
2	GND
3	Z OUTPUT
4	V _{DD}

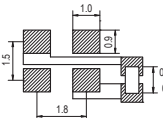
Z: high impedance

PIN	CONNECTION
1	"L" OPEN or "H"
2	GND
3	Z OUTPUT
4	V _{DD}

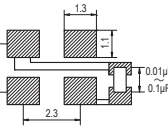
Z: high impedance

SOLDERING PATTERN

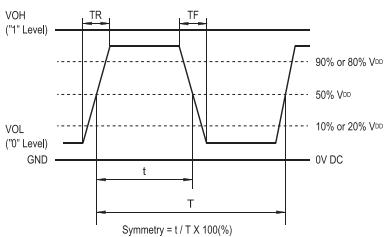
327SMO(C)



327SMO(D)



OUTPUT WAVEFORM



STANDARD SPECIFICATIONS

- 32.768 kHz CMOS OUTPUT
- HIGH STABILITY
- AT-CUT CRYSTAL BUILT-IN
- PACKAGE SIZE 2.5x2.0 mm & 3.2x2.5 mm

Item	Specifications	
General part number*1	327SMO(C)*1	327SMO(D)*1
Output frequency	32.768 kHz	
Frequency stability (over all conditions)	327SMO(C)C or 327SMO(D)C : ± 30 ppm over -40°C to +85°C 327SMO(C)D or 327SMO(D)D : ± 25 ppm over -40°C to +85°C	
Operating Conditions	Operating temperature	-40°C to +85°C (Standard)
	Supply voltage (V _{DD})	+1.8V, +2.5V, +3.0V, +3.3V or +5.0V DC ±5%
	Stand-by control voltage (Pin#1)	V _{IH} : 90% V _{DD} min. V _{IL} : 10% V _{DD} max.*2
Absolute Max. Ratings	Supply voltage	-0.3V to +7.0V DC
	Storage temperature	-55°C to +100°C
Input current (Pin#1 = Open or V _{IH})	327SMO(C) : 125 µA, Typical (160 µA max.) / -40°C to +85°C 327SMO(D) : 80 µA, Typical (100 µA max.) / -40°C to +85°C	
Stand-by current*2	10 µA max. (Pin #1 = V _{IL})	
Output (-40°C to +85°C)	Symmetry	45% to 55% at 1/2 V _{DD} level
	Rise and fall times	12 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	30 pF max. (CMOS)	
Disable delay time	2 µs max.	
Enable delay time	0.5 ms max.	
Start-up time	1 ms max.	
Aging	±5 ppm max. at +25°C ±3°C for first year +250°C ±10°C for 10 seconds +170°C ±10°C for 1 to 2 minutes (preheating)	
Reflow condition		

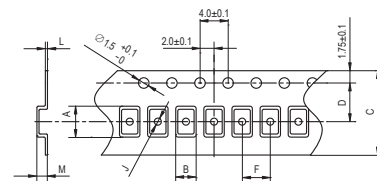
(*1) Final part number to be assigned with package type, input voltage and frequency stability.
e.g. 327SMO(3.0V)D

(*2) Internal crystal oscillation to be halted (Pin#1 = V_{IL})

PACKAGE DATA

Item	Package	327SMO(C) & 327SMO(D)
Lid		Metal
Base		Ceramic
Sealing		Seam
Terminal		Tungsten (metalized)
Terminal plating		Gold / Nickel (surface) / (under)
RoHS		Compliant (Pb-free)

TAPE SPECIFICATIONS



327SMO(C)									
A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
2.7	2.3	8.0	3.5	4.0	1.1	0.25	1.1	180	1000pcs 2000pcs 3000pcs

327SMO(D)									
A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
3.5	2.8	8.0	3.5	4.0	1.0	0.25	1.4	180	1000pcs 2000pcs

TEST CIRCUIT

