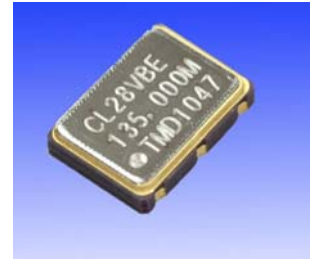


# - LVDS Output Crystal Oscillator -

**TYPE : CL28V\*\* / CL284\*\***

RoHS

- LVDS output SPXO ( 13.5MHz to 220MHz )
- Excellent performance / Low jitter and high stability vs temperature
- High speed switching (Tr/Tf=0.2ns Typ.) , low consumption
- RoHS compliant



Supply Voltage	+2.5Vdd or +3.3Vdd
Output Level	LVDS
Dimension	7.0*5.0*1.8mm

## - Electrical Specifications -

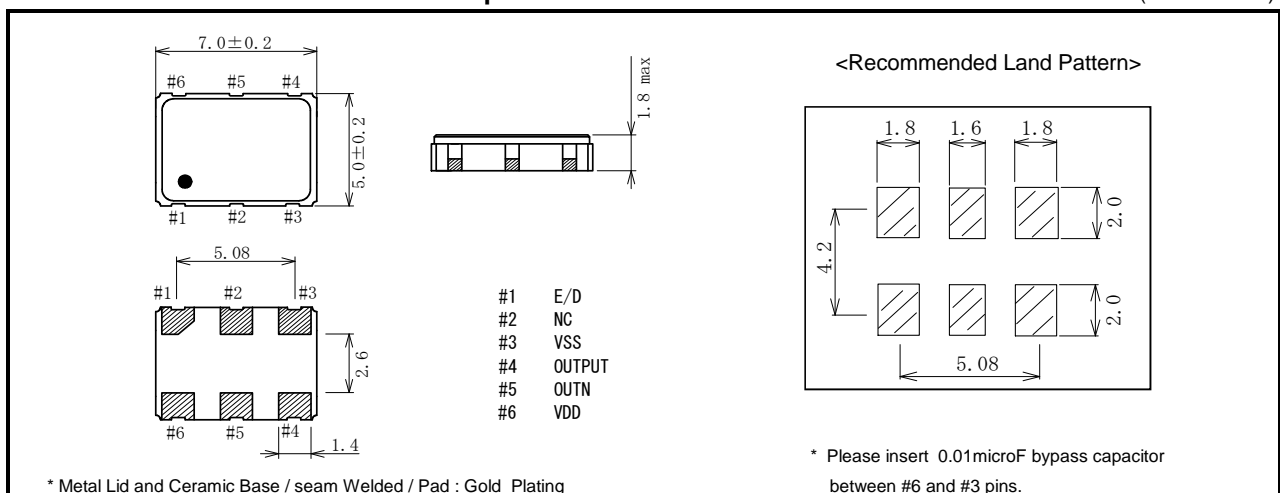
\* +3.3Vdd = < CL284\* \* >    +2.5Vdd = < CL28V\* \* >

Item	Condition	MIN	TYP	MAX	UNIT
Frequency Range (Fo)		13.5	-	220	MHz
Supply Voltage	Vdd=+3.3V	+3.135	-	+3.465	V
	Vdd=+2.5V	+2.375	-	+2.625	V
Total Frequency Accuracy ( Including accuracy, supply voltage change, 1st year aging )	(G) option	-20	-	+20	PPM
	(A) option	-25	-	+25	PPM
	(B) option	-50	-	+50	PPM
	(C) option	-100	-	+100	PPM
Operating temperature	(S) option	0	-	+70	deg.c
	(A) option	-20	-	+70	deg.c
	(B) option	-40	-	+85	deg.c
	(C) option	-10	-	+70	deg.c
Storage temperature		-50	-	+125	deg.c
Output Level	VOH	-	1.43	1.6	V
	VOL	0.9	1.10	-	V
Rise Time	20% to 80%	-	0.2	0.4	ns
Fall Time	80% to 20%	-	0.2	0.4	ns
Duty	at output cross point	45	-	55	%
Differential Output Level		247	330	454	mV
Offset Level	RL =100Ohm / Fo=100MHz	1.125	1.25	1.375	V
Offset Level Accuracy	RL =100Ohm / Fo=100MHz	-	-	50	mV
Current Consumption	Vdd = +3.3V	-	-	34	mA
	Vdd = +2.5V	-	-	34	mA
Load			100		Ohm
RMS jitter *1	Offset : 12kHz to 20MHz	-	0.2 - 0.3	-	ps
Start Up Time		-	-	10	ms
E/D function	#1pin = Hi or Open : Output Enable / Low : Output Disable				

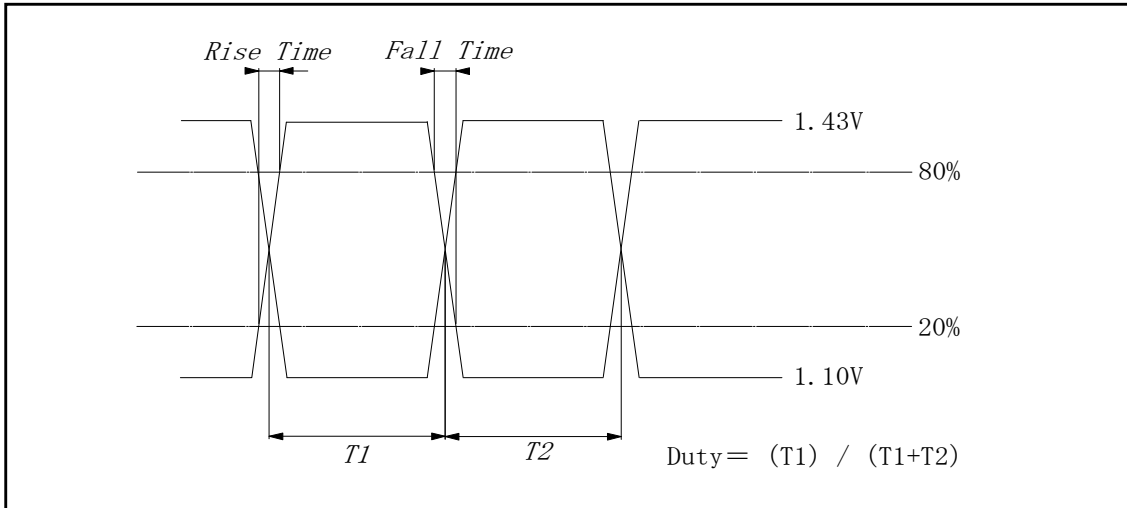
1\*) Measured with E5052B signal source analyzer (Agilent technology).  
( Typical RMS Jitter value is depending on Output Frequency ).

## < Dimension and recommended land pattern >

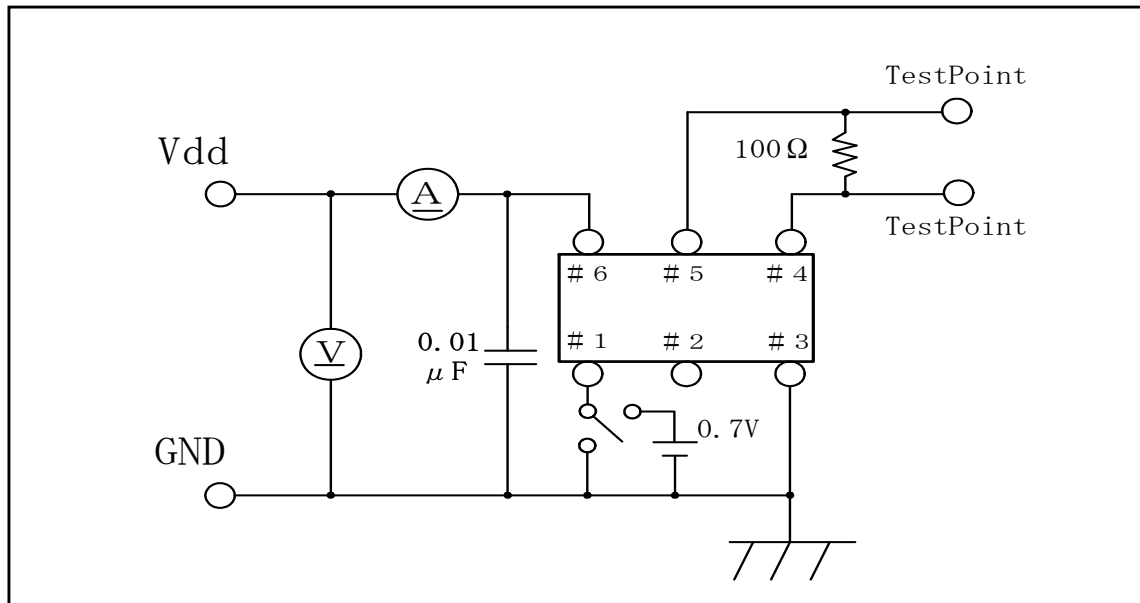
( Unit in mm )



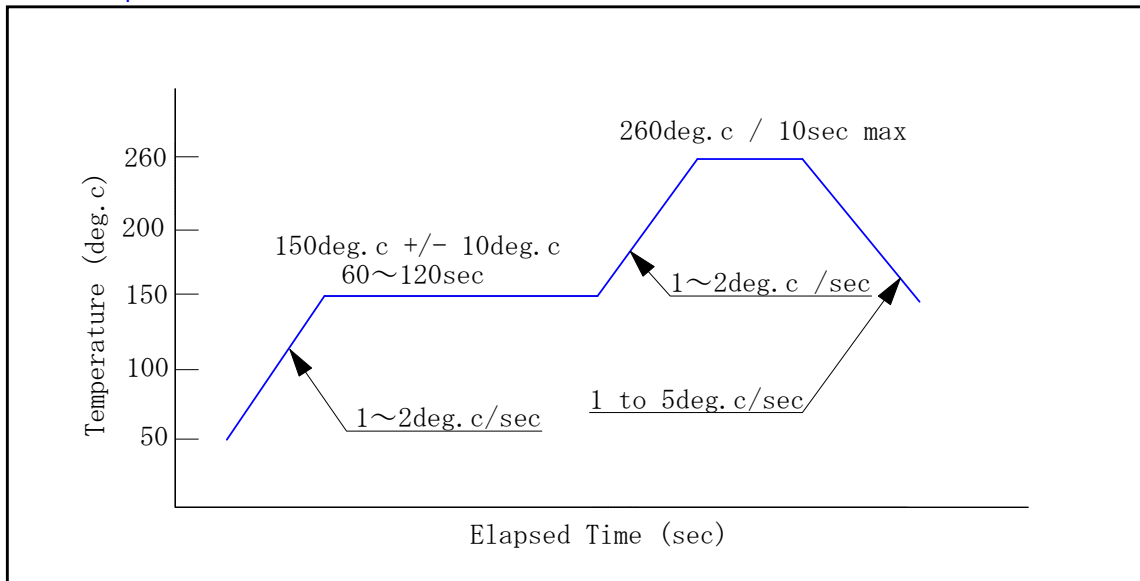
● Output Wave Form Diagram (Single output)



● Test circuits

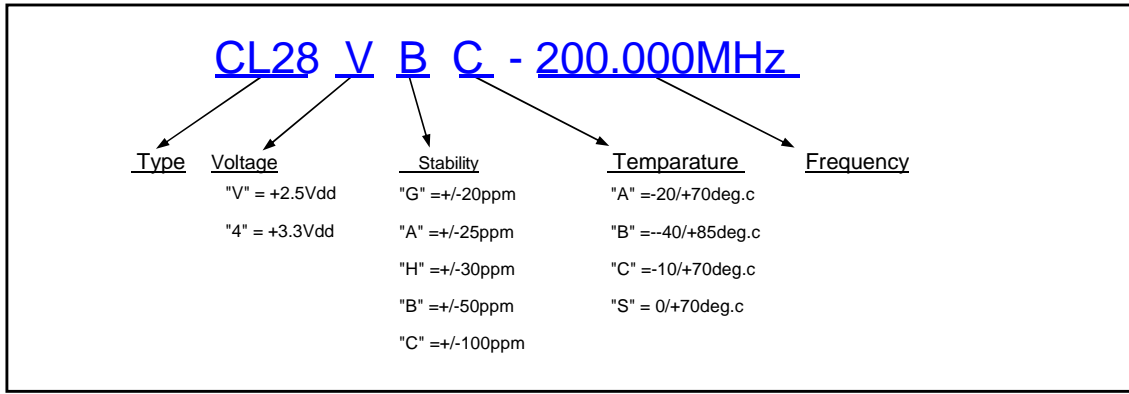


● Reflow profile

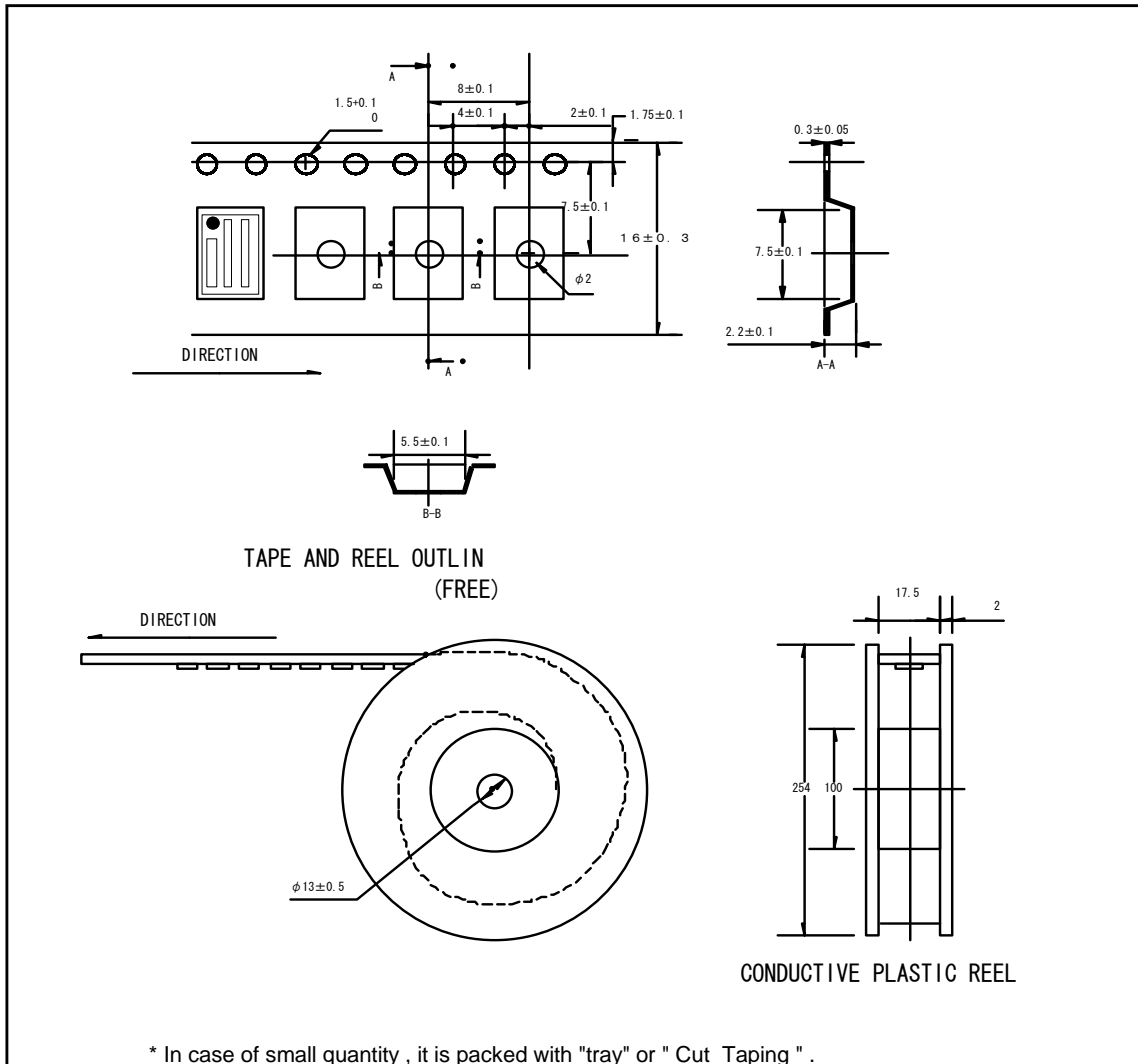


- \* The reflow process can be allowed until 2 times.
- \* In case of manual soldering ; using soldering iron at +360deg.c +/-20deg.c , within 3sec ( per each 1pad )
- \* This product includes CMOS device, then please handle it with protected process against ESD.

● How to define Model Number



● Taping & Reel dimension



2014.05.15 Rev.C

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