

Temperature Compensated Crystal Oscillator (VC-TCXO)

TG – 5001 LA

Preliminary

- Developed for cellular phone.
- Reflowable and high density mounting type ultra small size SMD (3.2×2.5×1.2 mm).
- Using the heat-resisting type AT cut quartz crystal
allows almost the same temperature soldering as universal SMD IC.
- Operating supply voltage : 2.8 V.



■ Specifications

1. Absolute Maximum Ratings

Item	Symbol	Condition	Min.	Max.	Unit
Maximum supply voltage	V_{CC-GND}		-0.3	4.5	V
Maximum input voltage	V_{IN}	Vc Terminal	-0.3	$V_{CC}+0.3$	V
Storage temperature	TSTG		-40	+85	°C

2. Operating Conditions

Item	Symbol	Condition	Min.	Max.	Unit
Supply voltage	V_{CC}		2.66	2.94	V
Control voltage	V_C		GND	V_{CC}	V
Operating temperature	T_{OPR}		-30	+80	°C

3. Frequency Characteristics

Item	Symbol	Condition	Spec.	Unit
Output frequency range	f_o		12.600/13.000/ 14.400/16.800	MHz
Frequency tolerance	Δf_o	$V_C = 1.4 \text{ V}, +25 \text{ °C} \pm 2 \text{ °C}$	$\pm 2.5 \times 10^{-6}$ Max.	-
Frequency stability vs. temperature	Δf_T	-20 °C to +75 °C (Based on frequency at +25 °C)	$\pm 2.5 \times 10^{-6}$ Max.	-
Frequency stability vs. load	Δf_L	10 k Ω //10 pF $\pm 10 \%$	$\pm 0.2 \times 10^{-6}$ Max.	-
Frequency stability vs. supply voltage	Δf_V	2.8 V $\pm 5 \%$	$\pm 0.3 \times 10^{-6}$ Max.	-
Aging	f_a	Ta=+25 °C, first year	$\pm 1.0 \times 10^{-6}$ Max.	-

4. Frequency Adjustment Characteristics

Item	Symbol	Condition	Min.	Max.	Unit
Input resistance	Z_{IN}	VC-GND (DC), $V_C = 1.4 \text{ V}$	800		k Ω
Frequency control range	Δf_C	$V_C = 1.4 \text{ V} \pm 1.0 \text{ V}$	$\pm 6.0 \times 10^{-6}$	$\pm 12.0 \times 10^{-6}$	-
Frequency change polarity	-		Positive polarity		

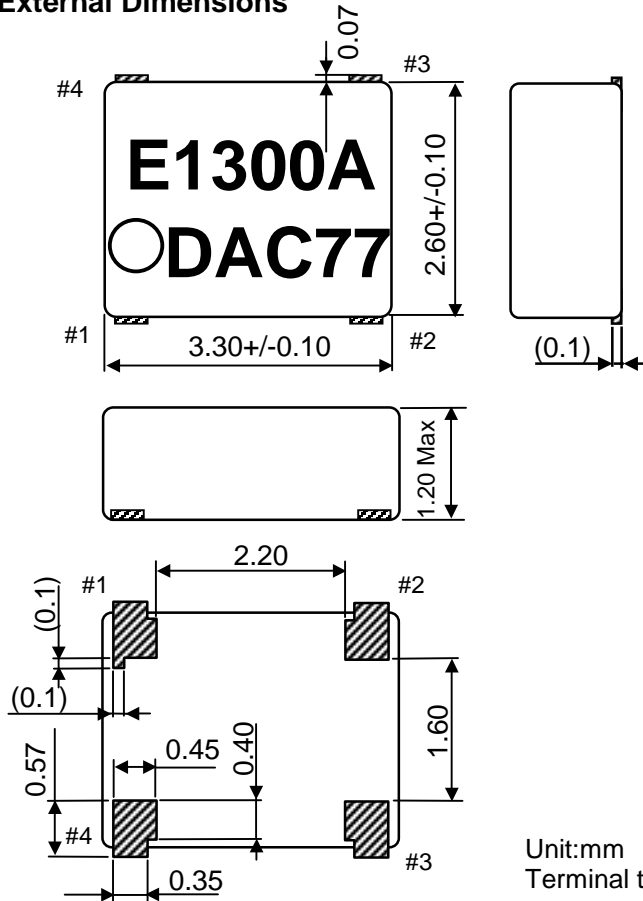
5. Electrical Characteristics

Item	Symbol	Condition	Min.	Max.	Unit
Current consumption	I_{CC}	$V_{CC} = 2.8 \text{ V}, 10 \text{ k}\Omega // 10 \text{ pF}$		1.8	mA

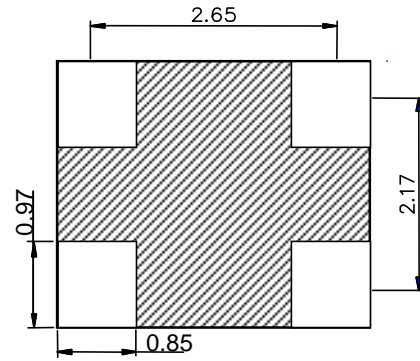
6. Output Characteristics

Item	Symbol	Condition	Min.	Max.	Unit
Output load	R_L	$C_L // R_L$	9	11	k Ω
	C_L	(DC cut capacitor = 0.01 μF)	9	11	pF
Output level	V_{OUT}	Peak to peak	0.8		V
Duty	Duty	GND level (DC cut)	40	60	%
Harmonics	-			-5	dBc

External Dimensions



Recommended soldering pattern



Do not design any patterns except GND on the shaded area.

Except for this recommended soldering pattern, please contact us for inquiries.

No.	Terminal
#1	V _c
#2	GND
#3	OUT
#4	V _{cc}

Unit:mm

Terminal treatment : Solder-Plating(Pb-Free)

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