

阅读申明

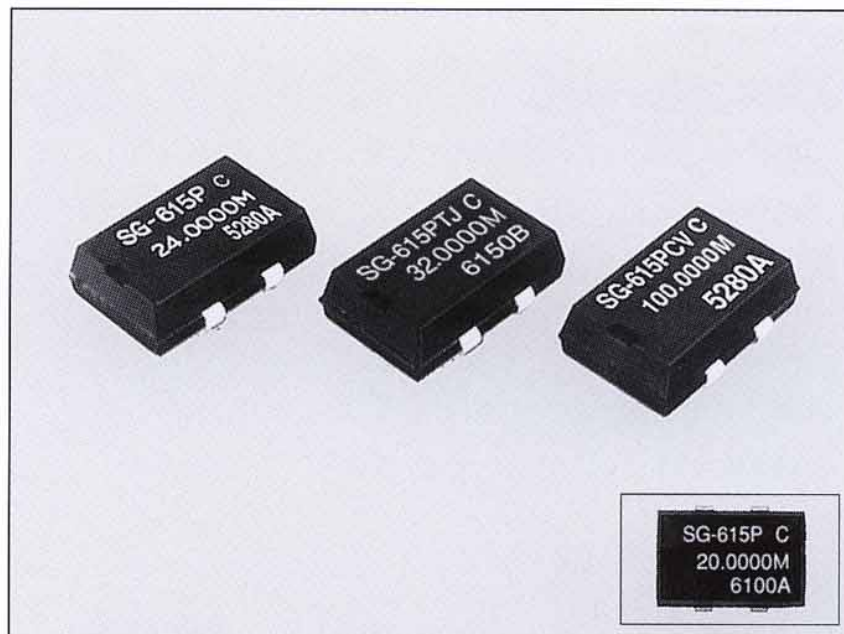
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SMD TYPE HIGH FREQUENCY CRYSTAL OSCILLATOR

SG-615 series



Actual size

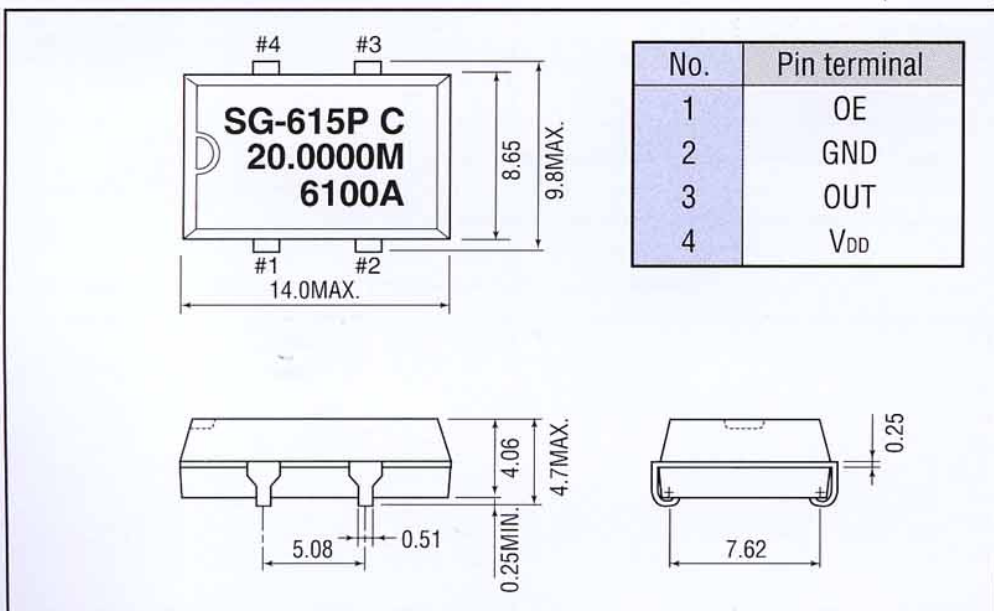
Specifications (Characteristics)

Item	Symbol	SG-615P	SG-615PTJ	SG-615PH	Remarks
		Specifications			
Output frequency range	f_0	1.0250MHz to 26.0000MHz	26.0001MHz to 66.6667MHz		
Power source voltage	MAX. supply voltage	V_{DD-GND}			
	Operating voltage	V_{DD}			
Temperature range	Storage temperature	T_{STG}			Stored as bare product after unpacking
	Operating temperature	T_{OPR}			
Soldering condition	T_{SOL}	Twice at under 260°C within 10sec. or under 230°C within 3min.			
Frequency stability	$\Delta f/f_0$	B : ± 50 ppm C : ± 100 ppm			B type is possible up to 55MHz
Current consumption	I_{OP}	23mA MAX.	35mA MAX.		No load condition
Duty	C-MOS level	40% to 60%	—	40% to 60%	C-MOS load : $1/2V_{DD}$ TTL load : 1.4V
	TTL level	45% to 55%		—	
Output voltage	V_{OH}	$V_{DD} - 0.4V$ MIN.	2.4V MIN.	$V_{DD} - 0.4V$ MIN.	
	(I_{OH})	-400 μ A		-4mA	
	V_{OL}	0.4V MAX.			
	(I_{OL})	16mA	8mA	4mA	
Output load condition (fan out)	C-MOS	CL	50pF MAX.	50pF MAX.	
	TTL	N	10TTL MAX.	5TTL MAX.	
Output enable/disable input voltage	V_{IH}	2.0V MIN.	3.5V MIN.	2.0V MIN.	$I_{IH} = 1\mu A$ MAX.(OE= V_{DD}) $I_{IL} = -100\mu A$ MIN.(OE=GND) $I_{IL} = -500\mu A$ MIN.(OE=GND) PTJ
	V_{IL}	0.8V MAX.	1.5V MAX.	0.8V MAX.	
Output disable current	I_{OE}	12mA MAX.	28mA MAX.	20mA MAX.	OE=GND
Output rise time	C-MOS level	8nsec. MAX.	—	7nsec. MAX.	C-MOS load : 20% \rightarrow 80% V_{DD} TTL load : 0.4V \rightarrow 2.4V
	TTL level		5nsec. MAX.	—	
Output fall time	C-MOS level	5nsec. MAX.	—	7nsec. MAX.	C-MOS load : 80% \rightarrow 20% V_{DD} TTL load : 2.4V \rightarrow 0.4V
	TTL level		5nsec. MAX.	—	
Oscillation start up time	t_{OSC}	4msec. MAX.	10msec. MAX.		Time at 4.5V to be 0sec.
Aging	f_a	± 5 ppm/year MAX.			$T_a = 25^\circ C$, $V_{DD} = 5V$, first year
Shock resistance	S.R.	± 20 ppm MAX.			Drop test of 3 times on a hard board from 75cm height or excitation test with 3000G \times 0.3ms \times 1/2sine wave in 3 directions

Note: • Unless otherwise stated, characteristics (specifications) shown in the above table are based on the rated operating temperature and voltage condition.
• External by-pass capacitor is recommended.

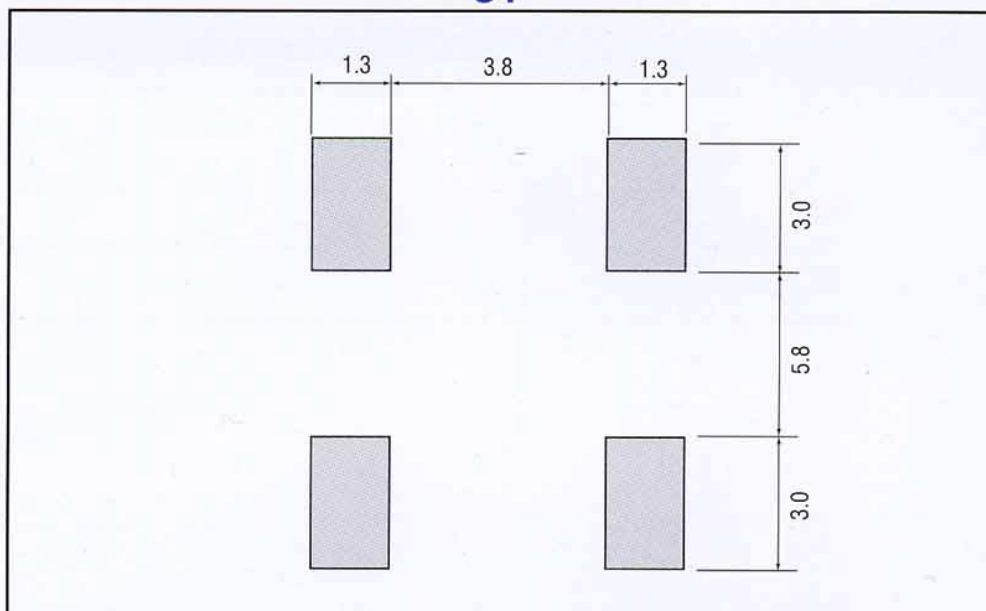
External Dimensions

(Unit : mm)



Recommended soldering pattern

(Unit : mm)



■ Features

- High density mounting type SMD.
- Designed for universal purpose with heat-resisting cylindrical type AT cut quartz crystal and allowing almost the same soldering temperature as SMD IC.
- Cylindrical type AT quartz crystal built-in, thus assuring high reliability.
- Provided with output enable function.
- Low current consumption.

■ Specifications (Characteristics)

Item	Symbol	SG-615 PCV		Remarks
		Specifications		
Output frequency range	f ₀	40.0000MHz to 80.0000MHz		V _{DD} =2.7V to 5.5V
		40.0000MHz to 125.0000MHz		V _{DD} =4.5V to 5.5V
Power source voltage	MAX. supply voltage	V _{DD} -GND	-0.5V to +7.0V	
	Operating voltage	V _{DD}	2.7V to 5.5V	
Temperature range	Storage temperature	T _{STG}	-55°C to +125°C	Stored as bare product after unpacking
	Operating temperature	T _{OPR}	-10°C to +70°C	
Soldering condition	T _{SOL}	Twice at under 260°C within 10sec. or under 230°C within 3min.		
Frequency stability	Δf/f ₀	C : ±100ppm		-10°C to +70°C, V _{DD} :2.7V to 5.5V
Current consumption	I _{OP}	50mA MAX.		No load condition
Duty	T _W /T	35% to 60%		1/2 V _{DD}
Output voltage	V _{OH}	V _{DD} -0.5V		
	(I _{OH})	-16mA		
	V _{OL}	0.4V MAX.		
	(I _{OL})	16mA		
Output load condition (fan out)	CL	25pF MAX.		V _{DD} =4.5V to 5.5V
		15pF MAX.		V _{DD} =2.7V to 4.5V
Output enable/disable input voltage	V _{IH}	0.7V _{DD} MIN.		
	V _{IL}	0.2V _{DD} MAX.		
Output disable current	I _{OE}	27mA MAX.		OE=GND
Output rise time	T _{TLH}	4nsec.		20% → 80% V _{DD}
Output fall time	T _{THL}			80% → 20% V _{DD}
Oscillation start up time	t _{OSC}	10msec. MAX.		Time at 2.7V to be 0sec.
Aging	fa	±5ppm/year MAX.		T _a =25°C, first year
Shock resistance	S.R.	±20ppm MAX.		Drop test of 3 times on a hard board from 75cm height or excitation test with 3000G × 0.3ms × 1/2sine wave in 3 directions

Note: • Unless otherwise stated, characteristics (specifications) shown in the above table are based on the rated operating temperature and voltage condition.
 • External by-pass capacitor is recommended.

■ Frequency table

Model	Frequency	1MHz	26MHz	40MHz	67MHz	125MHz
SG-615P		—————				
SG-615PTJ			—————			
SG-615PH			—————			
SG-615PCV				—————		