

Voltage Controlled Crystal Oscillators

True Sine Wave

GS

50Ω load

True Sine Wave

Thru-Hole

3.3 V

5.0 V

Min.

10 MHz

Max.

250 MHz

Features

- High purity and low total harmonic distortion. Ideal for audio applications
- For Sine Wave clock Oscillators, please refer to "HS" and "HSR" series.

General specifications of all available packages , at Ta=+25°C

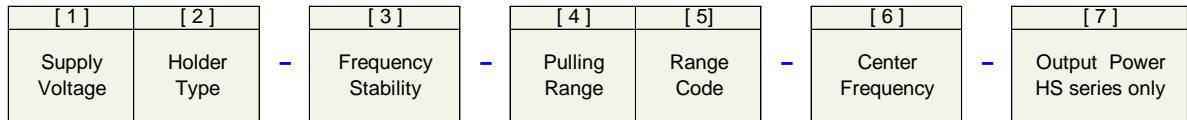


Model	" GS " series						
	Thru-Hole GS14 (20.2 * 12.8 * 6.0)			Gull - Wing GS24 (20.2 * 12.8 * 7.3)			
Package Dimensions , unit : mm	Thru-Hole GS14 (20.2 * 12.8 * 6.0)			Gull - Wing GS24 (20.2 * 12.8 * 7.3)			
Output Waveform	True Sine Wave						
Output Load	50Ω. (Internally AC coupled)						
Supply Voltage (V _{DD})	+3.3V ± 10%			+5.0V ± 10%			
Frequency Range	10.0 ~ 200 MHz			10.0 ~ 156.250 MHz			
Initial Freq. Accuracy (at 25 °C)	V _C = 1.65V ± 0.2V			V _C = 2.5V ± 0.2V			
Control Voltage Center	1.65 V _{DC}			2.5 V _{DC}			
Control Voltage Range	0.3 V to 3.0 V			0.5 V to 4.5 V			
Output Level	Standard: + 3.0 dBm min. Tolerance: ± 1 dB Max. Power: + 7 dBm User to specify			Standard: + 5.0 dBm min. Tolerance: ± 1 dB Max. Power: + 13 dBm User to specify			
Current Consumption	10 MHz : 9 mA (typ.)			10 MHz : 18 mA (typ.)			
	100 MHz : 18 mA (typ.)			100 MHz : 34 mA (typ.)			
	150 MHz : 19 mA (typ.)			150 MHz : 36 mA (typ.)			
Harmonics	< - 30dBc (frequency dependent)			< - 25dBc (frequency dependent)			
Start-up Time	6.0 msec. (typ.)			2.0 msec. (typ.)			
Storage Temperature	- 50°C to 125°C			- 55°C to 125°C			
Frequency Stability Codes	Frequency Stability over Operating Temperature Range	± 25 ppm	± 50 ppm	± 100 ppm	If non-standard , please enter the desired stability after the " C " or " I " represents . For example : " C20 " ± 20 ppm over -10°C to +70°C ; " I20 " ± 20 ppm over -40°C to +85°C		
	Commercial (-10°C to +70°C)	A	B	C			
	Industrial (-40°C to +85°C)	D	E	F			
Frequency Deviation Range	± 80 ppm (min.)						
Input Impedance	> 10 K Ω						
Modulation Bandwidth (at -3 dB)	10 KHz (min.)						
Aging at Ta=+25°C	± 5 ppm per year (max.)						
Sub-Harmonics	None						
Voltage Control Range	0.0 V to V _{DD} with control voltage center at 50% of V _{DD}						
Linearity	±10 % (max.)						
Slope Polarity	Positive. Increasing control voltage increases output frequency						
Phase Noise [dBc / Hz (typ.)]	Offset	10 Hz	100 Hz	1 KHz	10 KHz	100 KHz	
	125 MHz	-75	-110	-125	-132	-128	

Mercury www.mercury-crystal.com ■Taiwan : Tel: (+886)-2-2406-2779 / sales-tw@mercury-crystal.com

■USA : Tel: (+1)-909-466-0427 / sales-us@mercury-crystal.com ■China : Tel: (+86)-512-5763-8100 / sales-cn@mercury-crystal.com

Part Number Format and Example

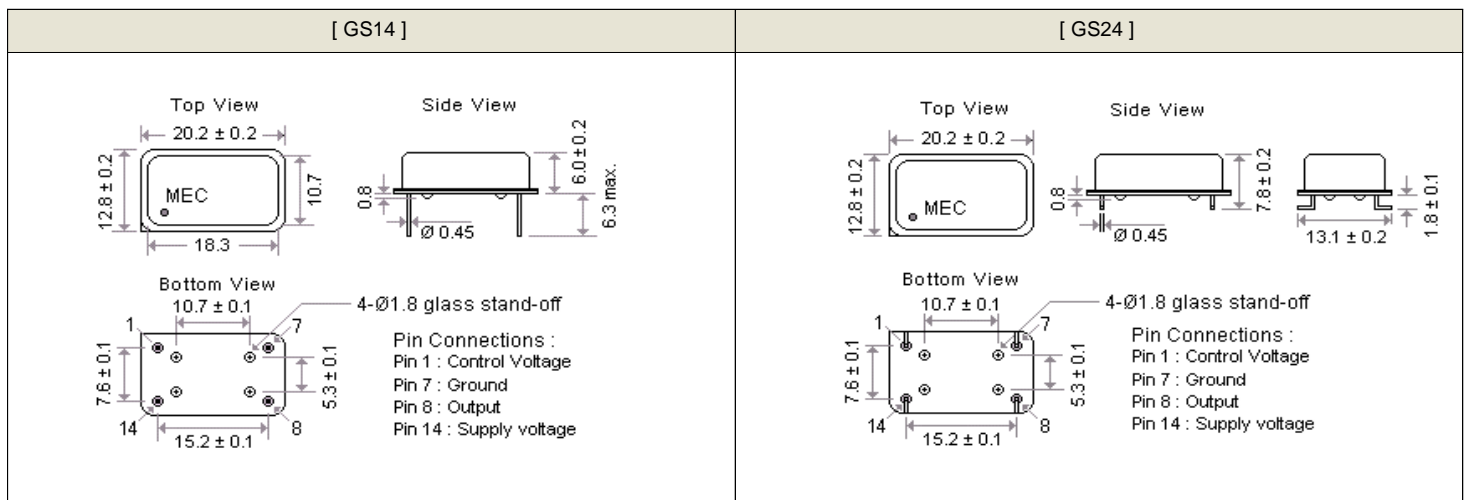


Example (1) 3 GS14 - A - 80 N - 100.000 - 5

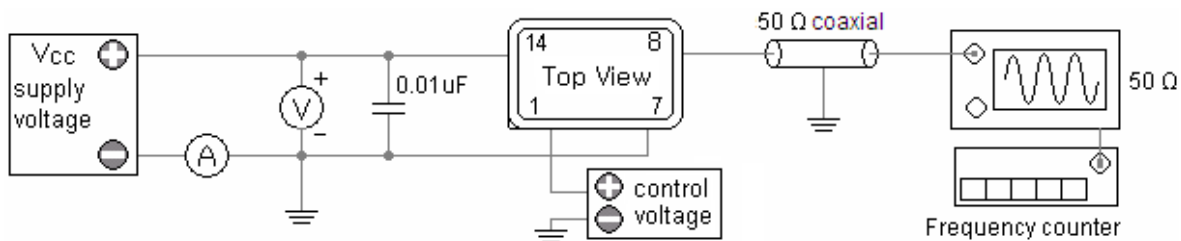
Ex (1) : 3GS14 - A - 80N - 100.000 - 5 [+3.3V, G_14 type, 50 Ω load , ±25ppm (-10°C to 70°C) , pulling : ±80 ppm (min) , 100.000MHz , power : 5dBm ±1dB]

[1]	Supply voltage , " 3 " for +3.3V ; " 5 " for +5.0V	
[2]	Holder Type	
[3]	-10°C ~ 70 °C	" A " ± 25ppm ; " B " ± 50ppm ; " C " ± 100ppm ; If non-standard please enter the desired stability after " C " , for example " C15 " : represents ±15ppm over -10 to +70°C
	-40°C ~ 85 °C	" D " ± 25ppm ; " E " ± 50ppm ; " F " ± 100ppm ; If non-standard please enter the desired stability after " I " , for example " I20 " : represents ±20ppm over -40 to +85°C
[4]	Frequency Pulling Range	3.3V From ±30ppm ~ ±150ppm , control Voltage range : 0.3V ~ 3.0 ; control voltage center : ± 1.65 V
		5.0V From ±70ppm ~ ±200ppm , control Voltage range : 0.5V ~ 4.5V ; control voltage center : ± 2.5 V
[5]	Pulling Range Code	" M " stands for maximum ; " N " stands for minimum ; " T " stands for typical (tolerance is ± 20%)
[6]	Center Frequency in MHz	
[7]	Output power in dBm (HS series only)	

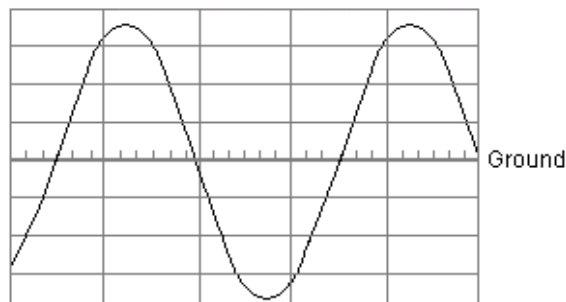
Outline Dimensions (Unit : mm) , Suggested pad Layout for SMDs



" GS " series : 50 Ω Load Test Circuit :



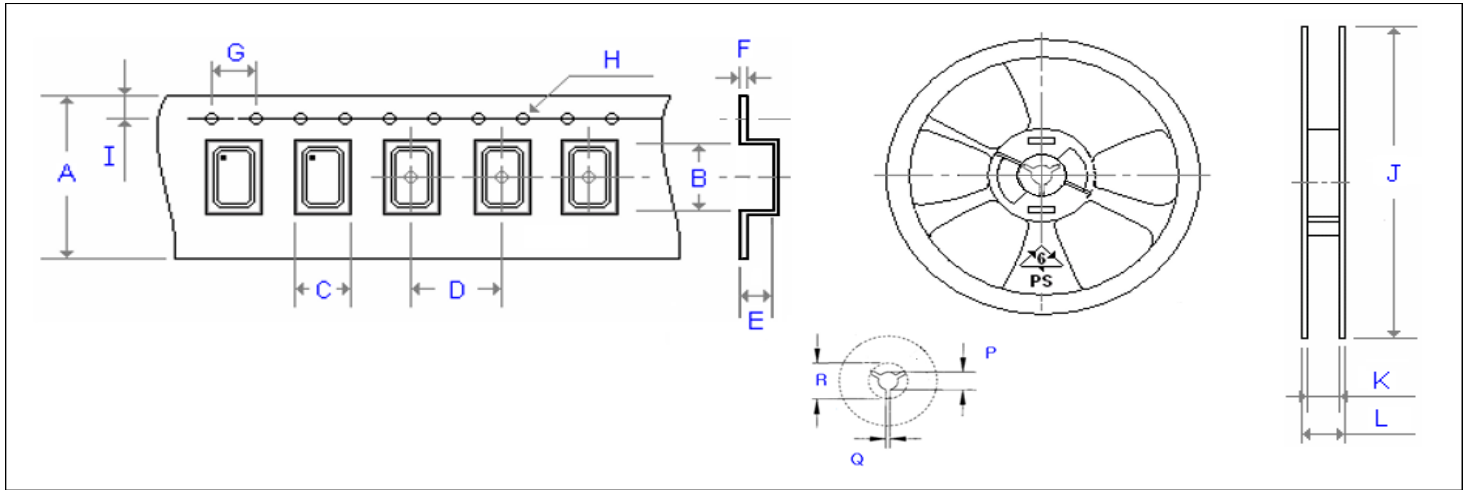
Output Waveform



Emboss Taping and Reel Specifications

[VCXO]

[(VC)TCXO]



Carrier Type Dimensions (unit : mm) ±0.3mm

	A	B	C	D	E	F	G	H	I	pcs / reel
G_226	8.00	2.80	2.25	4.00	1.10	0.30	4.00	∅ 1.50	1.75	3000
G_326	8.00	3.40	2.70	4.00	1.40	0.25	4.00	∅ 1.50	1.75	3000
G_534	12.00	5.30	3.60	8.00	1.40	0.30	4.00	∅ 1.50	1.75	1000
G_576	16.00	7.30	5.30	8.00	1.90	0.32	4.00	∅ 1.50	1.75	1000
G_43	24.00	11.80	10.00	16.00	5.00	0.30	4.00	∅ 1.50	1.75	500
G_63	24.00	11.80	10.00	16.00	5.00	0.30	4.00	∅ 1.50	1.75	500
G_JF538	12.00	5.30	3.60	8.00	1.40	0.30	4.00	∅ 1.50	1.75	1000
G_JF578	16.00	7.30	5.30	8.00	1.90	0.32	4.00	∅ 1.50	1.75	1000
(V)M21	8.00	2.30	1.90	4.00	0.90	0.25	4.00	∅ 1.50	1.75	3000
(V)ME21	8.00	2.30	1.50	4.00	1.35	0.25	4.00	∅ 1.50	1.75	3000
(V)M22	8.00	2.80	2.25	4.00	1.10	0.30	4.00	∅ 1.50	1.75	3000
(V)M_32	8.00	3.71	2.80	4.00	1.75	0.25	4.00	∅ 1.50	1.75	3000
(V)MQ_326	12.00	3.60	2.90	4.00	1.70	0.30	4.00	∅ 1.50	1.75	3000
(V)M_53	12.00	5.30	3.60	8.00	1.40	0.30	4.00	∅ 1.50	1.75	1000
(V)M_57(2)	16.00	7.40	5.50	8.00	2.80	0.35	4.00	∅ 1.50	1.75	500
(V)M_43 (63)	24.00	11.80	10.00	16.00	5.00	0.30	4.00	∅ 1.50	1.75	500

Reel Dimensions (unit : mm) ±2mm

	J	K	L	P	Q	R	pcs / reel
G_226	180.00	8.40	11.40	13.00	2.50	20.20	3000
G_326	180.00	9.00	12.00	13.00	2.50	20.20	3000
G_534	180.00	13.00	16.00	13.00	2.50	20.20	1000
G_576	180.00	17.20	19.30	13.00	2.50	20.20	1000
G_43	330.00	24.50	29.10	13.00	2.50	20.20	500
G_63	330.00	24.50	29.10	13.00	2.50	20.20	500
G_JF538	180.00	13.00	16.00	13.00	2.50	20.20	1000
G_JF578	180.00	17.20	19.30	13.00	2.50	20.20	1000
(V)M21	180.00	8.40	11.40	13.00	2.50	20.20	3000
(V)ME21	180.00	9.00	12.00	13.00	2.50	20.20	3000
(V)M22	180.00	8.40	11.40	13.00	2.50	20.20	3000
(V)M_32	180.00	9.00	11.40	13.00	2.50	20.20	3000
(V)MQ_326	180.00	13.00	16.00	13.00	2.50	20.20	3000
(V)M_53	180.00	13.00	16.00	13.00	2.50	20.20	1000
(V)M_57(2)	180.00	17.20	19.30	13.00	2.50	20.20	500
(V)M_43 (63)	330.00	24.50	29.10	13.00	2.50	20.20	500

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