

Product name SG3225VEN 156.25000MHz DDGA

Product Number / Ordering code X1G0053510003xx

Please refer to the 8.Packing information about xx (last 2 digits)

Output waveform LVDS

Pb free / Complies with EU RoHS directive

Reference weight Typ. 26 mg

1.Absolute maximum ratings

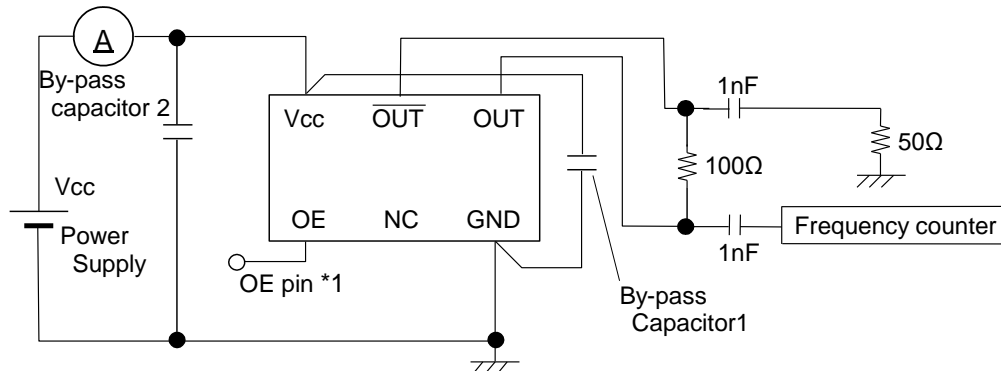
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions / Remarks
Maximum supply voltage	Vcc-GND	-0.5	-	+4	V	-
Storage temperature	T_stg	-55	-	+125	°C	Storage as single product
Input voltage	Vin	-0.5	-	Vcc+0.5	V	ST or OE Terminal

2.Specifications(characteristics)

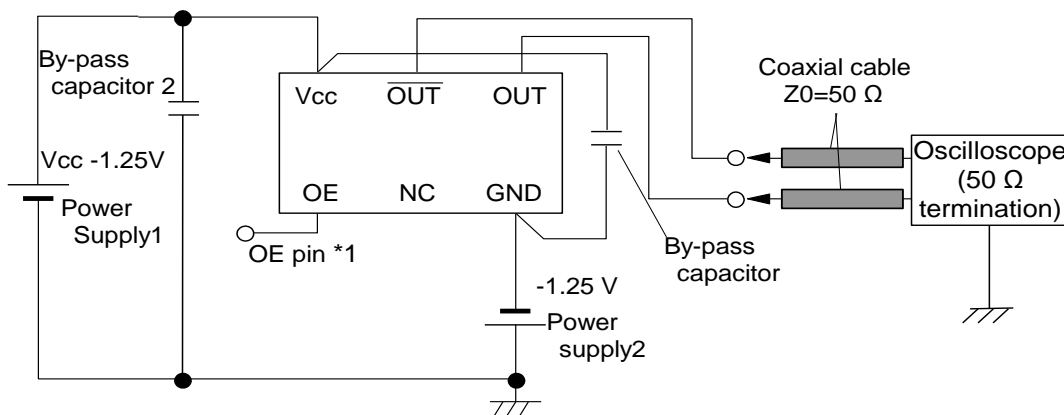
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions / Remarks
Output frequency	f0	-	156.2500	-	MHz	
Supply voltage	Vcc	2.375	2.5	2.625	V	-
Operating temperature	T_use	-40	-	+85	°C	-
Frequency tolerance	f_tol	-25	-	+25	x10 ⁻⁶	-
Current consumption	Icc	-	-	25	mA	OE=Vcc L_LVDS=100 ohm
Stand-by current	I_std	-	-	-	mA	-
Disable current	I_dis	-	-	15	mA	OE=GND
Symmetry	SYM	45	50	55	%	At output crossing point
Output voltage(LVDS)	VOD	250	350	450	mV	VOD1 , VOD2
	dVOD	-	-	50	mV	VOD1 - VOD2
	Vos	1.15	1.25	1.35	V	VOS1 , VOS2
	dVos	-	-	50	mV	VOS1 - VOS2
Output load condition(LVDS)	L_LVDS	-	100	-	Ω	-
Input voltage	V _{IH}	70% Vcc	-	-		OE Terminal
	V _{IL}	-	-	30% Vcc		OE Terminal
Rise time	t _r	-	-	0.3	ps	At 20% to 80% output swing
Fall time	t _f	-	-	0.3	ps	At 20% to 80% output swing
Start-up time	t _{str}	-	-	10	ms	-
Phase jitter	t _{pj}	-	58.5	90	fs	Off set Frequency: 12kHz to 20MHz
Phase noise	L(f)	-	-51.5	-	dBc/Hz	Off set 1Hz
		-	-83	-	dBc/Hz	Off set 10Hz
		-	-111.2	-	dBc/Hz	Off set 100Hz
		-	-135.6	-	dBc/Hz	Off set 1kHz
		-	-149	-	dBc/Hz	Off set 10kHz
		-	-154.8	-	dBc/Hz	Off set 100kHz
		-	-160	-	dBc/Hz	Off set 1MHz
Frequency aging	f_age	-	-	-	x10 ⁻⁶ /Year	Included in Frequency tolerance 5 years
		-	-	-		-

3. Test circuit

1) To observe frequency and current



2) To observe output wave



*Each output line is same length

3) Measurement condition

A) Oscilloscope

- Bandwidth should be 5 times higher than DUT's output frequency (2.5 GHz).
- Probe ground should be placed closely from test point and lead length should be as short as possible.

B) By-pass capacitor 1 (approx. 0.1 μ F) places closely between Vcc and GND.

C) By-pass capacitor 2 (approx. 10 μ F) places closely between power supply terminals on the board.

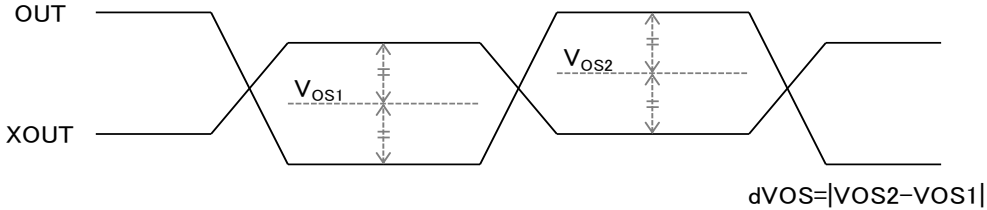
D) Use the current meter whose internal impedance value is small.

E) Power supply

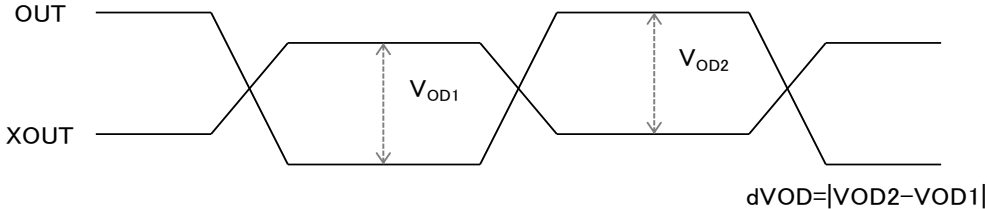
- Start up time (0 Vg90 %Vcc) of power source should be more than 150 μ s
- Impedance of power supply should be as low as possible.

4. Timing chart

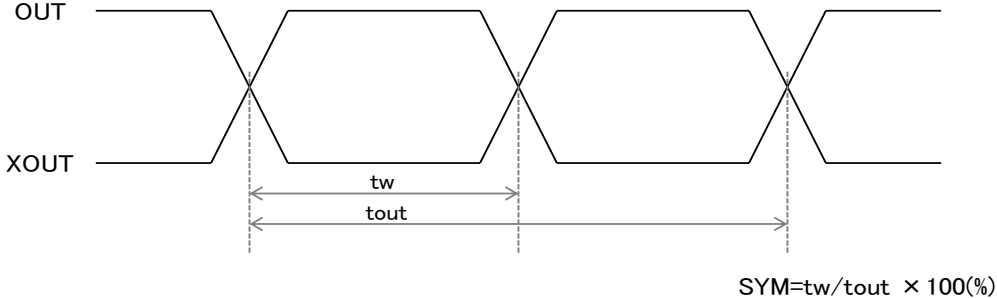
Output offset voltage



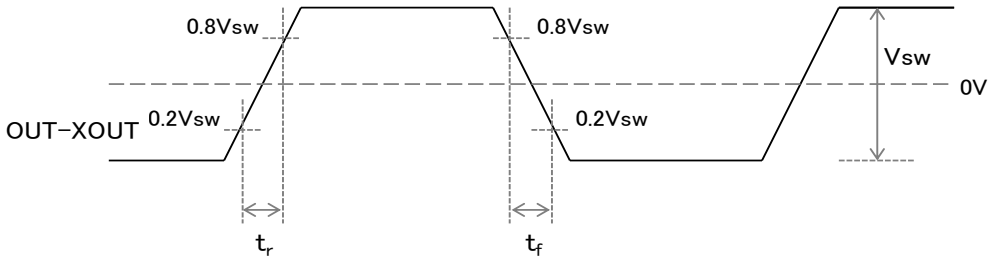
Differential output voltage



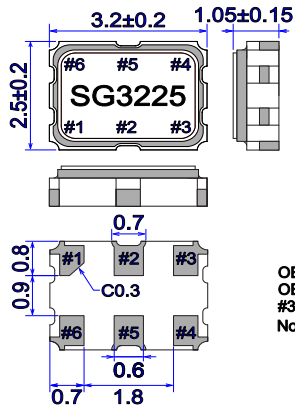
Duty



Rise time / Fall time



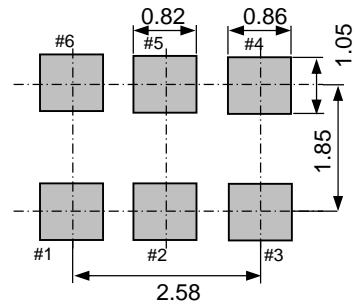
5.External dimensions (Unit: mm)



Pin	Connection
#1	OE
#2	N.C.(Open or Vcc)
#3	GND
#4	OUT(Positive)
#5	OUT(Negative)
#6	Vcc

OE ph = HIGH : Specified frequency output
 OE ph = LOW : Output is high impedance
 #3 is connected to the cover.
 Not to scale.

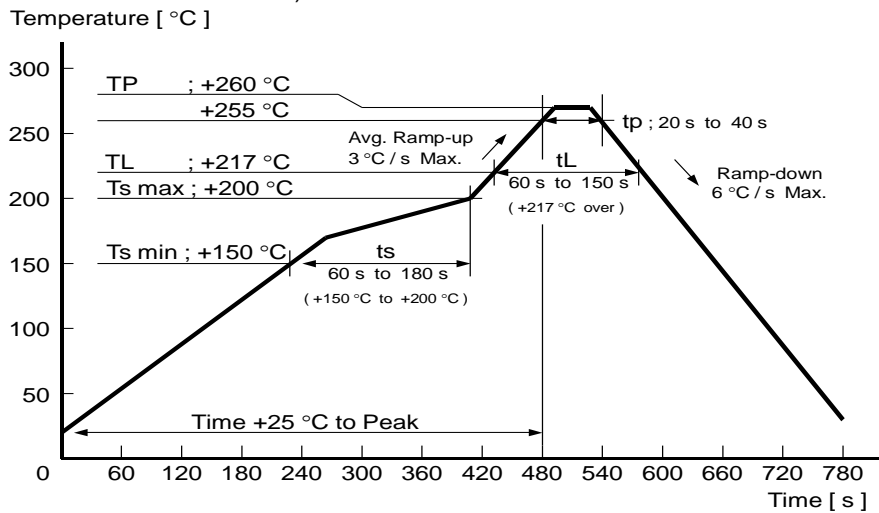
6.Footprint(Recommended) (Unit: mm)



In order to achieve optimum jitter performance, the 0.1 μ F an7d 10 μ F capacitor is required. These capacitors should be placed as close to Vcc (#6 pin) as possible. It is also recommended that the capacitors are placed on the device side of the PCB.

7.Reflow profile

Reflow condition (Follow of JEDEC STD-020D.01)



9.Packing information

[1] Product number last 2 digits code(xx) description The recommended code is "00"

X1G0053510003xx

Code	Condition	Code	Condition
01	Any Q'ty vinyl bag(Tape cut)	13	500pcs / Reel
11	Any Q'ty / Reel	14	1000pcs / Reel
12	250pcs / Reel	00	2000pcs / Reel

[2] Taping specification

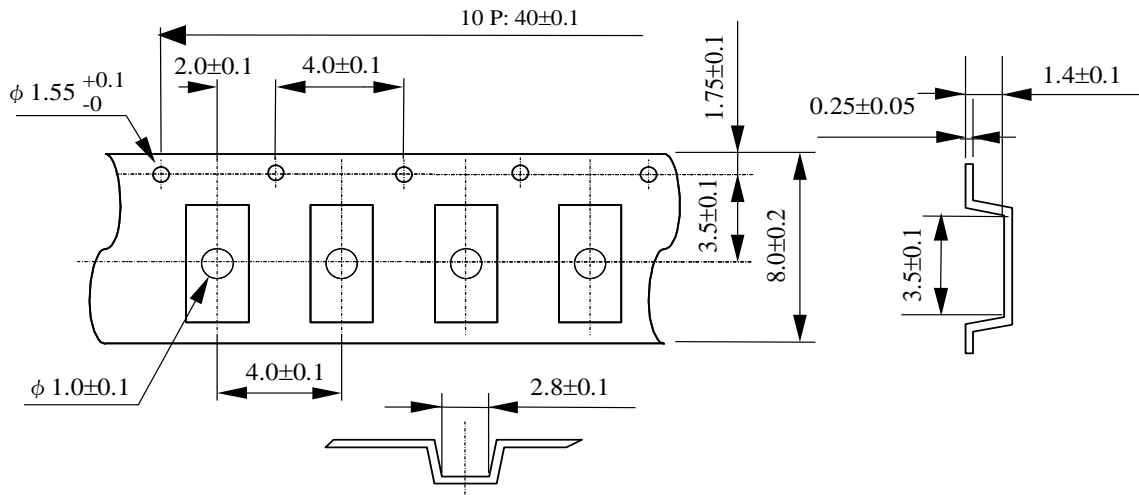
Subject to EIA-481 & IEC-60286

(1) Tape dimensions

Material of the Carrier Tape : PS

Material of the Top Tape : PET+PE

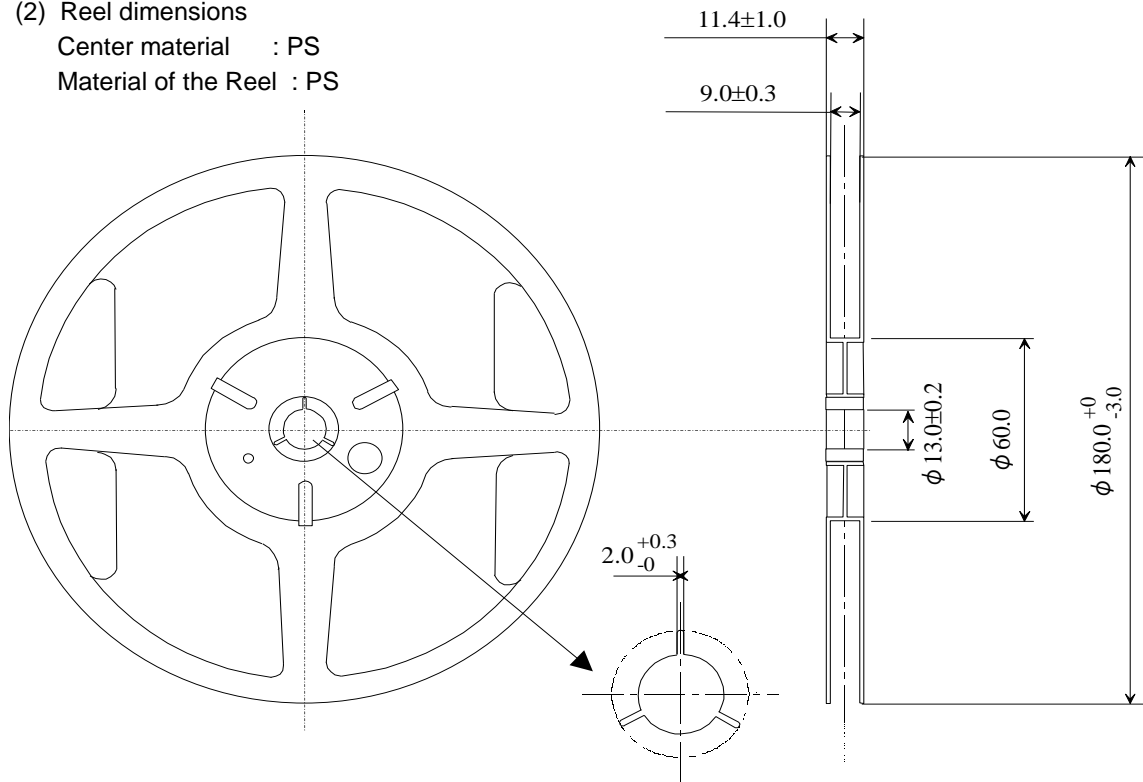
Unit: mm



(2) Reel dimensions

Center material : PS

Material of the Reel : PS



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