



## Features

### SG-51 series

- Pin compatible with full size metal can
- Packaged in plastic 14 pin DIP
- Auto insertable
- Provided with output enable and standby functions

### SG-531 series

- Pin compatible with half size metal can
- Provided with output enable function

## Common

- Cylindrical type AT cut quartz crystal built-in, thus assuring high reliability
- Possible with 386 CPU
- Use of C-MOS IC enables reduction of current consumption

Item	Symbol	SG-51PH/51YH,SG-531PH/531YH	
		Specifications	Remarks
Output frequency range	$f_o$	26.0001MHz to 66.6667MHz	
Power source voltage	Max.supply voltage	$V_{DD}-GND$	-0.3V to +7.0V
	Operating voltage	$V_{DD}$	5.0V $\pm$ 0.5V $\times$ 2
Temperature range	Storage temperature	$V_{STG}$	-55°C to +100°C
	Operating temperature	$T_{OPR}$	-10°C to +70°C
Soldering condition (lead part)	$T_{SOL}$	Under 260°C within 10sec	Package less than 150°C
Frequency stability	$\Delta f/f_o$	(B: $\pm$ 50ppm)C $\pm$ 100ppm	-10°C to +70°C. B type is possible up to 55MHz, please consult us.
Current consumption	I <sub>OP</sub>	35mA MAX.	No load condition Up to 45MHz : 21mA MAX.
Duty	T <sub>W</sub> /T	40% to 60%	1/2 $V_{DD}$ level
Output voltage	$V_{OH}$	$V_{DD} - 0.4V$ MIN.	I <sub>OH</sub> = -4mA
	$V_{OL}$	0.4V MAX.	I <sub>OL</sub> = 4mA
Output load condition (Fan out)	TTL	N	
	C-MOS	CL	50pF MAX.
Output enable/standby input voltage	$V_{IH}$	2.0V MIN.	
	$V_{IL}$	0.8V MAX.	
Output disable current	I <sub>OE</sub>	20mA MAX.	OE=GND. Up to 45MHz : 15mA MAX.
Standby current	I <sub>ST</sub>		
Output rise time	t <sub>FLH</sub>	7nsec.MAX. $\times$ 2	Over 45MHz : 5nS. MAX. Refer to output waveform chart (page 9)
Output fall time	t <sub>FHL</sub>	7nsec.MAX. $\times$ 2	
Oscillation start time	t <sub>OSC</sub>	10msec.MAX.	More than for 1mS until $V_{DD}=0V \rightarrow 4.5V$ Time at 4.5V to be 0sec.
Aging	fa	$\pm$ 5ppm/year MAX.	T <sub>a</sub> =25°C $V_{DD}=5V$ , first year
Shock resistance	S.R.	$\pm$ 200m MAX.	Drop test of 3 times on a hard board from 75cm height or excitation test with 3000G $\times$ 0.3mS $\times$ 1/2 sine wave in 3 directions in 3directions

\*1 It is possible depending on condition, reference data (page 22).

\*2 AC characteristics of 386 CPU.

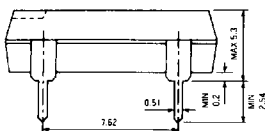
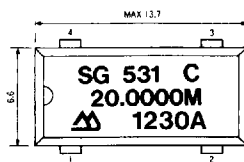
( $V_{DD}=5V \pm 0.25V$ , Load : CL $\leq$ 50pF, T<sub>a</sub>=-10 to +70°C, Refer to output waveform chart of 386 CPU)

Item	Symbol	26.001MHz to 36.000MHz		40.000MHz		45.000MHz to 50.000MHz		50.001MHz to 66.667MHz		Unit	Remarks
		Min.	Max.	Max.	Min.	Min.	Max.	Min.	Max.		
CLK high time	t <sub>2a</sub>	9		8		7		6.25		ns	2V level
CLK high time	t <sub>2b</sub>	5		5		4		4.5		ns	Under 45MHz : $V_{DD} - 0.8V$ level Over 45MHz : 3.7V level
CLK low time	t <sub>3a</sub>	9		8		7		6.25		ns	2V level
CLK low time	t <sub>3b</sub>	7		6		5		4.5		ns	2v level
CLK fall time	t <sub>4</sub>		8		8		7		4	ns	Under 45MHz : $V_{DD} - 0.8V$ to 0.8V Over 45MHz : 3.7V to 0.8V
CLK rise time	t <sub>5</sub>		9		9		7		4	ns	Under 45MHz : $V_{DD} - 0.8V$ to $V_{DD}$ , -0.8V Over 45MHz : 0.8V to 3.7V

## External Dimensions

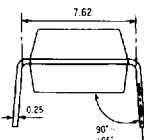
(Unit : mm)

### SG-531 series



No.	Pin terminal
1	NC (OE)
2	GND
3	OUT
4	$V_{DD}$

( ) shows P type



## Waveform Chart of 386 CPU

