

FULL-SIZE DIP HIGH-FREQUENCY CRYSTAL OSCILLATOR

SG-51 series

- Pin compatible with full-size metal can.

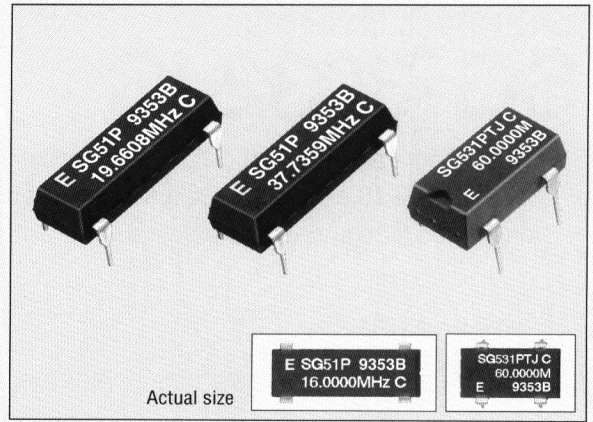
HALF-SIZE DIP HIGH-FREQUENCY CRYSTAL OSCILLATOR

SG-531 series

- Pin compatible with half-size metal can.

Common

- Cylindrical AT-cut crystal unit builtin, thus assuring high reliability.
- Use of C-MOS IC enables reduction of current consumption.



■ Specifications (characteristics)

Item	Symbol	SG-51P/531P	SG-51PTJ/531PTJ	SG-51PH/531PH	Remarks	
		Specifications				
Output frequency range	f_o	1.0250 MHz to 26.0000 MHz	26.0001 MHz to 66.6667 MHz			
Power source voltage	Max. supply voltage	V_{DD-GND}	-0.3V to +7.0V			
	Operating voltage	V_{DD}	5.0V±0.5V			
Temperature range	Storage temperature	T_{STG}	-55°C to +125°C			
	Operating temperature	T_{OPR}	-20°C to +70°C		Please contact us on availability of -40°C to +85°C	
Soldering condition (lead part)	T_{SOL}	Under 260°C within 10 sec.			Don't heat the package at more than 150°C	
Frequency stability	$\Delta f/f_o$	B: ± 50ppm C: ±100ppm			-10°C to +70°C B type is possible up to 55.0 MHz	
Current consumption	I_{OP}	23mA max.	35mA max.		No load condition	
Duty	C-MOS level	t_w/t_f	40% to 60%	—	40% to 60%	1/2 V_{DD} level
	TTL level		45% to 55%		—	1.4V level
Output voltage	V_{OH}	$V_{DD}-0.4V$ min.	2.4V min.	$V_{DD}-0.4V$ min.		
	(I_{OH})	-400µA		-4mA		
	V_{OL}	0.4V max.				
	(I_{OL})	16mA	8mA	4mA		
Output load condition (fan out)	C-MOS	C_L	50pF max.	—	50pF max.	
	TTL	N	10TTL max.	5TTL max.	—	$C_L \leq 15PF$
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})	
	V_{IL}	0.8V max.	1.5V max.	0.8V max.	$I_{IL} = -100\mu A$ min. (OE=GND), PTJ: -500µA	
Output disable current	I_{OE}	12mA max.	28mA max.	20mA max.	OE=GND	
Output rise time	C-MOS level	t_{TLH}	8ns max.	—	7ns max.	C-MOS load: 20%→80% V_{DD}
	TTL level		—	5ns max.	—	TTL load: 0.4V→2.4V
Output fall time	C-MOS level	t_{THL}	8ns max.	—	7ns max.	C-MOS load: 80%→20% V_{DD}
	TTL level		—	5ns max.	—	TTL load: 2.4V→0.4V
Oscillation start up time	t_{OSC}	4ms max.	10ms max.		More than for 1ms until $V_{DD}=0V \rightarrow 4.5V$ Time at 4.5V to be 0 sec.	
Aging	f_a	±5ppm/year max.			$T_a=25^\circ C$, $V_{DD}=5V$, first year	
Shock resistance	S.R.	±20ppm max.			Three drops on a hard board from 75 cm or excitation test with 3000G x 0.3ms x 1/2 sine 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)

