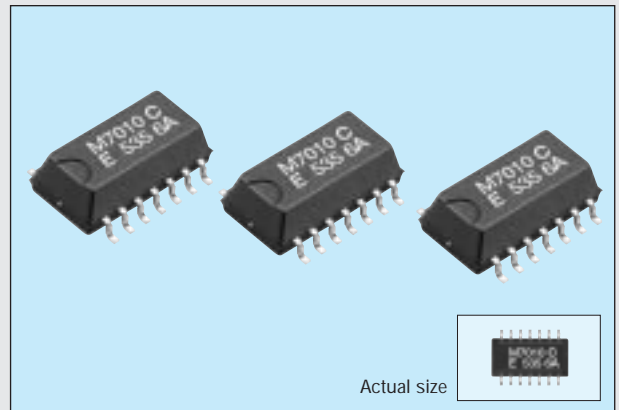


SELECTABLE-OUTPUT PLL OSCILLATOR

MG-7010SA

- Can output one CPU frequency among 15 selections.
- Reflow able, high-density mounting-type SMD.
- Provided with output enable and stand-by function to allow low current consumption.
- Using C-MOS IC allows low current consumption and assures high reliability.



Specifications (characteristics)

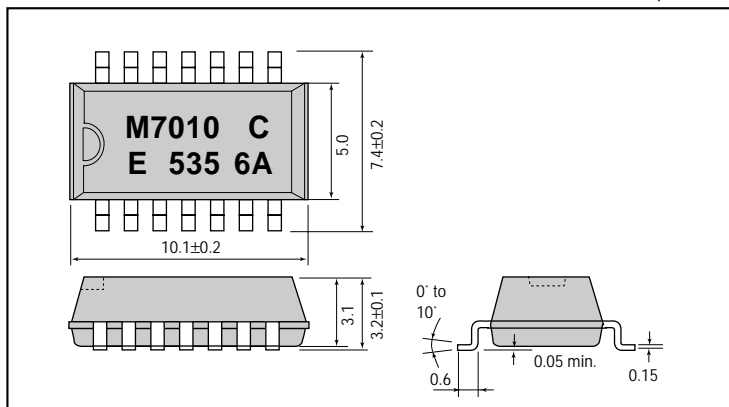
Item	Symbol	Specifications	Remark
Frequency change time	t_{ri}	10ms max.	S0, S1, S2, S3 changing
Output frequency range	f_o	20 MHz to 120 MHz	$V_{DD}=4.5V$ to 5.5V
		20 MHz to 80 MHz	$V_{DD}=2.7V$ to 5.5V
Power source voltage	Max. supply voltage	V_{DD-GND}	-0.5V to +7.0V
	Operating voltage	V_{DD}	2.7V to 5.5V
Temperature range	Storage temperature	T_{STG}	-55°C to +100°C
	Operating temperature	T_{OPR}	-10°C to +70°C
Soldering condition	T_{SOL}	Twice at under 260°C within 10 sec. or under 230°C within 3 min.	
Frequency stability	$\Delta f / f_o$	C: ± 100 ppm	-10°C to +70°C, $V_{DD}=2.7V$ to 5.5V
Current consumption	I_{OP}	45mA max.	No load condition ($f_o=120$ MHz)
Output disable current	I_{OE}	25mA max.	OE=GND, $f_o=120$ MHz
Standby current	I_{ST}	10 μ A max.	$\overline{ST}=GND$
Duty	t_w/t	40% to 60%	1.4V level
High output voltage	V_{OH}	$V_{DD}-0.5V$ min.	$I_{OH} = -16mA$ ($V_{DD}=5\pm 0.5V$)
Low output voltage	V_{OL}	0.4V max.	$I_{OL} = 16mA$ ($V_{DD}=5\pm 0.5V$)
Output load condition	C_L	25pF max.	$V_{DD}=4.5V$ to 5.5V ($f_o \leq 80$ MHz)
		15pF max.	$V_{DD}=2.7V$ to 4.5V or $f_o > 80$ MHz
High input voltage	V_{IH}	2.0V min.	\overline{ST}, OE terminal
Low input voltage	V_{IL}	0.8V max.	\overline{ST}, OE terminal
Output rise time	t_{TLH}	4.0ns max.	20% \rightarrow 80% V_{DD} level
Output fall time	t_{THL}	4.0ns max.	80% \rightarrow 20% V_{DD} level
Oscillation start up time	t_{OSC}	10ms max.	Time at 4.5V to be 0 sec.
Aging	f_a	± 5 ppm/year max.	$T_a=25^\circ C$, $V_{DD}=3.3V$ or 5.5V
Shock resistance	S.R.	± 20 ppm max.	Three drops on a hard board from 75 cm or excitation test with 3000g x 0.3ms 1/2 sine wave in 3 directions

Output frequency

Select bit	Output frequency (MHz)															
	100.0	33.33	30.0	120.0	25.0	20.0	70.0	80.0	75.0	66.66	60.0	60.0	50.0	45.0	90.0	40.0
S3	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
S2	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
S1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
S0	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1

External dimensions

(Unit: mm)



Terminal connection

Terminal No.	Terminal symbol	Function
1	S3	Frequency select bit 3
2	GND	Ground
4	S0	Frequency select bit 0
5	S1	Frequency select bit 1
6	OE	Output Enable control Clock out at "H" high-impedance at "L"
7	\overline{ST}	Stand by control "H" \rightarrow Clock out "L" \rightarrow "Level"
8	V_{DD}	Power supply
13	OUT	Clock output
14	S2	Frequency select bit 2
3, 9, 10 11, 12	N.C	No connection