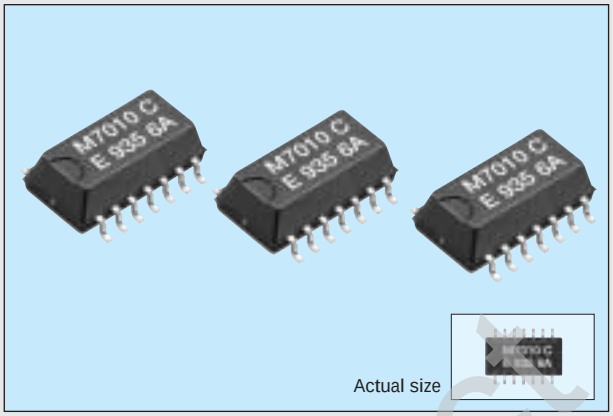
SELECTABLE-OUTPUT PLL OSCILLATOR

MG-7010SA



Product number (please refer to page 2)

Q33M11SAxxxxx00

- 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 CMOS IC allows low current consumption and assures high reliability.

Specifications (characteristics)

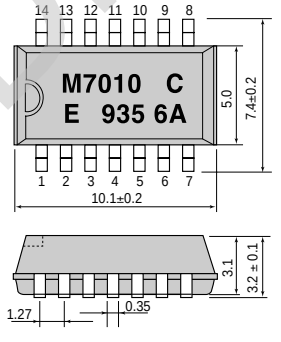
Item		Symbol	Specifications	Remark
Frequency change time		t_{ft}	10 ms Max.	S0, S1, S2, S3 changing
Output frequency range		f_0	20.0000 MHz to 120.0000 MHz	V_{DD}=4.5 V to 5.5 V
			20.0000 MHz to 80.0000 MHz	V_{DD}=2.7 V to 5.5 V
Power source voltage	Max. supply voltage	V_{DD}-GND	-0.5 V to +7.0 V	
	Operating voltage	V_{DD}	2.7 V to 5.5 V	
Temperature range	Storage temperature	T_{STG}	-55 °C to +100 °C	Stored as bare product after unpacking
	Operating temperature	T_{OPR}	-20 °C to +70 °C	
Frequency stability		$\Delta f / f_0$	C: ±100 x 10^{-6}	-20 °C to +70 °C, V_{DD}=2.7 V to 5.5 V
Current consumption		I_{op}	45 mA Max.	No load condition (fo=120 MHz)
Output disable current		I_{OE}	25 mA Max.	OE=GND, fo=120 MHz
Standby current		I_{ST}	10 µA Max.	$\overline{ST}$=GND
Duty		t_w/t	40 % to 60 %	1.4 V level
High output voltage		V_{OH}	V_{DD} -0.5 V Min.	I_{OH} = -16 mA (V_{DD}=5±0.5 V)
Low output voltage		V_{OL}	0.4 V Max.	I_{OL} = 16 mA (V_{DD}=5±0.5 V)
Output load condition		C_L	25 pF Max.	V_{DD}=4.5 V to 5.5 V($f_0 \leq$ 80 MHz)
			15 pF Max.	V_{DD}=2.7 V to 4.5 V or $f_0 >$ 80 MHz
High input voltage		V_{IH}	2.0 V Min.	$\overline{ST}$,OE terminal
Low input voltage		V_{IL}	0.8 V Max.	$\overline{ST}$,OE terminal
Output rise time		t_{TLH}	4.0 ns Max.	20 %→80 %V_{DD} level
Output fall time		t_{THL}	4.0 ns Max.	80 %→20 %V_{DD} level
Oscillation start up time		t_{OSC}	10 ms Max.	Time at 4.5 V to be 0 s
Aging		f_a	±5 x 10^{-6}/year Max.	Ta=+25 °C, V_{DD} =5.0 V / 3.0 V, First year
Shock resistance		S.R.	±20 x 10^{-6} Max.	Three drops on a hard board from 750 mm or excitation test with 29400 m/s² x 0.3 ms 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)



Metal may be exposed on the top or bottom of this product. This won't affect any quality, reliability or electrical spec.

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"→Clock out "L"→"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