

Revised in September 2021

Specification

Parameter	Sym.	Conditions	Value			Unit	Note	
			Min.	Typ.	Max.			
Frequency range	f_0		30		300	MHz	Frequency multiplication by 3 or 5	
Initial tolerance	$(f-f_0)/f_0$	+25°C, $V_C=0.5*V_{ref}$	±0.01	±0.1		ppm		
RF output								
HCMOS (TTL) option	Load		10		5	kOhm pF	100 MHz	
	H-level voltage	V_H	$V_{CC}=5\text{ V}, 12\text{ V}$ $V_{CC}=3.3\text{ V}$	3.8 2.4		V		
	L-level voltage	V_L			0.4	V		
	Duty cycle			45		55	%	
	Rise/Fall time					3	ns	100 MHz
Sine-wave option	Level	L	$V_{CC}=5\text{ V}, 12\text{ V}$ $V_{CC}=3.3\text{ V}$	+7 +4		dBm		
	Load	R_L			50	Ohm		
	Harmonics level					-30	dBc	
Sub-harmonics level						-40	dBc	100 MHz
Power supply								
Voltage	V_{CC}		11.4 4.75 3.15	12.0 5.0 3.3	12.6 5.25 3.45	V		
Power consumption		Warm-up time Steady state, +25°C			3500 1200	mW	100MHz, -40°C..85°C	
Warm-up time	t_{up}	at +25°C to $\Delta f/f=1e-7$			180	s	ref. to freq. after 15 min. of operation	
Frequency control								
Control voltage range	V_C	$V_{CC}=5\text{ V}, 12\text{ V}$ $V_{CC}=3.3\text{ V}$	0 0		4.3 3.1	V		
Tuning range		Compliance with 10 years of aging	±0.5			ppm	positive slope	
Reference voltage	V_{ref}	$V_{CC}=5\text{ V}, 12\text{ V}$ $V_{CC}=3.3\text{ V}$	4.0 2.5		4.3 3.1	V		
Frequency stability								
vs. temperature		ref. 25°C, air flow 0.5 m/s max.	±3.0			ppb	See ordering code	
vs. supply voltage		ref V_{CC} typ.		±0.2		ppb		
G – sensitivity		worst direction, 0 – 1kHz vibration BW (for 0 – 2kHz BW consult the factory)	±0.2	±1.0		ppb/G		
Retrace		24h work after 24h off			±10	ppb	100MHz	
SSB Phase noise		10 Hz	-110		-95	dBc/Hz	100MHz Frequency multiplication on 5 $V_{CC}=5\text{ V}, 12\text{ V}$	
		100 Hz	-130		-120			
		1 kHz	-145		-135			
		10 kHz	-155		-145			
		100 kHz	-155		-150			
Allan deviation		1 s	5		30	e-12	100MHz	
Aging	per day	after 30 days of operation	±0.5			ppb	100MHz see ordering code	
	first year		±0.05			ppm		
Environmental, mechanical conditions								
Airflow velocity	0.5 m/s maximum							
Operating temperature range	See ordering code							
Storage temperature range	-60°C to +85°C							
Power voltage	-0.5V to $V_{CC}+20\%$							
Control voltage	-0.5V to 6V							
Humidity	Hermetically sealed							
Mechanical shock	Per MIL-STD-202, 30G half sine pulse, 11ms (500G, 1ms — optionally)							
Vibration	Per MIL-STD-202, 10G sweep sine 0 to 2000Hz							
Soldering conditions	Hand solder only – not reflow compatible. 260°C 10s (on pins)							
Washing Conditions	Washing with water or alcohol based detergent allowed only with final enough drying stage							

For ordering code – see next page

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Ordering code

MXOHE	-	B	18	B	5	T	- 100 MHz
		1	2	3	4	5	

1	Temperature range
Code	Specification
A	0°C..50°C
B	-10°C..60°C
C	0°C..70°C
D	-20°C..70°C
E	-30°C..70°C
F	-40°C..85°C
G	-55°C..85°C
Q	-60°C..85°C

2	Stability over temperature			
Code	Specific.	Temperature range code available for 100MHz 5V	Temperature range code available for 300MHz 5V	
XY	±Xe-Y			
19	±1e-9	A, B, C, D, E, F		-
29	±2e-9	A, B, C, D, E, F, G		A, B, C, D, E
39	±3e-9	A, B, C, D, E, F, G, Q		A, B, C, D, E, F
59	±5e-9	A, B, C, D, E, F, G, Q		A, B, C, D, E, F, G
18	±1e-8	A, B, C, D, E, F, G, Q		A, B, C, D, E, F, G, Q
28	±2e-8	A, B, C, D, E, F, G, Q		A, B, C, D, E, F, G, Q
38	±3e-8	A, B, C, D, E, F, G, Q		A, B, C, D, E, F, G, Q
58	±5e-8	A, B, C, D, E, F, G, Q		A, B, C, D, E, F, G, Q

3	Aging per day/year, ppb/ppm		
Code	Specification		
A	0.1/0.015	For frequency range of 30-150 MHz	
B	0.2/0.02		
Z	0.3/0.03		
C	0.5/0.05		
D	1/0.1		
E	1.5/0.15	For frequency range of 150-300 MHz	
F	2/0.2		
G	3/0.3		
H	5/0.5		

4	Supply voltage
Code	Specification
3	3.3V±5%
5	5V±5%
2	12V±5%

5	Output
Code	Specification
T	HCMOS/TTL
S	Sine wave

Deviation of the parameters is possible on customer's requirements. Please consult the factory.