

Active Crystals Ultra Low Power CrystalFree™ Oscillators

PRELIMINARY DATA SHEET

Features

■ Frequency Range: 4 to 50 MHz Output Type: **CMOS** ■ Initial Frequency Tolerance: ± 50 ppm Supply Voltage: 1.8 to 3.3 V Power Consumption: 1.9 mA (1.8 V) Standby Current: < 1 uA

■ Standard Package: 5.0 x 3.2 mm

2.5 x 2.0 mm

Operating Temperature: 0 to 70 °C

-20 to 70 °C



Specification

Parameter	Symbol	Specifications			Conditions
Supply Voltage	VDD	1.8 V	2.5 V	3.3 V	Nominal
Output Frequency	F _{OUT}	4 to 50 MHz			See ordering code
Initial Frequency Tolerance	F _{TOL}		± 50 ppm		25°C
Supply Current	IDD	1.9 mA	2.0 mA	2.2 mA	Typical; No load condition; 25°C
Quiescent Current	I _{STBY}		1 uA (max)		STBY# = GND
Input LOW level	V _{IL}	0.3 VDD (max)			At STBY# pin
Input HIGH level	V _{IH}	0.7 VDD (min)			
Output LOW level	V _{OL}	0.1 VDD (max)			I _{OL} = - 1 mA
Output HIGH level	V _{OH}	0.9 VDD (min)			I _{OH} = 1 mA
Tolerance over Temperature	F _{TEMP}	± 100 ppm			-20 to 70°C
Rise/Fall Time	T_R/T_F	2.75 ns	2.3 ns	1.9 ns	20% to 80% x VDD. Output load (CL) = 4 pF
Symmetry	SYM	45% / 55%			
Start-up time	T _{ST}	400 us			Output valid time after VDD meets the specified range & STBY# transition
Period Jitter	PJ_{RMS}	17 ps	6 ps	5 ps	4 pF load; 50 MHz
Cycle to Cycle Jitter	CCJ_{MAX}	120 ps	50 ps	40 ps	4 pF load; 50 MHz

^{*}Aging @25°C is negligible over lifetime

Package Outline and Dimensions

Top View

- 3.20 ±0.05 → 0.90 ±0.05 0.85 ±0.05 0.5 x 45° 0.0-0.05 1.20 ±0.05 STBY# VDD 5.0×3.2 4L SMD (mm) 5.00 ±0.05 2.54 5.0 x 3.2mm OUT 0.203 Ref. **Top View Bottom View** Side View Pin #1 ID 0.65 ± 0.05 0.0-0.05 ←2.0 ±0.05 → Chamfer 0.35 x 45° 0.55 ±0.05 0.75 ±0.05 — STBY# VDD 2.5 x 2.0 4L SMD (mm) 0.152 Ref. .5 ±0.05 1.225 Bsc 2.5 x 2.0mm GND OUT

Side View

Pin #1 ID

Bottom View

Typical PCB Land Pattern

8102 Datasheet CrystalFree™ Oscillator

Absolute Maximum Ratings

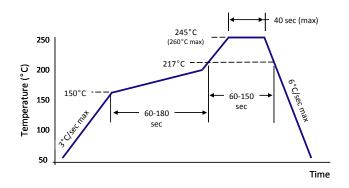
Stresses beyond those listed under *Absolute Maximum Ratings* may cause permanent damage to the device. These ratings are stress specifications only. Functional operation of product at these or under any condition beyond those listed in the operating specifications is not implied. Exposure to absolute maximum rated conditions may affect product reliability.

Item	Maximum Absolute Rating
VDD	4.6 V
STBY#	-0.5 V to VDD + 0.5 V
OUT	-0.5 V to VDD + 0.5 V
Storage Temperature	-65°C to 150°C

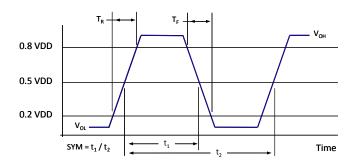
Pin Descriptions

Pin#	Name	Description			
1	STBY#	Standby Mode ¹ (0 = Output Disabled)			
2	GND	Ground			
3	OUT ²	CMOS Output			
4	VDD	Power			
Pulled high internally Weak pull down to GND during STBY# enable and startup					

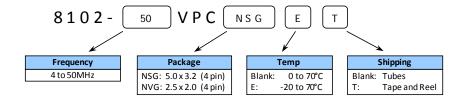
Solder Reflow Profile



Output Waveform



Ordering Information





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Sales

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