Rev. C

Accusilicon AS509 Series Professional Audio OCXO

Features

- Very good short term stability (Allan deviation) per 1 sec, designed for Professional audio applications, Typical 2E-12
- Very low close-in phase noise
- High stability vs. temperature: up to ±350ppb
- Long term stability up to ±1ppb/day
- Tristate enable/disable
- CMOS 3.3V output
- Typical 50mm x 50mm x 25mm package
- Available in 11.2896MHz, 12.188MHz, 22.5792MHz, 24.5796MHz, 45.1584MHz, 49.152MHz, 90.3168MHz, 98.304MHz, 100MHz, 180.6336MHz, 196.608MHz
- Available as RoHS

Application

- Professional audio application CMOS output

Pin Definition

Pin No#	Pin Definition	Function
1	GND	GND
2	VDD	9-12V Power Supply
3	OE	Enable/Disable, Low Enable
4	NC	NC
5	OUPUT	CMOS 3.3V Output

Electrical Specifications

General Electrical Specifications

Symbol	Description	Conditions	Min	Typical	Max	Unit
Vdd	Supply Voltage	AS509 parts	8	10	13	V
Iosc	Current Consumption	Warm Up (Vdd=10V)			500	mA
		Steady (25°C, Vdd=10V)			300	mA
Output	Output Wave Form	CMOS 3.3V				
	Output Level L “0”				0.3	V
	Output Level H “1”		2.9			V
	Rise/Fall time	0.66V-2.64V@90.3168MHz			1	ns
	Clock Duty Cycle		45	50	55	%
OE	Oscillation output ON	OE= Level L (VIL ≤ 0.99V) is selected.				
	High impedance	OE= Level H (2.31V ≤ VIH ≤ 3.3V) or OPEN is selected				
Frequency stability	Initial accuracy	25°C ± 2°C			±50	ppb
	Frequency stability vs. Temperature	10°C ~ 50°C			±350	ppb
	Frequency stability vs. Power supply changes	Power supply changes (±5%)			±100	ppb
	Frequency stability vs. Load changes	Load changes (±5%)			±50	ppb
	Short term stability (Allan deviation)	per 1 sec, for 90.3168MHz After power on 1 hour		2E-12		
CL	Load				15	pF
Aging	Long term stability	Aging per day		±1		ppb
	Warm Up Time				5	min
	Operating Temperature		0		50	°C
	Storage Temperature		-10		55	°C

Note: It is recommended that the power supply be filtered with a 10uF capacitor.

Typical Phase Noise

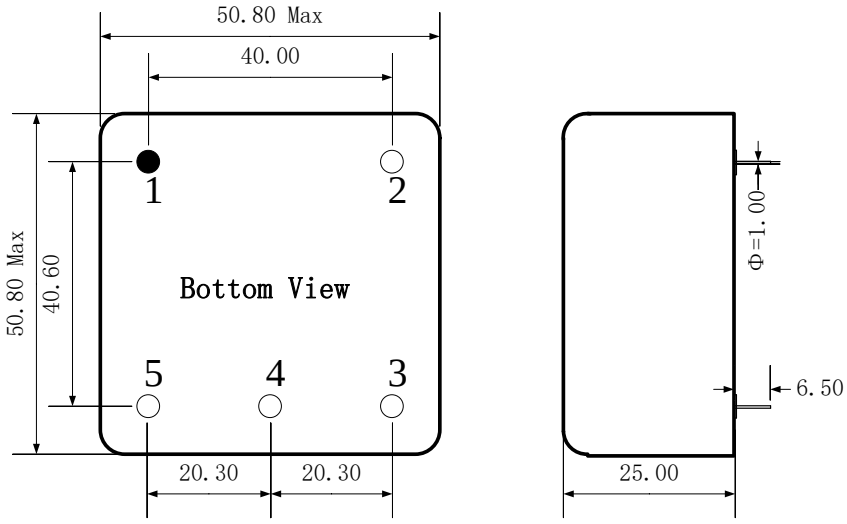
Phase Noise	11.2896MHz		
	1Hz	-107	dBc/Hz
	10Hz	-121	dBc/Hz
	100Hz	-131	dBc/Hz
	1KHz	-140	dBc/Hz
	10KHz	-143	dBc/Hz
	100KHz	-144	dBc/Hz

Phase Noise	12.288Mhz		
	1Hz	-105	dBc/Hz
	10Hz	-119	dBc/Hz
	100Hz	-130	dBc/Hz
	1KHz	-139	dBc/Hz
	10KHz	-141	dBc/Hz
	100KHz	-143	dBc/Hz

Phase Noise	90.3168MHz		
	1Hz	-86	dBc/Hz
	10Hz	-101	dBc/Hz
	100Hz	-113	dBc/Hz
	1KHz	-122	dBc/Hz
	10KHz	-126	dBc/Hz
	100KHz	-128	dBc/Hz

Phase Noise	98.304Mhz		
	1Hz	-84	dBc/Hz
	10Hz	-105	dBc/Hz
	100Hz	-117	dBc/Hz
	1KHz	-120	dBc/Hz
	10KHz	-121	dBc/Hz
	100KHz	-123	dBc/Hz

Package Dimension (mm)



All tolerances ±0.3mm

Pin No#	Pin Definition
1	GND
2	VDD
3	OE
4	NC
5	OUPUT

List of available part numbers

Part No#	Frequency	Supply Voltage	Output	Package
AS509-112896	11.2896MHz	9V-12V	COMS 3.3V	50mm x 50mm x 25mm
AS509-121880	12.1880MHz	9V-12V	COMS 3.3V	50mm x 50mm x 25mm
AS509-225792	22.5792MHz	9V-12V	COMS 3.3V	50mm x 50mm x 25mm
AS509-245796	24.5796MHz	9V-12V	COMS 3.3V	50mm x 50mm x 25mm
AS509-451584	45.1584MHz	9V-12V	COMS 3.3V	50mm x 50mm x 25mm
AS509-491520	49.1520MHz	9V-12V	COMS 3.3V	50mm x 50mm x 25mm
AS509-903168	90.3168MHz	9V-12V	COMS 3.3V	50mm x 50mm x 25mm
AS509-983040	98.3040MHz	9V-12V	COMS 3.3V	50mm x 50mm x 25mm
AS509-100	100MHz	9V-12V	COMS 3.3V	50mm x 50mm x 25mm
AS509-1806336	180.6336MHz	9V-12V	COMS 3.3V	50mm x 50mm x 25mm
AS509-1966080	196.6080MHz	9V-12V	COMS 3.3V	50mm x 50mm x 25mm