



*Analog Semiconductor IC*

# AS27000VCA

27.000MHz /  $\pm 110$ ppm / 7050 SMD Type  
Voltage Controlled Crystal Oscillator (VCXO)

Rev. E09-08

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## Products Data Sheet

### Analog Semiconductor IC

27.000MHz /  $\pm 110$ ppm / 7050 SMD Type Voltage Controlled Crystal Oscillator

# AS27000VCA

## GENERAL DESCRIPTIONS

AS27000VCA is voltage controlled crystal oscillator (VCXO) of the 7x5mm ceramic SMD package.

AS27000VCA can be best solution for image compression (MPEG) instruments such as digital TV, set-up box and DVD.

As for the actual frequency deviation range,  $\pm 150$ ppm is possible in the 1.65V $\pm$ 1.65V control voltage range.



## FEATURES

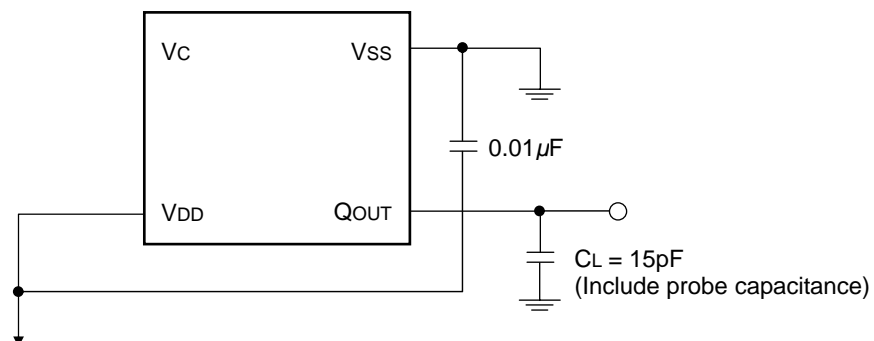
- Output frequency ..... 27.000MHz / 3.3V
- Frequency deviation range .....  $\pm 110$ ppm /  $V_C=1.65V\pm 1.65V$
- Frequency stability .....  $\pm 30$ ppm at  $T_a=-20^\circ C \sim +70^\circ C$ ,  $V_{DD}=3.3V\pm 5\%$
- Low power consumption ..... 7mA / 3.3V
- Operating voltage ..... 3.3V $\pm 5\%$
- Small SMD package ..... 7.0x5.0x1.7mm ceramic SMD package

## APPLICATIONS

- Digital TV
- Set-up box
- DVD
- Other image compression instruments (MPEG)

**ELECTRICAL CHARACTERISTICS**(Unless otherwise specified, V<sub>DD</sub>=3.3V, T<sub>a</sub>=25°C)

Items	Min.	Typ.	Max.	Conditions	Unit
Output frequency	-	27.000	-		MHz
Frequency deviation range	±110	-	-	V <sub>C</sub> =1.65V±1.65V	ppm
Frequency stability	±30	-	-	T <sub>a</sub> =-20°C ~+70°C, V <sub>DD</sub> =3.3V±5% (including initial deviation at 25°C, V <sub>C</sub> =1.65V, V <sub>DD</sub> =3.3V)	ppm
Frequency stability / power supply voltage	-	-	±3.0	V <sub>DD</sub> =3.3V (reference at 25°C, V <sub>C</sub> =1.65V)	ppm
Frequency tuning voltage range	-	1.65 ±0.3	-	T <sub>a</sub> =25±2°C, V <sub>DD</sub> =3.3V	V
Operating voltage	3.135	3.3	3.465		V
Power consumption	-	7.0	9.0	No load	mA
Output load	-	15	-		pF
"H"-level input voltage	3.0	-	-		V
"L"-level input voltage	-	-	0.3		V
"H"-level output voltage	3.0	-	-		V
"L"-level output voltage	-	-	0.3		V
Operating temperature range	-20	-	70		°C
Storage temperature range	-40	-	85		°C
Assembly temperature range	Peak temperature 240°C±5°C for 5sec Max. Maximum temperature : 245°C				

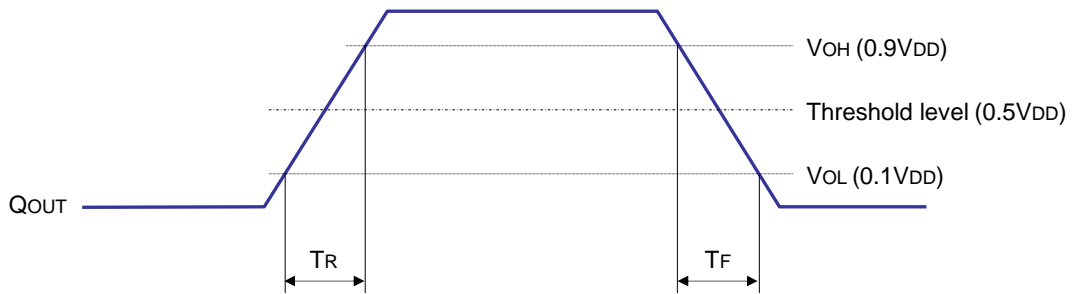
**MEASUREMENT CIRCUIT**

### SWITCHING CHARACTERISTICS

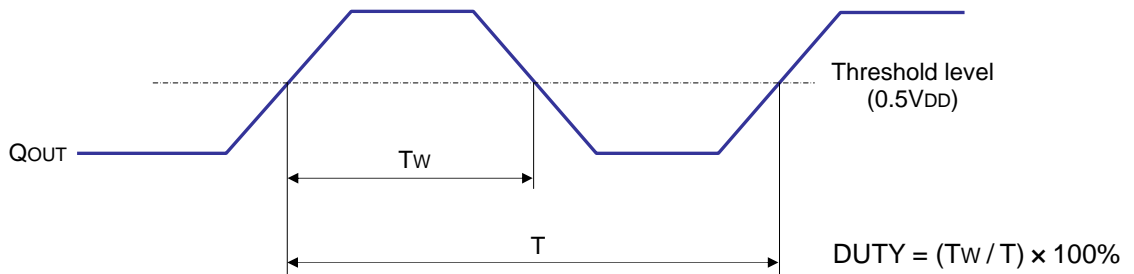
(Unless otherwise specified, VDD=3.3V, Ta=25°C, Load=15pF)

Items	Symbol	Min.	Typ.	Max.	Conditions	Unit
Output rising time	TR	-	-	4	0.1VDD ~ 0.9VDD	nsec
Output falling time	TF	-	-	4	0.9VDD ~ 0.1VDD	nsec
Output duty cycle	Duty	45	-	55	VDD/2	%

[Fig.1] Output wave form

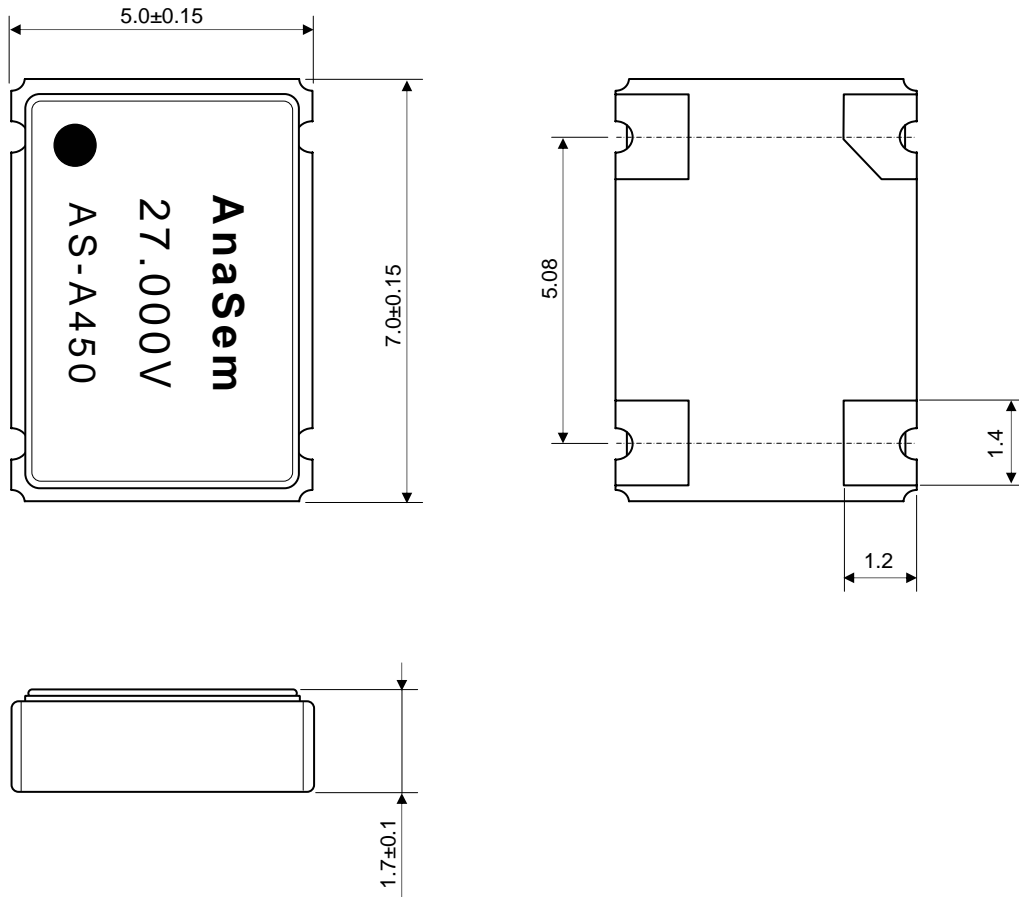


[Fig.2] Output duty cycle

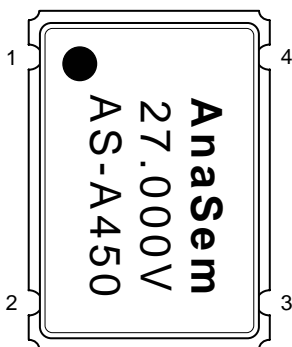


**PACKAGE DIMENSIONS (7050 SMD-4PAD)**

(Unit : mm)



**PIN CONFIGURATION**



No.	Symbol	Descriptions
1	VC	Control voltage
2	VSS	Power ground
3	QOUT	Frequency output
4	VDD	Power source (3.3V)



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