


**NEW**

Date: Oct 1st, 2005

**スペクトラム拡散タイプ水晶発振器****Technical Report for Spread Spectrum Type Oscillators**

高速通信機器にとってEMIノイズは問題となる要素の一つになってきています。一般的に高速機器では高周波クロックが必要とされるものの、同時にEMIノイズが発生するという問題が出ています。EMIノイズを抑える一つの提案として、スペクトラム拡散タイプの発振器を開発しました。7.5x5.0mmサイズのパッケージで、8MHZから170MHZまでの如何なる周波数でも対応出来ます。

**Spread Spectrum Type:**

	Model:	Size:	Frequency:	Spread Type:
	CET- TYPE	7.5x5.0mm	8.0~170Mhz	Center Spread Down Spread

**Model Name:**

(1) (2) (3) (4) (5) (6)

**CET 3 0 A C 025**

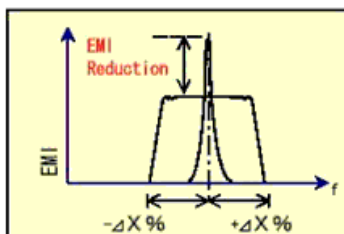
(1)	Model Name (CET)
(2)	Voltage Option (Only 3=3.3V)
(3)	Frequency Stability at Spread Off (0=+-100ppm, 5=+-50ppm)
(4)	Temperature Range (A=-10~70C, F=-40~85C)
(5)	Spread Type (C=Center Spread, D=Down Spread)
(6)	Modulation Ratio (3digit: 0.25%=025, 1.00%=100)

**Center Spread センター拡散スペクトラム:**

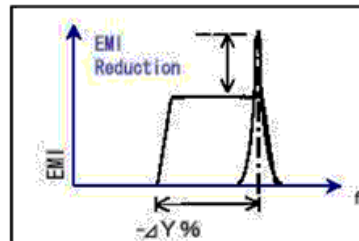
	+0.25%	+0.5%	+0.75%	+1.0%	+1.50%	+2.0%
Model	CET30AC025	CET30AC050	CET30AC075	CET30AC100	CET30AC150	CET30AC200

**Down Spread ダウン拡散スペクトラム:**

	-0.50%	-1.00%	-1.50%	-2.00%	-3.00%	-4.00%
Model	CET30AD050	CET30AD100	CET30AD150	CET30AD200	CET30AD300	CET30AD400



Center Spread



Down Spread

Center Spread:  
Reduce EMI symmetrically  
from output frequency

Down Spread:  
Reduce EMI down-side from  
output frequency

Please contact us for any Questions and Requests.

**KYUSHU DENTSU CO., LTD. (KDK)**

340 Fukushige Omura Nagasaki 856-0006 Japan

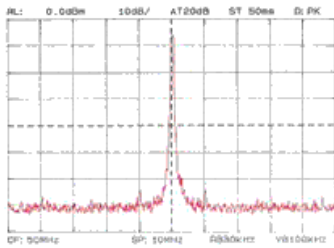
TEL:+81-957-55-1313 FAX:+81-957-27-4018

EMAIL: [kdk@kdk-group.co.jp](mailto:kdk@kdk-group.co.jp)

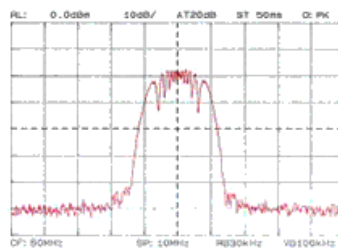
**Specification:**

特性項目	条件	CET30AC	CET30AD
消費電流(max.)	Frequency Ranges	8.0~170MHz 50mA (Load=15pF)	
歪調度	Center/Down Spread	+0.25%, +0.5%, +0.75% +1.0%, +1.5%, +2.0%	-0.5%, -1.0%, -1.5% -2.0%, -3.0%, -4.0%
シンメトリー(max.)	At 0.5Vdd	45%/55%	
出力電圧 Voh	"0" Level (max.)	0.33V (Iol: 8mA)	
Vol	"1" Level (min.)	2.97V(Iol:8mA)	
立上り/立下り時間(max)	At 0.2Vdd~0.8Vdd	3.0ns	
ジッタ	Cycle to Cycle	400ps max(<133MHz) (SS ON) 250ps max >=133MHz) (SS ON)	
歪調周波数		30kHz~33kHz	
スタートアップ (max.)	Frequency Range	10ms	
E/D 機能	#1 Open #1 >=0.7Vdd #1 <=0.3Vdd	#4 Active #4 Active #4 High Z	

**Center Spread Spectrum:**



Spread Off

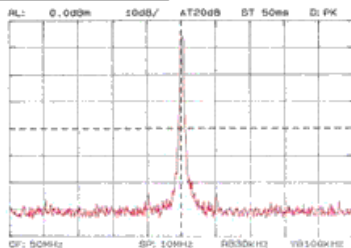


Spread +2.0%

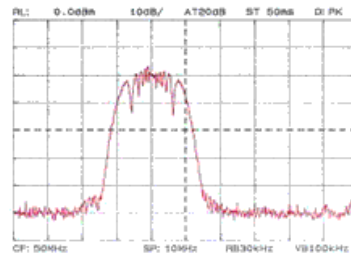


Clock Form at Spread +2.0%

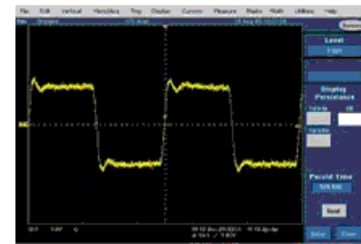
**Down Spread Spectrum:**



Spread Off



Spread -4.0%



Clock Form at Spread -4.0%

**Applications**

Laser Printer, Scanner, Fax, Modem, Wireless LAN terminal, Printer Server, ADSL terminal, Storage Systems(CD-ROM, VCD, DVD and HDD)

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