

# Crystal Clock Oscillator

## 2765E Series

## EMI Noise-reducing Type

### Model name

2765E Frequency stability of  $\pm 100 \times 10^{-6}$ .

### Application

- For compact mobile information equipment, such as PDA and notebook PC

### Features

- With a spread spectrum function installed, this crystal oscillator effectively reduces EMI noise.
- Down-spreading and center-spreading.
- With a standby function installed, power consumption is reduced.

### Specifications

Pb  
Free

RoHS Compliant  
Directive 2002/95/EC

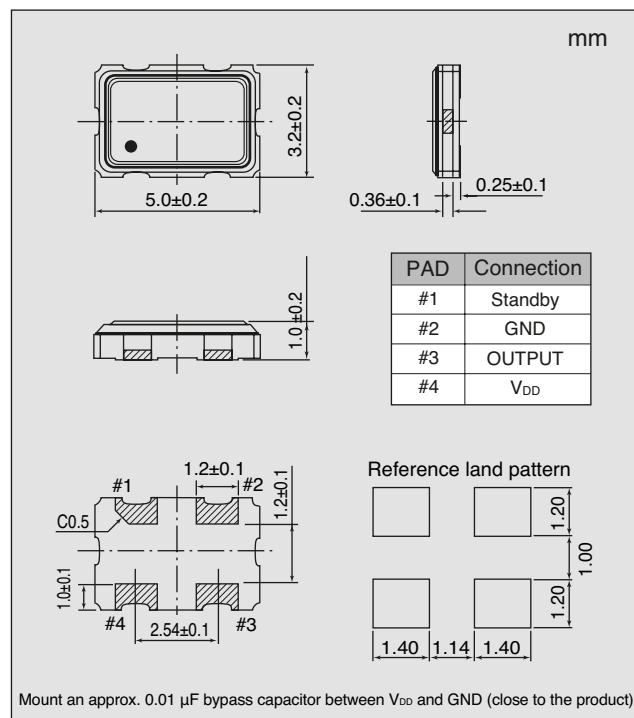
Absolute maximum rating  
Power supply voltage ( $V_{DD}$ ) -0.5 to +4.0 V  
Storage temperature range -55 to +125 °C



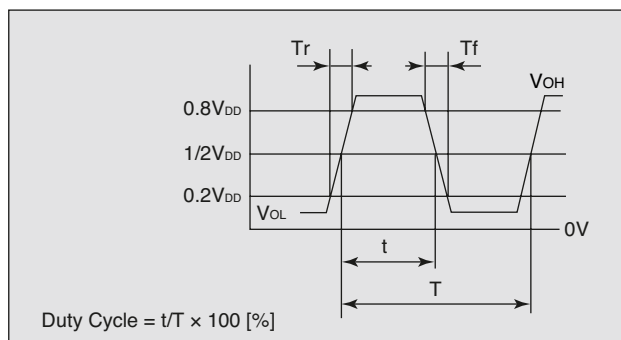
Item	Model	2765E
Output level		C-MOS
Frequency range <sup>*1</sup>	(MHz)	$40 \leq F \leq 80$
Operating temperature range <sup>*2</sup>	(°C)	-20 to +70
Frequency stability	( $\times 10^{-6}$ )	$\pm 100$
Power supply voltage [ $V_{DD}$ ]	(V)	+3.3 $\pm$ 0.3
Current consumption	During operation (mA)	30
(+3.3 V, 25 °C) max	During standby ( $\mu$ A)	30
$V_{OL}$ max/ $V_{OH}$ min	(V)	0.2 $V_{DD}$ /0.8 $V_{DD}$
$T_r$ max/ $T_f$ max	(ns)	5/5 (0.2 $V_{DD}$ to 0.8 $V_{DD}$ )
Duty Cycle min. to max.	(%)	40 to 60 (at 1/2 $V_{DD}$ )
Load ( $C_L$ ) max	(pF)	15
Oscillation start time max	(ms)	10
Standby function		Available (tristate)
Number for specifying an order		NSA3393A

\*1: If you require a product with a frequency not given above, please contact us. \*2: If you require a product with an operating temperature range not given above, please contact us.

### Dimensions



### Output Waveform <C-MOS>



### Spread Spectrum Characteristics

Spreading Type	Spreading Ratio
Center spreading	$\pm 1.0$ %

### Standby Function

#1 Input	#3 Output
Level H ( $0.7 V_{DD} \leq V_{IH} \leq V_{DD}$ ) or OPEN is selected.	Oscillation output ON
Level L ( $V_{IL} \leq 0.3 V_{DD}$ ) is selected.	High impedance

### How to Specify an Order

When ordering our products, specify them with an "Ordering Code" that consists of the following:

[Model name] - [Frequency (up to 9 digits)] M - [Number for specifying an order]

If you have any queries concerning our standard frequencies and numbers for specifying orders, please contact our sales representatives or visit our homepage (<http://www.ndk.com/>).

Example 1: When ordering a product with model name: 2765E, frequency: 40 MHz, frequency stability:  $\pm 100 \times 10^{-6}$ , and power supply voltage: 3.3 V  
Ordering Code: 2765E - 40.000000M - NSA3393A