

### Model name

2765E Overall frequency tolerance 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.

Pb Free

RoHS Compliant  
Directive 2011/65/EU



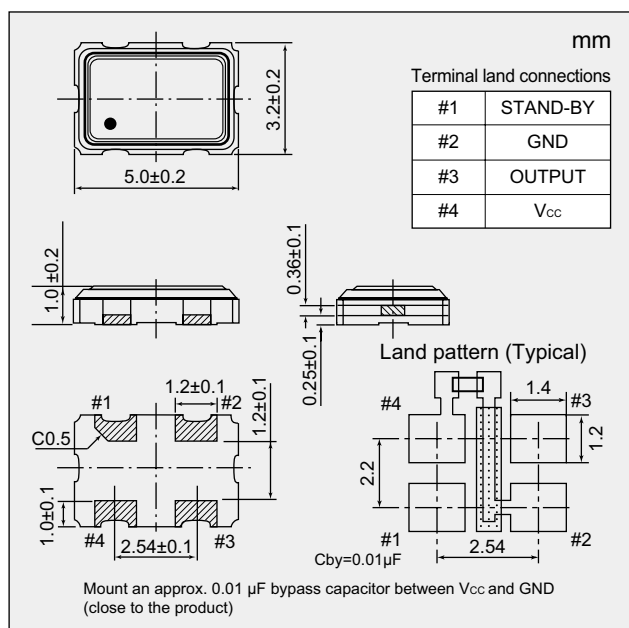
Absolute maximum rating  
Supply voltage ( $V_{CC}$ ) -0.5 to +7.0 V  
Storage temperature range -55 to +125 °C

### Specifications

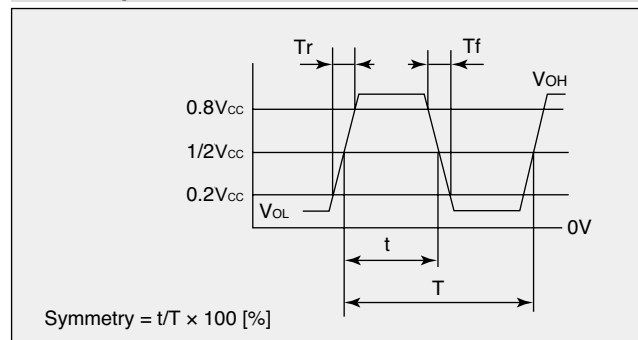
Item		Model	2765E
Output level			CMOS
Nominal frequency range *1	(MHz)		$20 \leq F \leq 80$
Operating temperature range *2	(°C)		-20 to +70
Overall frequency tolerance	( $\times 10^{-6}$ )		$\pm 100$
Supply voltage [ $V_{CC}$ ]	(V)		$+3.3 \pm 0.3$
Current consumption (+3.3 V, 25 °C) max	During operation	(mA)	30
	During standby	( $\mu$ A)	30
$V_{OL}$ max/ $V_{OH}$ min	(V)		$0.2 V_{CC}/0.8 V_{CC}$
Tr max/Tf max	(ns)		5/5 (0.2 $V_{CC}$ to 0.8 $V_{CC}$ )
Symmetry min. to max.	(%)		40 to 60 (at 1/2 $V_{CC}$ )
Load ( $C_L$ ) max	(pF)		15
Start-up time max	(ms)		10
Standby function			Available (Three-state)
Number for specifying an order			NSA3393B

\*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 <CMOS>



### Spread Spectrum Characteristics

Spreading Type	Spreading Ratio
Center spreading	$\pm 2.0$ %

### Standby Function

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

### How to Specify an Order

When ordering our products, specify them with an "Ordering Code" that consists of the following: Example : When ordering a product with model name: 2765E, frequency: 20 MHz, overall frequency tolerance:  $\pm 100 \times 10^{-6}$ , and supply voltage: 3.3 V  
 Ordering Code: 2765E - 20.000000M - NSA3393B

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/>).