



5x7,5mm SMT CRYSTAL-OSCILLATORS NMSOL3 / NMSOL5 3,3V / 5,0V 15pF



FREQUENZSTABILITÄT FREQUENCY STABILITY	
Modell Model	
NM1SOL3 / NM1SOL5	±100ppm/-10~+70°C
NM2SOL3 / NM2SOL5	±50ppm/-10~+70°C
NM3SOL3 / NM3SOL5	±25ppm/-10~+70°C
NM4SOL3 / NM4SOL5	±20ppm/-10~+70°C
NM1SOL3R / NM1SOL5R	±100ppm/-40~+85°C
NM2SOL3R / NM2SOL5R	±50ppm/-40~+85°C
NM3SOL3R / NM3SOL5R	±25ppm/-40~+85°C

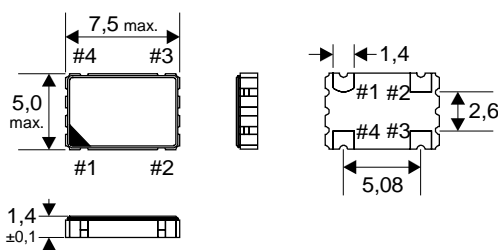
BETRIEBSBEDINGUNGEN OPERATING CONDITIONS	
Betriebstemperatur <i>operating temp.</i>	-10~+70°C, -40~+85°C
Lagertemperatur <i>storage temperature</i>	-55~+125°C
Betriebsspannung V_{DD} <i>supply voltage</i>	+3,3V ±0,3V +5,0V ±0,5V
Feuchteempfindlichkeit <i>MSL</i>	1
nicht alle Toleranzen sind bei Frequenzen über 70 MHz möglich <i>not all tolerances are available at frequencies above 70 MHz</i>	

Elektrische Daten <i>electrical characteristics</i>				
$T_a = 25^\circ\text{C}$, $V_{DD} = 3,3\text{ V} / 5,0\text{ V}$, $C_L = 15\text{ pF}$				
Parameter <i>parameter</i>	Bedingungen <i>conditions</i>	Frequenzbereich <i>frequ. range</i>	NMSOL3	NMSOL5
max. Stromaufnahme <i>max. input current</i>	I_{DD}	12 kHz ~ 32,000 MHz 32,000 ⁺ ~ 50,000 MHz 50,000 ⁺ ~ 67,000 MHz 67,000 ⁺ ~ 125,000 MHz 125,000 ⁺ ~ 170,000 MHz	12 mA 16,5 mA 18 mA 40 mA 50 mA	18 mA 20 mA 50 mA 80 mA 90 mA
Frequenzstabilität <i>frequency stability</i>	über alles *) all conditions *)	12 kHz ~ 170,000 MHz	±20 ppm ~ ±100 ppm	
Tastverhältnis <i>symmetry</i>	@50% V_{DD}	12 kHz ~ 50,000 MHz 50,000 ⁺ ~ 170,000 MHz	45/55 % 40/60 %	40/60 % 40/60 %
Ausgangsspannung <i>output voltage</i>	V_{OL} V_{OH}	"0" level "1" level	10% V_{DD} max. 90% V_{DD} min.	
Anstiegszeit max. <i>rise time max.</i>	T_R	10% - 90% V_{DD}	12 kHz ~ 79,999 MHz 80,000 ~ 25,000 MHz 125,000 ⁺ ~ 170,000 MHz	6 ns 4 ns 3 ns
Abfallzeit max. <i>fall time max.</i>	T_F	90% - 10% V_{DD}	12 kHz ~ 79,999 MHz 80,000 ~ 125,000 MHz 125,000 ⁺ ~ 170,000 MHz	6 ns 4 ns 3 ns
Ausgangsstrom min. <i>output current min.</i>	I_{OL} I_{OH}	"0" level "1" level	2 mA 2 mA	
standby current max.	$V_{IL} \leq 30\% V_{DD}$	12 kHz ~ 170,000 MHz	10 µA	
max. Belastbarkeit <i>max. driving ability</i>	TTL	12 kHz ~ 170,000 MHz	10 LS-TTL	
	HCMOS	12 kHz ~ 170,000 MHz	15 pF	
Startzeit max. <i>start-up time max.</i>	0,0 - V_{DD}	12 kHz ~ 32,000 MHz	5 ms	
		32,000 ⁺ ~ 170,000 MHz	10 ms	

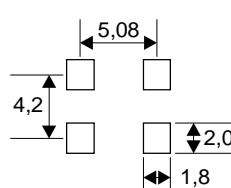
*) Anmerkung: inkl. Abgleichtoleranz, Temperaturgang, Spannungs- und Laständerung, Alterung, Schock und Vibration
note: incl. frequency and temperature tolerance, supply voltage and load change, aging, shock and vibration

Abmessungen in mm
dimensions in mm

empfohlenes Layout
recommended solder pad layout



lead-free/RoHS-conformal



Anschlußbelegung
pin connections

#1	E/D
#2	GND
#3	OUT
#4	V_{DD}

Funktionstabelle
enable /disable function

INH (pin #1)	output (pin #3)
open	active
"1" ($V_{IH} \geq 70\% V_{DD}$)	active
"0" ($V_{IL} \leq 30\% V_{DD}$)	high Z