



3,2x5mm CRYSTAL-OSCILLATORS very low power GMPB / GMQB / GMSB

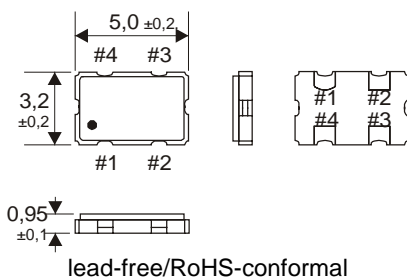


FREQUENZSTABILITÄT FREQUENCY STABILITY		BETRIEBSBEDINGUNGEN OPERATING CONDITIONS		
Modell <i>Model</i>				
GM1PB/GM1QB/GM1SB	±100ppm/-10~+70°C	Betriebstemperatur <i>operating temp.</i>	-10~+70°C, -40~+85°C	
GM2PB/GM2QB/GM2SB	±50ppm/-10~+70°C	Lagertemperatur <i>storage temperature</i>	-55~+125°C	
GM3PB/GM3QB/GM3SB	±25ppm/-10~+70°C	Betriebsspannung V_{DD} <i>supply voltage</i>	GMPB	+3,3V ±5%
GM1PBR/GM1QBR/GM1SBR	±100ppm/-40~+85°C		GMQB	+2,8V ±5%
GM2PBR/GM2QBR/GM2SBR	±50ppm/-40~+85°C		GMSB	+2,5V ±5%

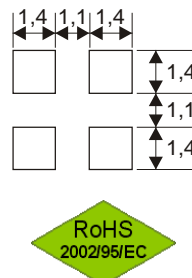
Elektrische Daten <i>electrical characteristics</i> $T_a = 25^\circ\text{C}$, $V_{DD} = 3,3\text{ V}$ or $2,8\text{ V}$ or $2,5\text{ V}$, $C_L = 15\text{ pF}$					
Parameter <i>parameter</i>	Bedingungen <i>conditions</i>	Frequenzbereich <i>frequ. range (MHz)</i>	GMSB	GMQB	GMPB
max. Stromaufnahme <i>max. input current</i>	I_{DD}	1,800 ~ 32,000 32,000 ⁺ ~ 50,000	1,5 mA 2,5 mA	2,0 mA 3,0 mA	2,5 mA 3,5 mA
Frequenzstabilität <i>frequency stability</i>	über alles *) all conditions *)	1,800 ~ 50,000	±25 ppm ~ ±100 ppm		
Tastverhältnis <i>symmetry</i>	@50% V_{DD} @1,4 V		45/55 %		
Ausgangsspannung <i>output voltage</i>	"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 ns		
Abfallzeit max. <i>fall time max.</i>	T_F 90% - 10% V_{DD}		12 ns		
Standbystrom max. <i>standby current max.</i>	$V_{IL} \leq 30\% V_{DD}$		1 μA		
max. Belastbarkeit <i>max. driving ability</i>	CMOS		15 pF		
Startzeit max. <i>start-up time max.</i>	0,0 V ~ V_{DD}		5 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
±25ppm/-40/+85°C nur inkl. Abgleichtoleranz, Temperaturgang, Spannungs- und Laständerung
±25ppm/-40/+85°C only incl. frequency and temperature tolerance, supply voltage and load change

Abmessungen in mm
dimensions in mm



empfohlenes Layout
recommended solder pad layout



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