



## 2,5x3,2mm LOW CURRENT OSCILLATOR

### EMP1BL 3,3V / EMQ1BL 2,8V / EMS1BL 2,5V

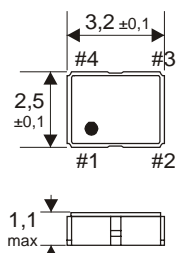


FREQUENZSTABILITÄT FREQUENCY STABILITY		BETRIEBSBEDINGUNGEN OPERATING CONDITIONS	
Modell <i>Model</i>			
EM1P1BL/EM1Q1BL/EM1S1BL	±100ppm/-10~+70°C	Betriebstemperatur <i>operating temp.</i>	-10~+70°C, -40~+85°C
EM2P1BL/EM2Q1BL/EM2S1BL	±50ppm/-10~+70°C	Lagertemperatur <i>storage temperature</i>	-55~+125°C
EM3P1BL/EM3Q1BL/EM3S1BL	±25ppm/-10~+70°C	Betriebsspannung $V_{DD}$ <i>supply voltage</i>	EMP1BL +3,3V ± 5% EMQ1BL +2,8V ± 5% EMS1BL +2,5V ± 5%
EM1P1BRL/EM1Q1BRL/EM1S1BRL	±100ppm/-40~+85°C		
EM2P1BRL/EM2Q1BRL/EM2S1BRL	±50ppm/-40~+85°C		

Elektrische Daten <i>electrical characteristics</i>					
T <sub>a</sub> = 25°C, V <sub>DD</sub> = 3,3V or 2,8V or 2,5V, C <sub>L</sub> = 15 pF					
Parameter <i>parameter</i>	Bedingungen <i>conditions</i>	Frequenzbereich <i>frequ. Range (MHz)</i>	Spezifikationen <i>specifications</i>		
			EMS1BL 2,5V	EMQ1BL 2,8V	EMP1BL 3,3V
max. Stromaufnahme. <i>max. input current</i> I <sub>DD</sub>		1,800 ~ 32,000 32,000* ~ 50,000	1,5 mA max. 2,5 mA max.	2,0 mA max. 3,0 mA max.	2,5 mA max. 3,5 mA max.
Frequenzstabilität <i>frequency stability</i>	über alles *) all conditions *)	1,800 ~ 50,000	±25 ppm ~ ±100 ppm		
Tastverhältnis <i>symmetry</i>	@50% V <sub>DD</sub>		45/55%		
Ausgangsspannung <i>output voltage</i> V <sub>OL</sub> V <sub>OH</sub>	"0" level "1" level		10% V <sub>DD</sub> max. 90% V <sub>DD</sub> min.		
Anstiegszeit max. <i>rise time max.</i> T <sub>R</sub>	10%V <sub>DD</sub> to 90% V <sub>DD</sub>		12 ns		
Abfallzeit max. <i>fall time max.</i> T <sub>F</sub>	90%V <sub>DD</sub> to 10% V <sub>DD</sub>		12 ns		
Ruhestrom max. <i>standby current max.</i>	"0" level		1 µA		
max. Belastbarkeit <i>max. driving ability</i>	CMOS		15 pF		
Startzeit max. <i>start-up time max.</i>	0,0 ~ V <sub>DD</sub>		10 ms		

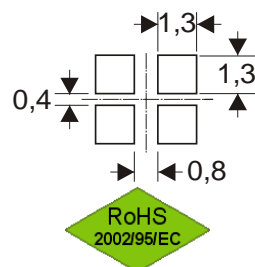
\*) Anmerkung: inkl. Abgleichtoleranz, Temperaturgang, Spannungs- und Laständerung, Alterung, Schock und Vibration  
note: incl. frequency and temperature tolerance, supply voltage and load change, aging, shock and vibration

Abmessungen in mm  
*dimensions in mm*



lead-free/RoHS-conformal

empfohlenes Layout  
*recommended solder pad layout*



Anschlußbelegung  
*pin connections*

#1	E/D
#2	V <sub>SS</sub>
#3	OUT
#4	V <sub>DD</sub>

Funktionstabelle  
*enable /disable function*

control (pad #1)	output (pad #3)
open	active
"1" (V <sub>IH</sub> ≥ 70% V <sub>DD</sub> )	active
"0" (V <sub>IL</sub> ≤ 30% V <sub>DD</sub> )	high Z