



M2065/M2066 Series

2.5x3.2 mm, LVPECL/LVDS SMT OSCILLATOR

FEATURES

LVPECL/LVDS Differential Output
RMS Phase Jitter < 100 fs, 12 kHz to 20 MHz,
(156.25 MHz, PECL output)
Low Phase Noise
Compliant to RoHS directive
Operating Voltage: 2.5/3.3 V

APPLICATIONS

10 Gigabit Ethernet switches/routers
Network Interface Card
Military Communications
Optical Transceiver

ORDERING INFORMATION

	M206x	2	4	B	P	N	00.0000 MHz
Product Series M2065 = 3.3 V M2066 = 2.5 V							
Temperature Range 1: 0°C to +70°C 6: -20°C to +70°C 2: -40°C to +85°C							
Stability 3: ± 100 ppm 4: ± 50 ppm 6: ± 25 ppm 8: ± 20 ppm							
Enable/Disable Function B: Enable High (Pad 1) G: Enable High (Pad 2) U: No Enable/Disable Function							
Output Type P: LVPECL L: LVDS							
Package/Lead Configurations N: Leadless Ceramic (6 Pad)							

Example Part Number: M206524BPN 156.2500 MHz

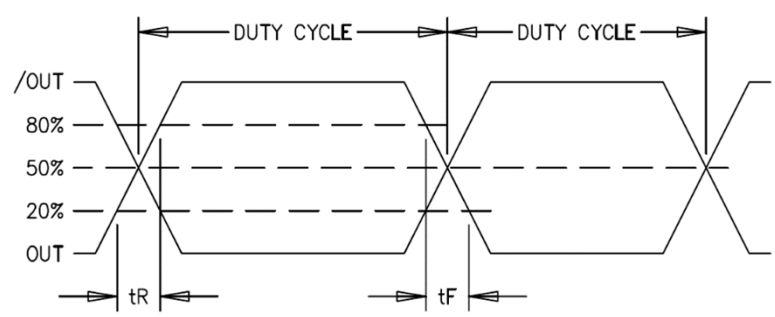
03/29/21 Rev. A

LVPECL ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency Range	F ₀	25		220	MHz	
Frequency Stabilities						
vs. Operating Temperature	ΔF/F	See ordering information			ppm	Includes initial tolerance @ +25°C, deviation over operating temperature, variations to supply voltage, load, vibration and shock.
vs. Aging		-5.0		+5.0	ppm	1st year
RF Output						
		LVPECL Compatible				
Output Load		50 Ω to (V _{CC} - 2) or equivalent				
Symmetry (duty cycle)	T _{DC}	45		55	%	@ 50% of waveform
Logic Level "1"		V _{CC} - 1.025		V _{CC} - 0.880		
Logic Level "0"		V _{CC} - 1.810		V _{CC} - 1.620		
Rise/Fall Time	T _R /T _F		0.2	0.4	ns	20% to 80% of waveform
Start-up Time	T _{SU}			10	ms	T _{ambient} = +25°C
Enable/Disable or Standby Logic		70% V _{CC} or N/C			V	Pad 1 or Pad 2 Outputs Enabled
				30% V _{CC}	V	Pad 1 or Pad 2 Outputs disabled to HIGH Impedance State, Oscillator Stops
Standby Current				30	uA	Outputs disabled
Other Parameters						
Phase Jitter (RMS)	Φ _J			0.100	ps	12 KHz to 20 MHz 156.25MHz

Operating Voltage and Current						
Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Operating Voltage	V _{CC}	3.135	3.300	3.465	V	M2065
		2.375	2.500	2.625	V	M2066
Operating Current	I _{CC}			75	mA	

OUTPUT WAVEFORM

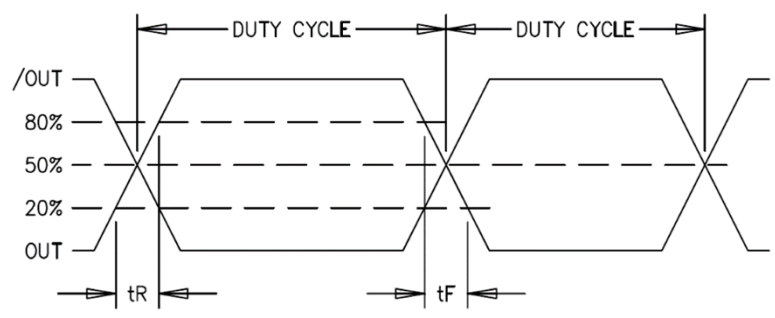


LVDS ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency Range	F ₀	25		220	MHz	
Frequency Stabilities						
vs. Operating Temperature	ΔF/F	See ordering information			ppm	Includes initial tolerance @ +25°C, deviation over operating temperature, variations to supply voltage, load, vibration and shock.
vs. Aging		-5.0		+5.0	ppm	1st year
RF Output						
		LVDS Compatible				
Output Load		100 Ω Differential				
Symmetry (duty cycle)	T _{DC}	45		55	%	@ 50% of waveform
Differential Output Voltage	V _{DIFF}	250	350	450	mV	peak-to-peak differential output voltage
Output Offset Voltage	V _{OS}	1.125	1.250	1.375	V	
Rise/Fall Time	T _R /T _F		0.2	0.4	ns	20% to 80% of waveform
Start-up Time	T _{SU}			10	ms	T _{ambient} = +25°C
Enable/Disable or Standby Logic		70% V _{CC} or N/C			V	Pad 1 or Pad 2 Outputs Enabled
				30% V _{CC}	V	Pad 1 or Pad 2 Outputs disabled to HIGH Impedance State, Oscillator Stops
Standby Current				30	uA	Outputs disabled
Other Parameters						
Phase Jitter (RMS)	Φ _J			0.150	ps	12 KHz to 20 MHz 156.25MHz

Operating Voltage and Current						
Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Operating Voltage	V _{CC}	3.135	3.300	3.465	V	M2065
		2.375	2.500	2.625	V	M2066
Operating Current	I _{CC}			40	mA	

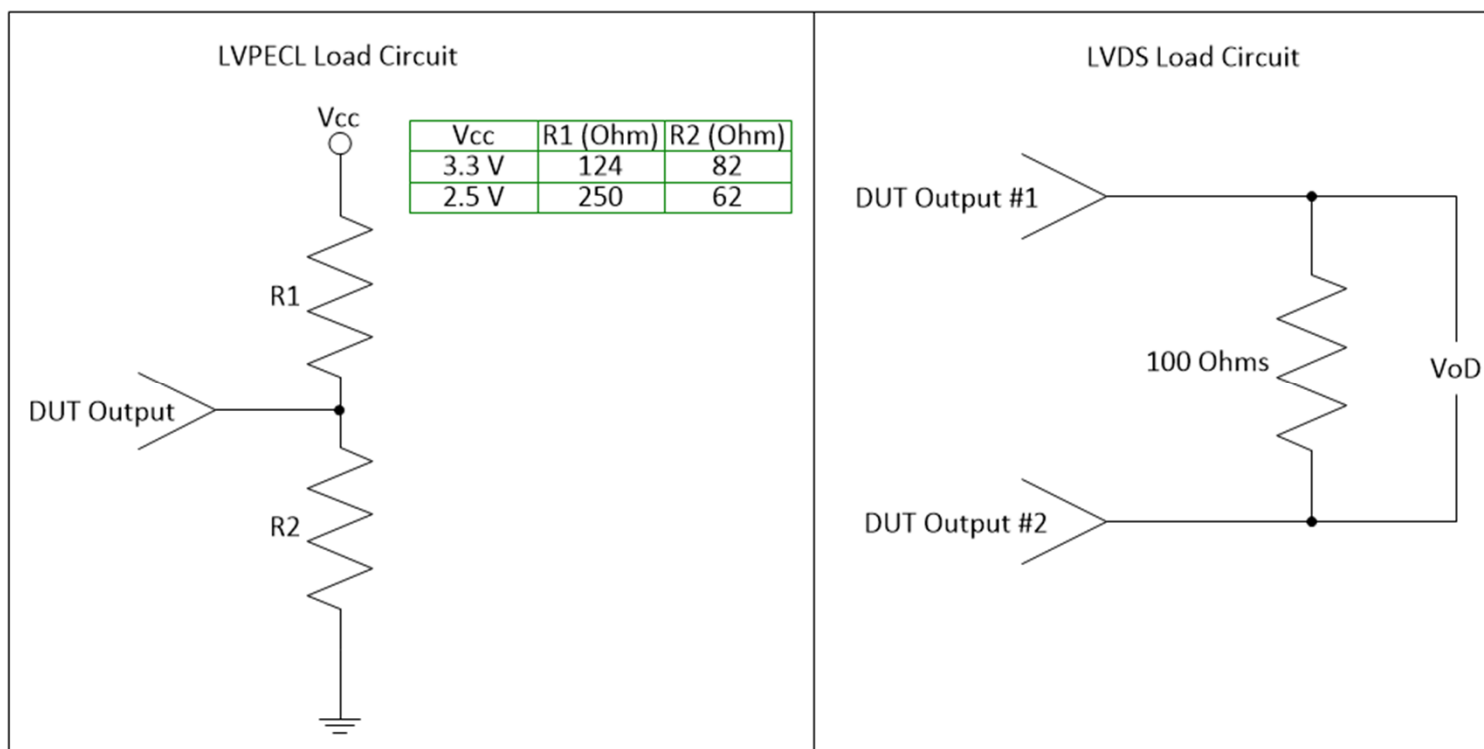
OUTPUT WAVEFORM



ENVIRONMENTAL CONDITIONS

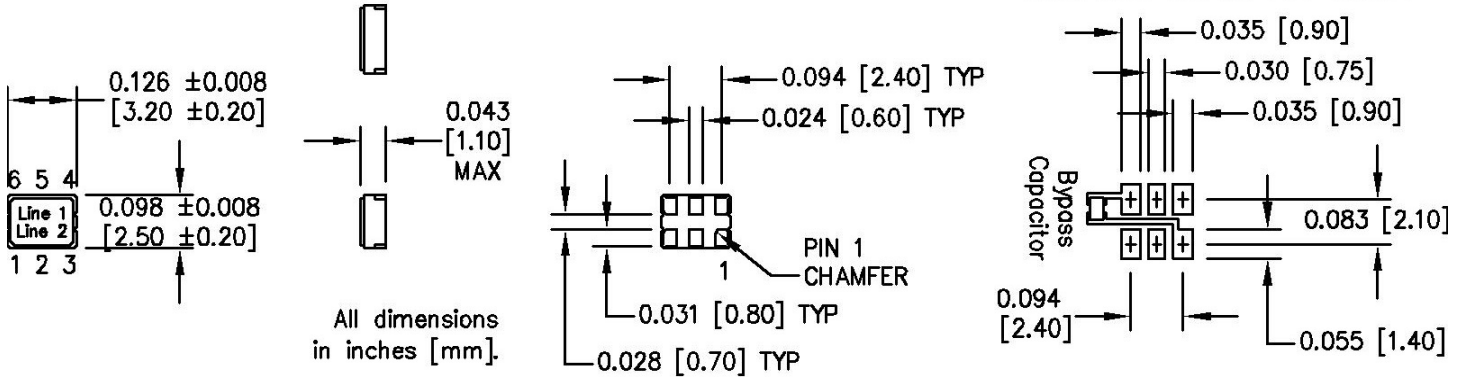
Temperature						
Operating Temperature	T _A	See ordering information			°C	
Storage Temperature	T _S	-55		+125	°C	
Shock	Per MIL-STD-202, Method 213, Condition C (100 g's, 6 ms duration, ½ sinewave)					
Vibration	Per MIL-STD-202, Methods 201 & 204 (10 g's from 10-2000 Hz)					
Solderability	Per EIAJ-STD-002					
Hermeticity	Per MIL-STD-202, Method 112 (1 x 10 ⁻⁸ atm cc/s of helium)					
Thermal Cycle	Per MIL-STD-883, Method 1010, Condition B (-55°C to 125°C, 15 min. dwell, 10 cycles)					

LOAD CIRCUIT DIAGRAMS

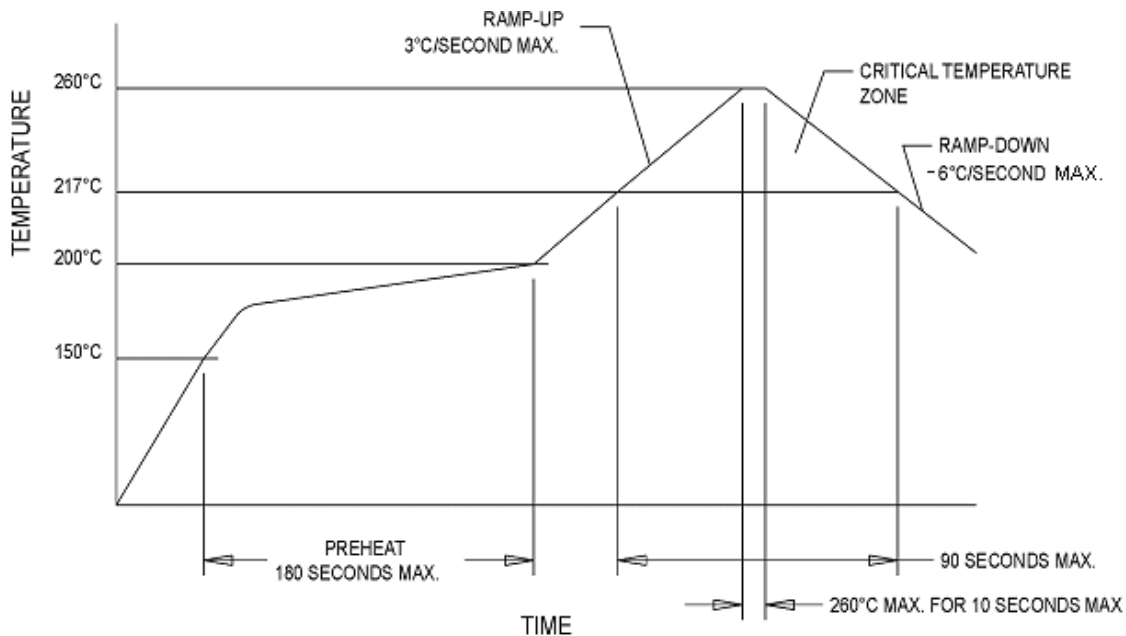


MECHANICAL AND PIN OUT INFORMATION

Pad	Function
1	Enable/Disable or N/C
2	Enable/Disable or N/C
3	Ground
4	Output Q
5	Output \bar{Q}
6	Supply +Vcc

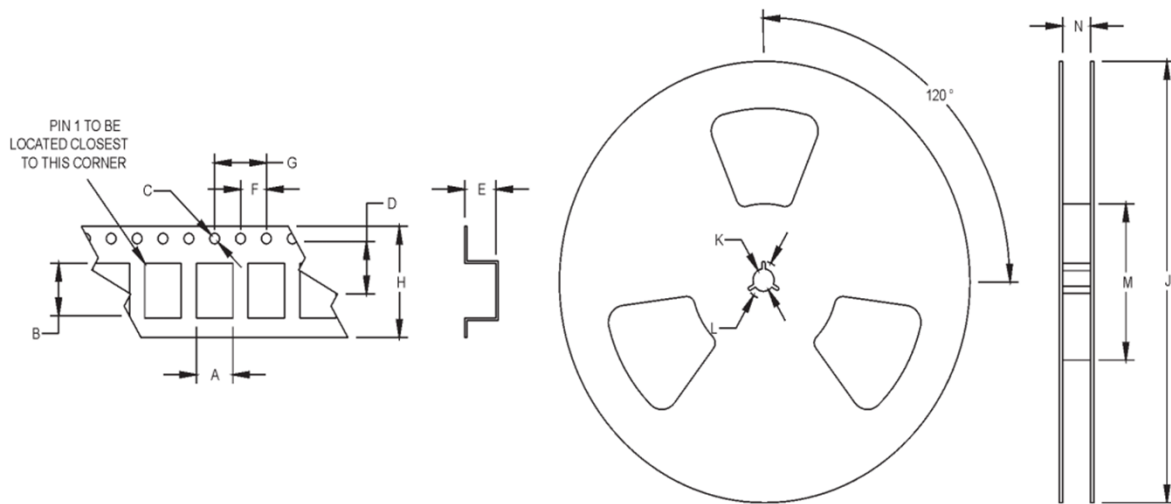


LEAD FREE SOLDER PROFILE



TAPE AND REEL SPECIFICATIONS

All units in mm



A	B	C	D	E	F	G	H	J	K	L	M
2.79	3.56	1.5	3.5	1.25	4	4	8	178	13.5	24.8	80

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