

ULTRA LOW JITTER OSCILLATOR

■ FEATURES

- Output frequency from 50MHz to 1000MHz
- Ultra low jitter of 45fs (12KHz to 20MHz)
- Available in LVDS / CML / LVPECL / HCSL outputs
- 2.5x2.0 or 3.2x2.5 LGA package
- 1.8V / 2.5V/ 3.3V supply

■ ELECTRICAL CHARACTERISTICS

Parameters	Symbol	Min.	Typ.	Max.	Unit	Condition
Output Frequency Range	F_CLK	50	–	1000	MHz	
Frequency Stability	F_STAB	-25	–	+25	ppm	-40°C to 85°C
		-30	–	+30	ppm	-40°C to 105°C
Operating Temperature Range	T_USE	-40	–	+105	°C	
Supply Voltage	VDD	1.8		3.3	V	
Current Consumption	IDD		85		mA	LVDS output
			100		mA	CML / LVPECL / HCSL output
Startup Time	tOSC			10	ms	Time from 0.9xVDD until output frequency (FCLK) within spec
Duty Cycle	DC	45		55	%	20% to 80% Vp-p
Rise / Fall Time	TR / TF			200	ps	
LVDS Output Level	Vo	0.5	0.7	0.9	V	AC Mode Swing (Diff)
CML Output Level	Vo	0.7	0.85	1.0	V	AC Mode Swing (Diff)
LVPECL Output Level	Vo	0.7	0.85	1.0	V	AC Mode Swing (Diff)
HCSL Output Level	Vo	0.7	0.85	1.0	V	AC Mode Swing (Diff)
RMS Phase Jitter			45		fs	(12KHz ~ 20MHz)

■ TYPICAL PHASE NOISE VDD=1.8V/2.5V/3.3V ±5%, TA=25°C, LVDS OUTPUT

Offset frequency	491.52 MHz	312.50 MHz	156.25 MHz	Unit
1 KHz	-102	-102	-107	dBc/Hz
10 KHz	-129	-132	-138	dBc/Hz
100 KHz	-143	-148	-152	dBc/Hz
1 MHz	-150	-153	-158	dBc/Hz
10 MHz	-151	-155	-159	dBc/Hz
20 MHz	-151	-156	-159	dBc/Hz

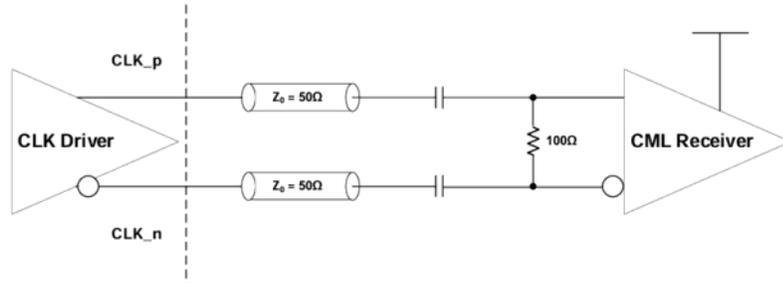
■ ABSOLUTE MAXIMUM RATINGS

Parameter	Min	Max	Unit
1.8V/2.5V/3.3V Supply Voltage	-0.3	3.63	V
Storage Temperature	-55	150	°C
Soldering Temperature		260	°C
Junction Temperature		150	°C
ESD (HBM)		2000	V

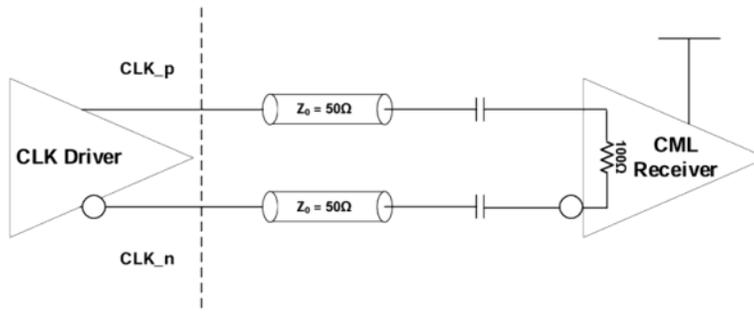
Note: Stresses that exceed what is listed in this table may cause permanent damage to the device.
Exposure to conditions above the recommendations for extended periods of time may affect device reliability.

■ OUTPUT TERMINATIONS

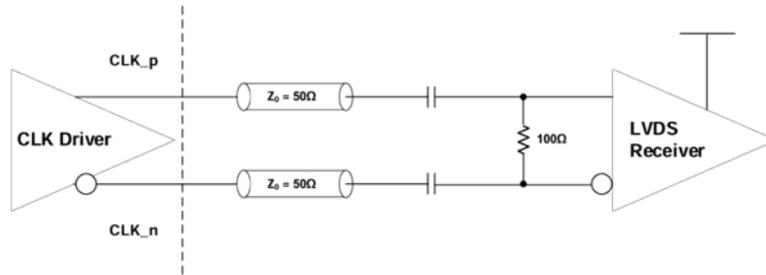
AC-COUPLED CML



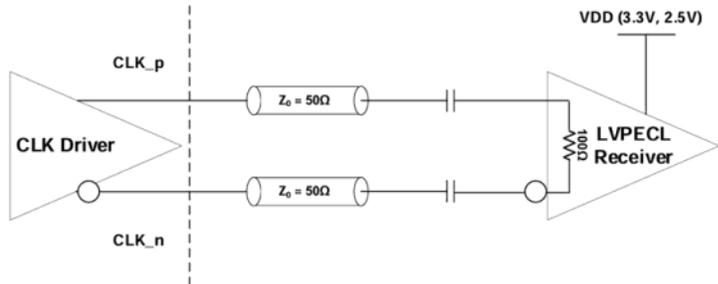
AC-COUPLED CML
(INTERNAL TERMINATION)



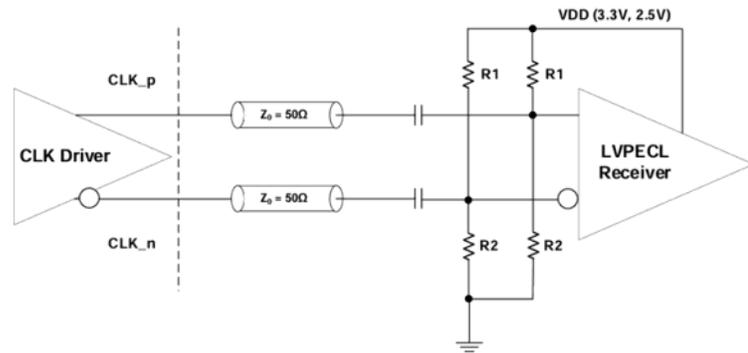
AC-COUPLED LVDS



AC-COUPLED LVPECL

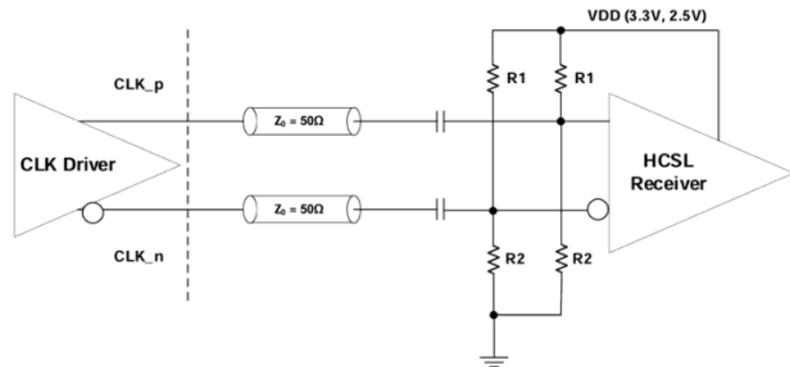


AC-COUPLED LVPECL
THEVENIN (TERMINATION)



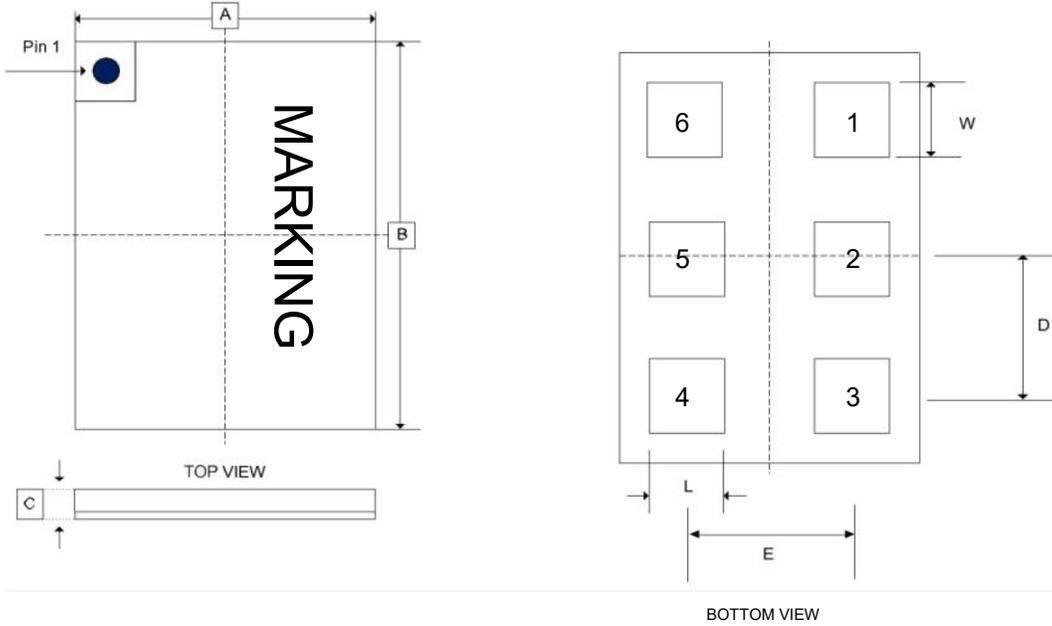
VDD	R1	R2
3.3V	127Ω	82.5Ω
2.5V	250Ω	62.5Ω

AC-COUPLED HCSL
THEVENIN (TERMINATION)



VDD	R1	R2
3.3V	220Ω	68Ω
2.5V	167Ω	71Ω
1.5V	100Ω	100Ω

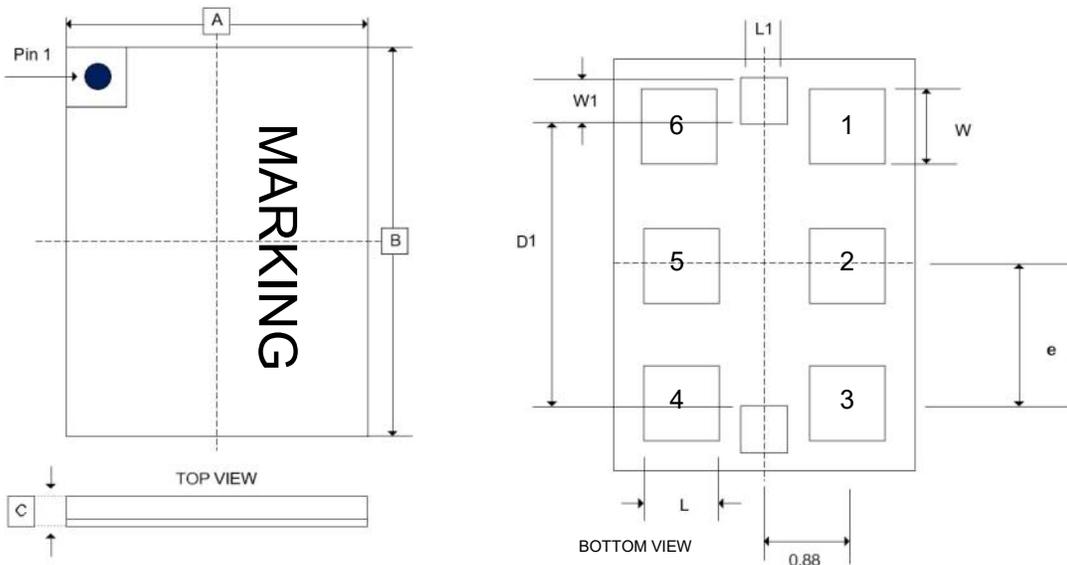
■ PACKAGE DIMENSIONS 2.5mm x 2.0mm



mm	Min	Nom	Max
A	2.0 BSC		
B	2.5 BSC		
C	1.25	1.3	1.35
L	0.55	0.6	0.65
W	0.35	0.40	0.45
D	0.85 BSC		
E	1 BSC		

PIN	FUNCTION
1	NC
2	NC
3	GND
4	OUTPUT
5	C. OUTPUT
6	VDD

■ PACKAGE DIMENSIONS 3.2mm x 2.5mm

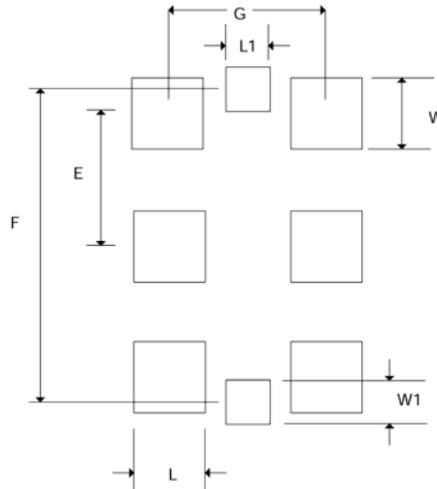
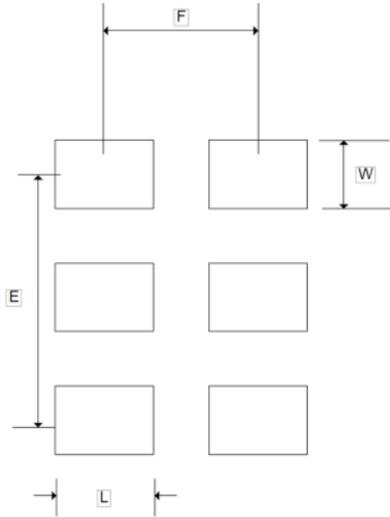


	Min	Nom	Max
A	2.5 BSC		
B	3.2 BSC		
C	1.25	1.3	1.35
W	0.55	0.6	0.65
L	0.5	0.55	0.6
W1	0.35	0.4	0.45
L1	0.35	0.4	0.45
e	1.1 BSC		
D1	2.2 BSC		

PIN	FUNCTION
1	NC
2	NC
3	GND
4	OUTPUT
5	C. OUTPUT
6	VDD

■ SOLDER PATTERN 2.5mm x 2.0mm

■ SOLDER PATTERN 3.2mm x 2.5mm



mm	2.5x2.0	3.2x2.5
L	0.75	0.7
W	0.55	0.7
L1		0.5
W1		0.55
E	1.7	1.1
F	1.0	2.6
G		1.76

■ PART NUMBERING GUIDE

