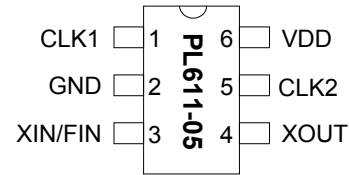


Programmable Quick Turn Clock™

FEATURES

- Advanced programmable PLL design
- Very low Jitter and Phase Noise (30-70ps Pk-Pk typical)
- Up to 2 programmable outputs
- Output frequency up to 35MHz CMOS.
- Accepts Crystal clock input
 - Fundamental crystal: 10MHz-30MHz
 - Reference input: Up to 100MHz
- Single 2.5V or 3.3V ± 10% power supply
- Operating temperature range from -40°C to 85°C
- Available in 6-pin SOT Green/RoHS compliant Pkg.

PIN CONFIGURATION



SOT-23

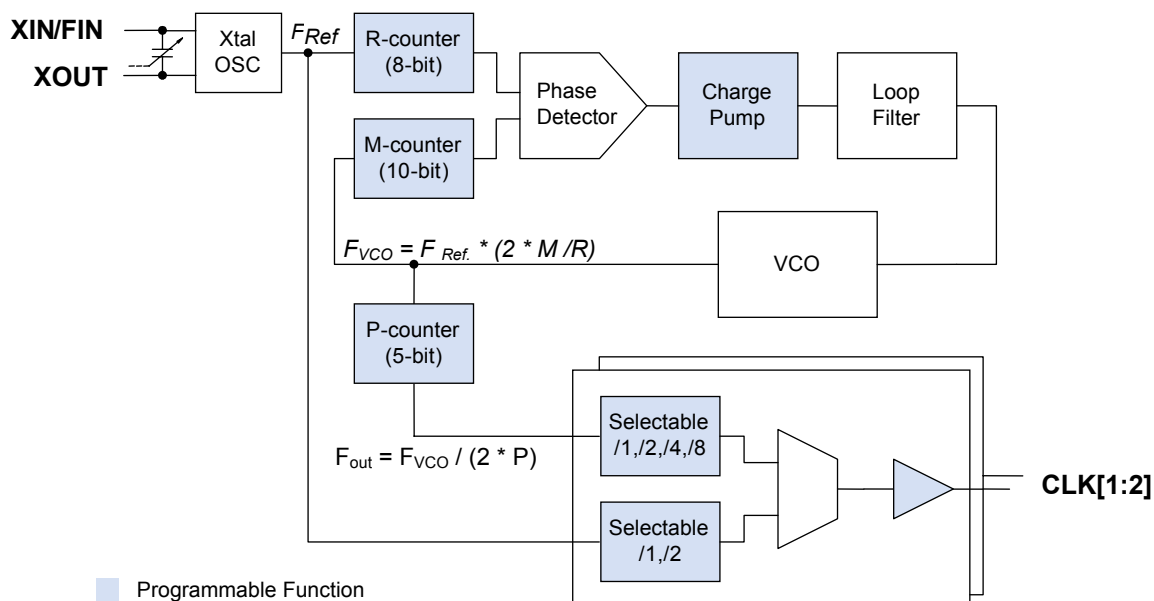
DESCRIPTION

The PL611-05 is a low-cost general purpose frequency synthesizer and a member of PhaseLink's Programmable 'Quick Turn Clock (QTC)' family. PhaseLink's PL611-05 offers generating two system clock frequencies of up to 35MHz from a 10-30MHz fundamental crystal or a Reference clock source. Cascading of the ICs to produce additional clock frequencies is also supported.

PIN DESCRIPTION

Name	Pin #	Type	Description
CLK1	1	O	Programmable Clock Output
GND	2	P	GND connection
XIN/FIN	3	I	Crystal or Ref. input pin
XOUT	4	O	Crystal output pin
CLK2	5	B	Programmable Clock or Reference Output
VDD	6	P	VDD connection

BLOCK DIAGRAM



Programmable Quick Turn Clock™
ELECTRICAL SPECIFICATIONS
ABSOLUTE MAXIMUM RATINGS

PARAMETERS	SYMBOL	MIN.	MAX.	UNITS
Supply Voltage Range	V _{DD}	-0.5	4.6	V
Input Voltage Range	V _I	-0.5	V _{DD} +0.5	V
Output Voltage Range	V _O	-0.5	V _{DD} +0.5	V
Soldering Temperature (Green package)			260	°C
Data Retention @ 85°C		10		Year
Storage Temperature	T _S	-65	150	°C
Ambient Operating Temperature		-40	85	°C

Exposure of the device under conditions beyond the limits specified by Maximum Ratings for extended periods may cause permanent damage to the device and affect product reliability. These conditions represent a stress rating only, and functional operations of the device at these or any other conditions above the operational limits noted in this specification is not implied.

AC SPECIFICATIONS

PARAMETERS	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Crystal Input Frequency(XIN)	Fundamental Crystal	10		30	MHz
Input (FIN) Frequency				100	MHz
Input (FIN) Signal Amplitude	Internally AC coupled	0.9		V _{DD}	V _{pp}
Settling Time	At power-up (after V _{DD} increases over 1.62V)			10	ms
Output Rise Time	15pF Load, 10/90%V _{DD} , Standard drive		2.5	3.5	ns
	15pF Load, 10/90%V _{DD} , High drive		1.0	1.5	ns
Output Fall Time	15pF Load, 90/10%V _{DD} , Standard drive		2.5	3.5	ns
	15pF Load, 90/10%V _{DD} , High drive		1.0	1.5	ns
Duty Cycle	At V _{DD} /2	45	50	55	%
Period Jitter, peak-to-peak* (measured from 10,000 samples)	With capacitive decoupling between V _{DD} and GND. Operating only one output.		70		ps

* Note: Jitter performance depends on the programming parameters.

Programmable Quick Turn Clock™
DC SPECIFICATIONS

PARAMETERS	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Supply Current, Dynamic, with Loaded Outputs	I _{DD}	At 10MHz, load=15pF			15	mA
Operating Voltage	V _{DD}		2.25		3.63	V
Output Low Voltage	V _{OL}	I _{OL} = +4mA Standard drive			0.4	V
Output High Voltage	V _{OH}	I _{OH} = -4mA Standard drive	V _{DD} - 0.4			V
Output Current, Standard drive	I _{OSD}	V _{OL} = 0.4V, V _{OH} = 2.4V			10.7	mA
Output Current, High drive	I _{OHD}	V _{OL} = 0.4V, V _{OH} = 2.4V			24	mA
Short-circuit Current	I _s			±50		mA

CRYSTAL SPECIFICATIONS

PARAMETERS	SYMBOL	MIN.	TYP.	MAX.	UNITS
Fundamental Crystal Resonator Frequency	F _{XIN}	10		30	MHz
Crystal Loading Rating (The IC can be programmed for any value in this range.)	C _{L (xtal)}	5	16*	20	pF
Maximum Sustainable Drive Level				500	μW
Operating Drive Level			100		μW
Crystal Shunt Capacitance	C ₀			6	pF
Effective Series Resistance, Fundamental, 10-30MHz	ESR			30	Ω

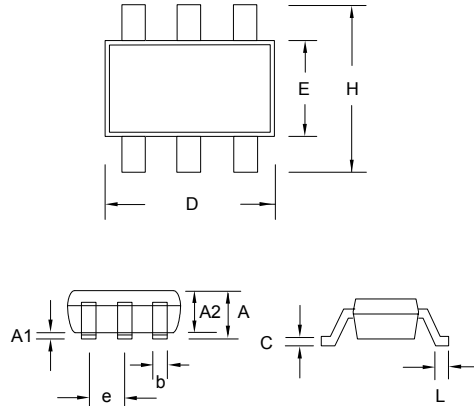
Note: C_L = 16pF is used when not specified. A detailed crystal specification document is also available for this part.

Programmable Quick Turn Clock™

PACKAGE DRAWINGS (GREEN PACKAGE COMPLIANT)

SOT-23 6L

Symbol	Dimension in MM	
	Min.	Max.
A	1.05	1.35
A1	0.05	0.15
A2	1.00	1.20
B	0.30	0.50
C	0.08	0.20
D	2.80	3.00
E	1.50	1.70
H	2.60	3.0
L	0.35	0.55
e	0.95 BSC	



ORDERING INFORMATION

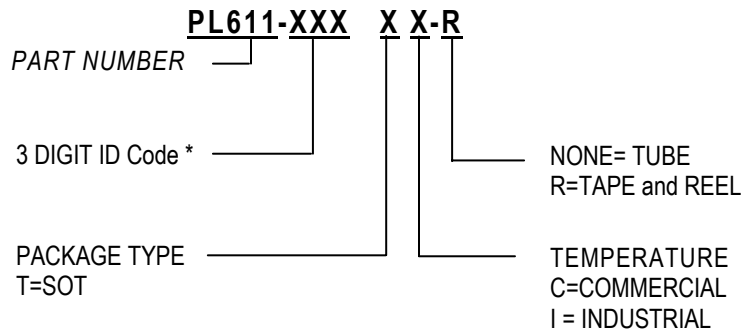
For part ordering, please contact our Sales Department:

47745 Fremont Blvd., Fremont, CA 94538, USA

Tel: (510) 492-0990 Fax: (510) 492-0991

PART NUMBER

The order number for this device is a combination of the following:
Device number, Package type and Operating temperature range



- * PhaseLink will assign a unique 3-digit ID code for each approved programmed part number.
- * PhaseLink offers Green Package Only for this product family.

Part / Order Number*	Marking	Package Option
PL611-05-XXXTC-R	C5XXX	6-Pin SOT-23 (Tape and Reel)

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