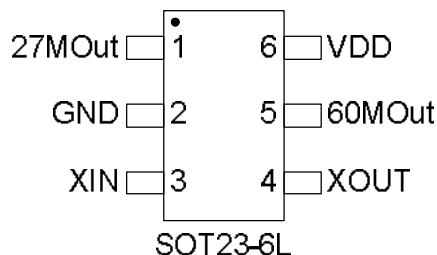


**Application Specific Quick Turn Clock™**  
**For use with Sigma Designs SMP8644 and SMP8654**

**FEATURES**

- Advanced Low Jitter PLL design
- Accepts a 27MHz Fundamental Crystal input
- Two LVCMOS Clock Outputs
  - 27MHz
  - 60MHz
- Single 3.3V  $\pm$  10% power supply
- Available in 6-pin SOT Green/RoHS compliant packages

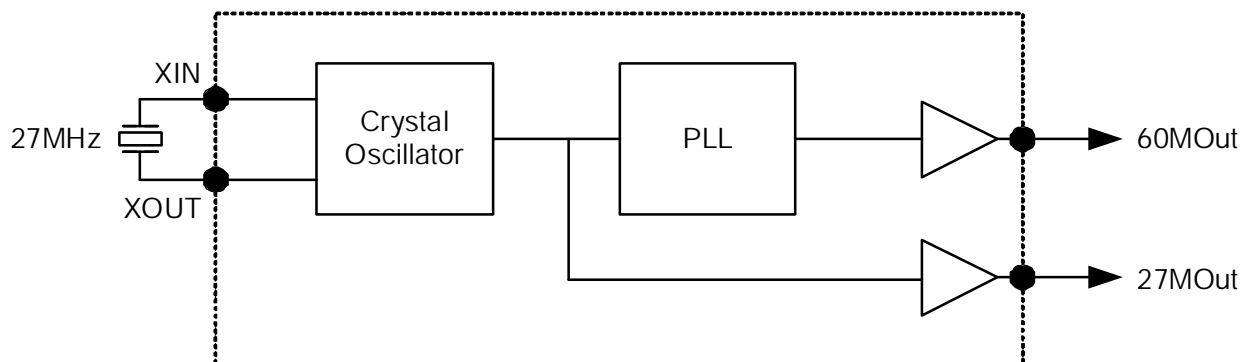
**PIN CONFIGURATION**



**DESCRIPTION**

The PL611-01-F93 is a member of PhaseLink's Quick Turn Clock™ Family. This device has been pre-configured to supply the clocking needs of products using the Sigma Designs SMP8644 and SMP8654 Secure Media Processors. The PL611-01-F93 provides two LVCMOS clock outputs from a single 27MHz fundamental crystal input saving both board space and cost when compared to competing solutions.

**BLOCK DIAGRAM**



**PIN DESCRIPTION**

| Name   | SOT-23 | Type | Description                      |
|--------|--------|------|----------------------------------|
| 27MOut | 1      | O    | 27MHz LVCMOS clock output        |
| GND    | 2      | P    | GND connection                   |
| XIN    | 3      | I    | 27MHz fundamental crystal input  |
| XOUT   | 4      | O    | 27MHz fundamental crystal output |
| 25MOut | 5      | O    | 60MHz LVCMOS clock output        |
| VDD    | 6      | P    | 3.3V power supply                |

## Application Specific Quick Turn Clock™

### For use with Sigma Designs SMP8644 and SMP8654

#### 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    |
| 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. \*Operating temperature is guaranteed by design. Parts are tested to commercial grade only.

##### GENERAL ELECTRICAL SPECIFICATIONS

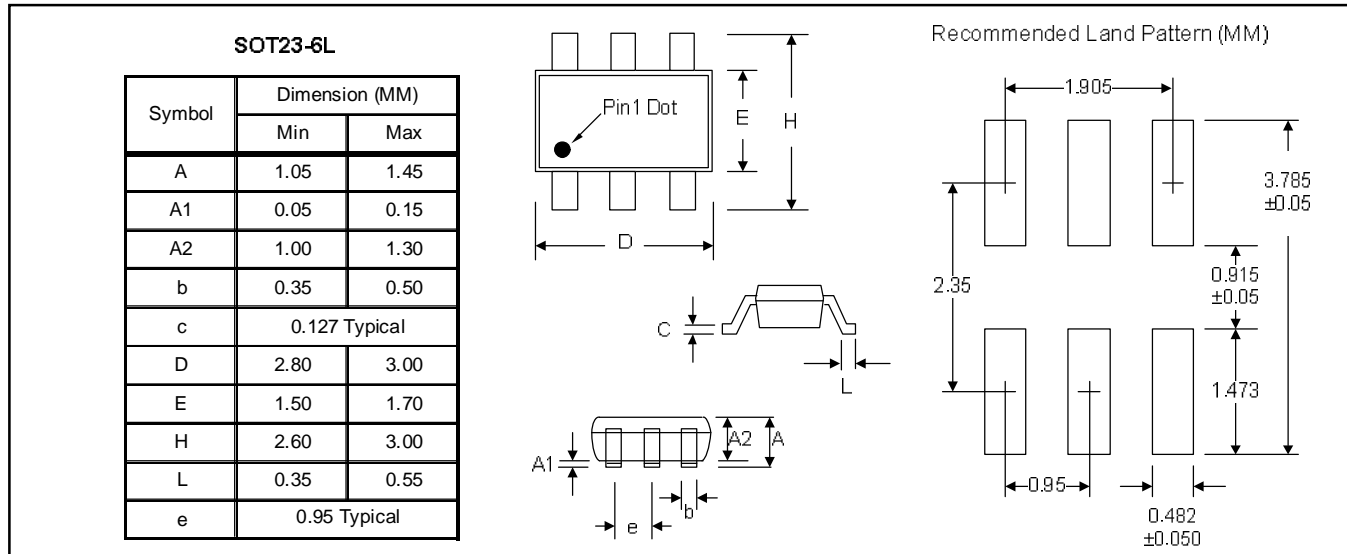
| PARAMETERS              | SYMBOL    | CONDITIONS                       | MIN.           | TYP. | MAX. | UNITS |
|-------------------------|-----------|----------------------------------|----------------|------|------|-------|
| Supply Current, Dynamic | $I_{DD}$  | Load= 15pF                       |                |      | 20   | mA    |
| Operating Voltage       | $V_{DD}$  |                                  | 2.97           |      | 3.63 | V     |
| Output Low Voltage      | $V_{OL}$  | $I_{OL} = +4mA$                  |                |      | 0.4  | V     |
| Output High Voltage     | $V_{OH}$  | $I_{OH} = -4mA$                  | $V_{DD} - 0.4$ |      |      | V     |
| Output Current          | $I_{OSD}$ | $V_{OL} = 0.4V, V_{OH} = 2.4V$   | 10             |      |      | mA    |
| Settling Time           |           | At power-up ( $V_{DD} > 2.97V$ ) |                |      | 2    | ms    |
| Output Rise Time        | $t_r$     | 15pF Load, 10/90% $V_{DD}$       |                | 2.5  | 3.5  | ns    |
| Output Fall Time        | $t_f$     | 15pF Load, 90/10% $V_{DD}$       |                | 2.5  | 3.5  | ns    |
| Duty Cycle              |           | At $V_{DD}/2$                    | 45             | 50   | 55   | %     |

##### CRYSTAL SPECIFICATIONS

| PARAMETERS                               | SYMBOL       | MIN. | TYP. | MAX. | UNITS |
|--|--------------|------|------|------|-------|
| Fundamental Crystal Resonator Frequency  | $F_{XIN}$    |      | 27   |      | MHz   |
| Crystal Loading Rating                   | $C_L (xtal)$ |      | 18   |      | pF    |
| Maximum Sustainable Drive Level          |              |      |      | 500  | μW    |
| Operating Drive Level                    |              |      | 100  |      | μW    |
| Crystal Shunt Capacitance                | $C_0$        |      |      | 6    | pF    |
| Effective Series Resistance, Fundamental | ESR          |      |      | 30   | Ω     |

**Application Specific Quick Turn Clock™**  
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**PACKAGE DRAWING (GREEN PACKAGE COMPLIANT)**



**ORDERING INFORMATION (GREEN PACKAGE COMPLIANT)**

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:  
Part number, Package type and Operating temperature range

**PL611-01-F93 T C X**

**Part Number**

**Shipping Option**

Blank=Tube

R=Tape & Reel

**Package**

**Temperature Range**

C=Commercial (0°C to

70°C)

| Part / Order Number | Marking      | Package Option               |
|---------------------|--------------|------------------------------|
| PL611-01-F93TC-R    | C1F93<br>LLL | 6-Pin SOT-23 (Tape and Reel) |

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