

# LP3917 CDMA Cellular Phone Power Management Unit

## General Description

LP3917 is a complete Power Management Unit designed for CDMA cellular phones. LP3917 PMU contains 9 low noise low dropout voltage regulators, 2 buck regulators, an USB Transceiver, two comparators and a high speed serial interface to program on/off conditions and output voltages of individual regulators, and to read status information of the PMU.

Buck regulators have an automatic switch to PFM mode at low load conditions allowing very good efficiency also at low output currents.

LDO regulators provide very low noise, 35  $\mu$ V typ, ideally suited for supplying voltage to RF section.

Two comparators can be used for detecting external accessories like ear plug etc.

LP3917 can use interrupt for alerting BB processor of status changes instead of using inefficient status polling.

## Key Specifications

- 3.0V to 5.5V Input Voltage Range
- 170 mV typ Dropout Voltage on LDO's @ 300 mA
- 2% (typ) Output Voltage accuracy on LDO's
- 35  $\mu$ V noise on LDO's
- 800/600 mA Buck regulators with 3% (typ) Accuracy and up to 90% efficiency

## Features

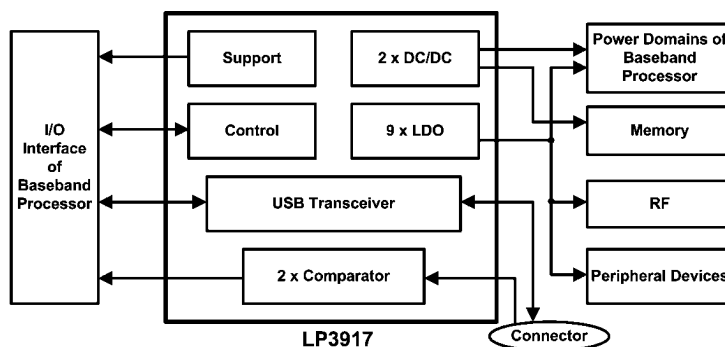
- Two high efficiency Synchronous Magnetic Buck Regulators,  $I_{OUT}$  800 mA and 600 mA
- High efficiency PFM mode @ low  $I_{OUT}$
- Auto Mode PFM/PWM switch
- Low inductance 2.2  $\mu$ H @ 2 MHz clock
- 9 Low Noise LDO's
  - 3 x 300 mA
  - 5 x 150 mA
  - 1 x 80 mA
- SW controllable LDO outputs
- USB 2.0 compatible Transceiver (12 Mbps)
- Thermal Shutdown with Early Warning Alarm
- Very low Sleep mode current
- Battery Voltage Monitor output
- Interrupt Request for reducing SW polling
- Ultra small 3.5x3.5 mm Micro SMDxt 49 bump package

## Applications

- CDMA Handsets

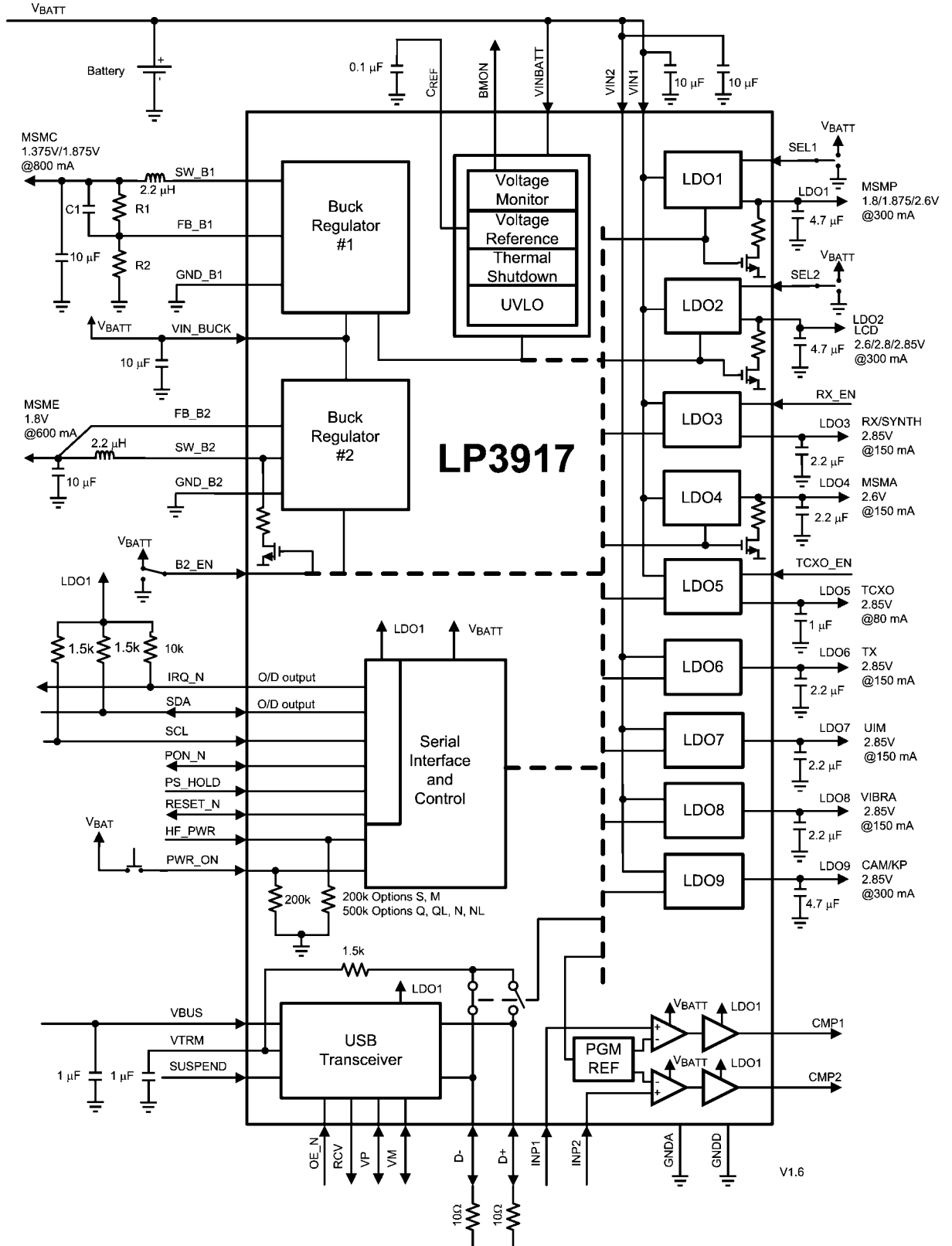
Please contact NSC Sales for a full datasheet for the device.

## System Diagram



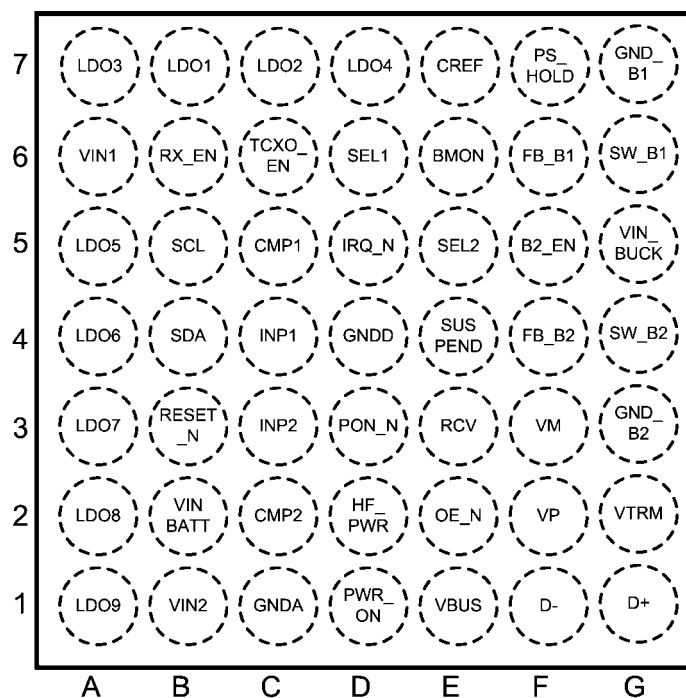
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# Typical Application Diagram



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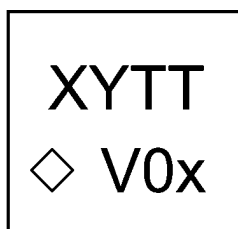
## Device Pin Diagram



TOP VIEW

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## Package Marking Information



XY = 2 Digit Date Code  
 TT = Die Traceability  
 V0x = LP3917 Product ID

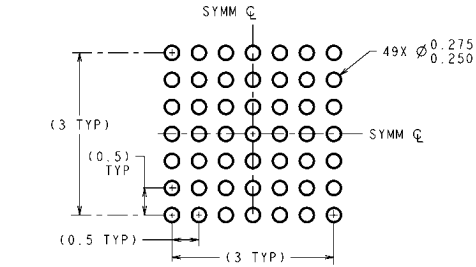
◇ = Pin 1A

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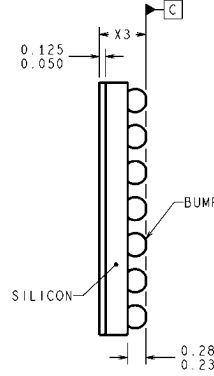
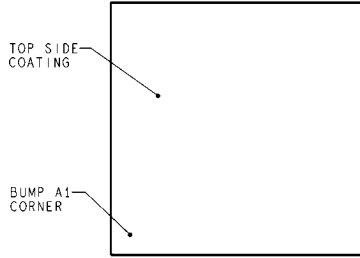
## Ordering Information

Startup	HF_PWR trigger	LK Option	Part Number	Package Marking	Supplied As	NSC Drawing
Sequential	Edge	No	LP3917RL-S	V01	250 units tape and reel	RLA49
			LP3917RLX-S		1000 units tape and reel	
Non-Sequential	Edge	No	LP3917RL-M	V05	250 units tape and reel	
			LP3917RLX-M		1000 units tape and reel	
Sequential	Level	No	LP3917RL-Q	V04	250 units tape and reel	
			LP3917RLX-Q		1000 units tape and reel	
Sequential	Level	Yes	LP3917RL-QL	V06	250 units tape and reel	
			LP3917RLX-QL		1000 units tape and reel	
Non-Sequential	Level	No	LP3917RL-N	V03	250 units tape and reel	
			LP3917RLX-N		1000 units tape and reel	
Non-Sequential	Level	Yes	LP3917RL-NL	V07	250 units tape and reel	
			LP3917RLX-NL		1000 units tape and reel	

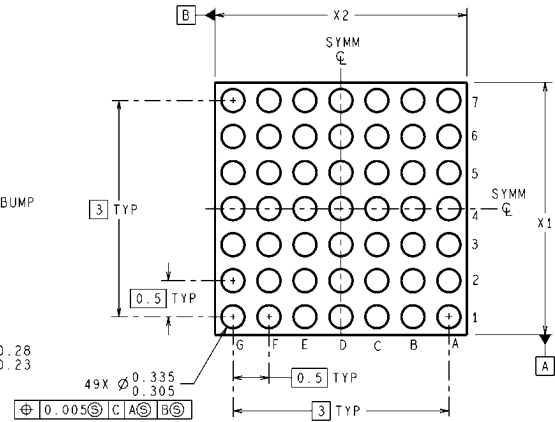
# Physical Dimensions inches (millimeters) unless otherwise noted



LAND PATTERN RECOMMENDATION



DIMENSIONS ARE IN MILLIMETERS  
DIMENSIONS IN ( ) FOR REFERENCE ONLY



**Micro SMDxt 49 Package**  
**NS Package Number MKT-RLA49AAA**  
**X1 = 3.465mm ± 0.030mm**  
**X2 = 3.465mm ± 0.030mm**  
**X3 = 0.650mm ± 0.075mm**

RLA49XXX (Rev B)

## Notes

## Notes

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