



## Tri-Output Programmable POS & NEG Voltage AMOLED Bias

### ■ General Description

OCP21351 is highly integrated power solution for AMOLED, especially on wearable devices. By taking the input supply voltage, 2.9V to 4.6V, from battery, OCP21351 generates the AVDD, OVDD, and OVSS outputs following the target settings.

OCP21351 is operated in either symmetry or asymmetry mode, which is defined by SAS pin. And this SAS pin should be fixed before OCP21351 starts operating, before EN goes High level.

In Symmetry mode, while SAS is set as Low level, the initial output voltages of AVDD, OVDD and OVSS are 3.3V, 3.3V and -2.2V respectively. In Asymmetry mode, while SAS is set as High, the initial output voltages of AVDD, OVDD and OVSS are 2.8V, 4.6V and -2.2V respectively.

OCP21351 also integrates Serial Data Interface for the flexibility of the various settings. However, only OVSS and AVDD setting is allowed to be changed in Asymmetry.

Under voltage lock out, short circuit protection, and thermal shutdown are all built in OCP21351.

The OCP21351 is available in WLCSP-21B package to achieve optimized solution for PCB space.

### ■ Features

- Input Supply Voltage Range: 2.9V to 4.6V
- SRL Interface Protocol
- AVDD: 2.8V (SAS = high) to 3.3V (SAS = low)
- OVDD default: 4.6V (SAS = high) or 3.3V (SAS = 0)
- OVSS: Programmable -0.6V to -5.0V
- SRL Idle Mode for Light Load Operation
- Protection: UVLO, UVP, OTP
- WLCSP-21B Package, 2.8mmx1.2mm

### ■ Applications

- 2-4' AMOLED Bias in Portable Device

■ **Pin Configuration**  
WLCSP-21B (Top View)

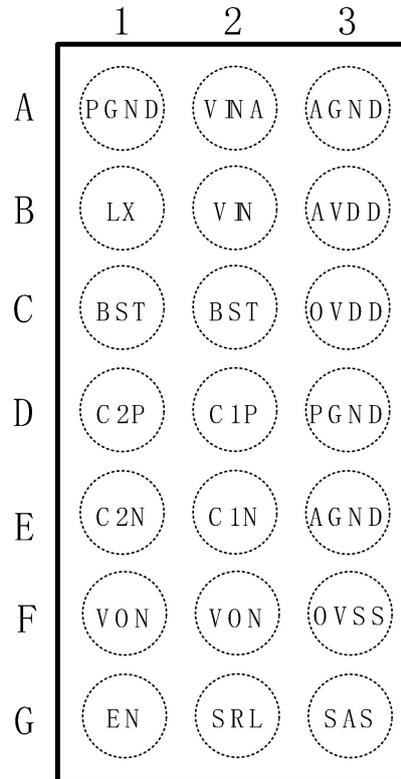
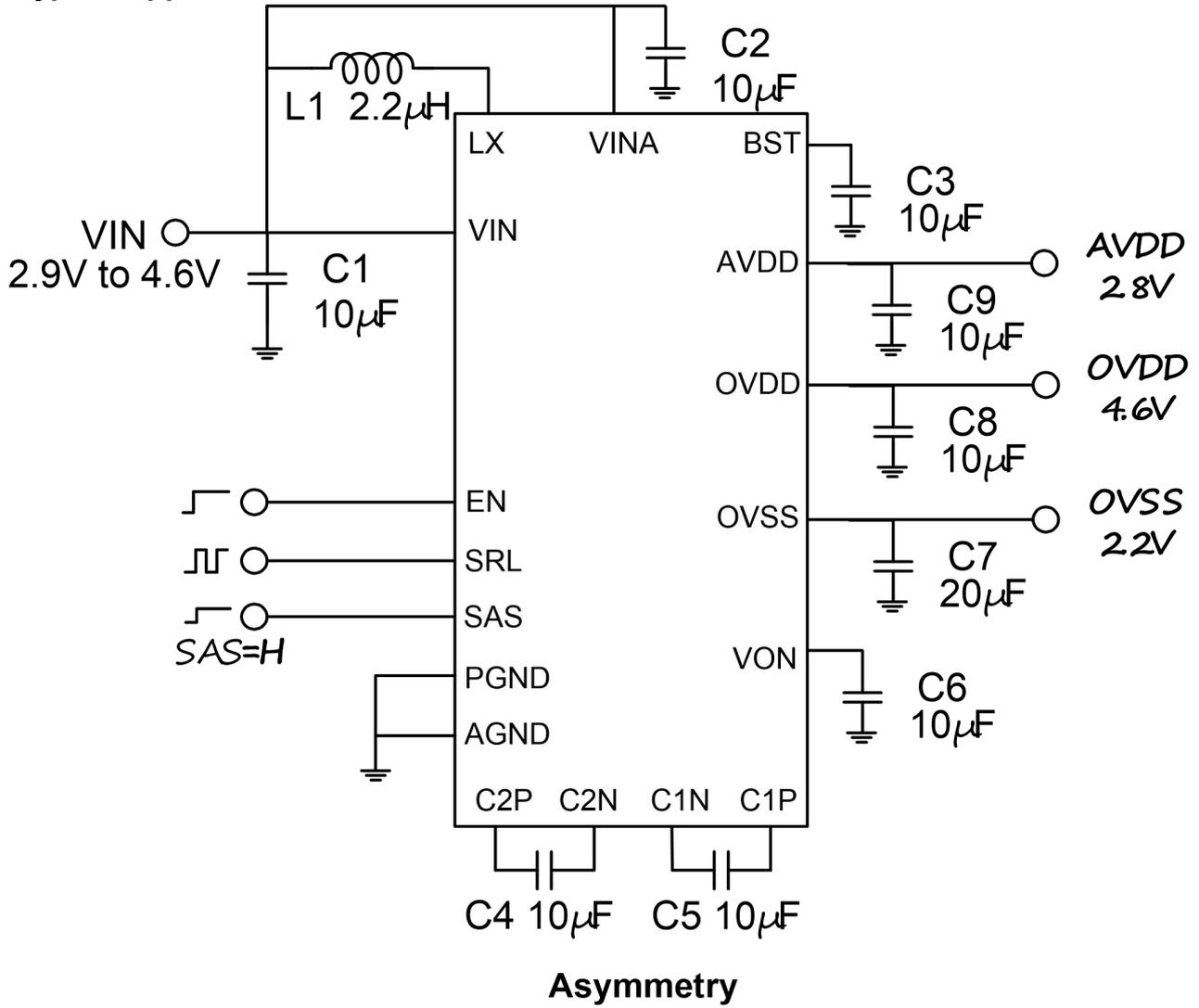


Figure 1, Pin Assignments of OCP21351

Pin Name	Pin No.	I/O	Pin Function
	WLCSP-21		
A1	PGND	-	Power Ground
A2	VINA	I	Power Supply Input for LDO1
A3	AGND	-	Analog Ground
B1	LX	I/O	Switching Node of Boost Regulator
B2	VIN	I	Power Supply Input
B3	AVDD	O	Output Voltage for Driver
C1	BST	O	Output of Boost Regulator
C2	BST	O	Output of Boost Regulator
C3	OVDD	O	Positive Output Voltage for OLED Bias
D1	C2P	I	Flying Capacitor Connection
D2	C1P	I	Flying Capacitor Connection
D3	PGND	-	Power Ground
E1	C2N	I	Flying Capacitor Connection
E2	C1N	I	Flying Capacitor Connection
E3	AGND	-	Analog Ground
F1	VON	O	Negative Charge Pump Output
F2	VON	O	Negative Charge Pump Output
F3	OVSS	O	Negative Output Voltage for OLED Bias
G1	EN	I	Enable Pin
G2	SRL	I	One-Pin Serial Interface Control
G3	SAS	I	Symmetry or Asymmetry Power Selected Pin



■ Typical Application Circuit



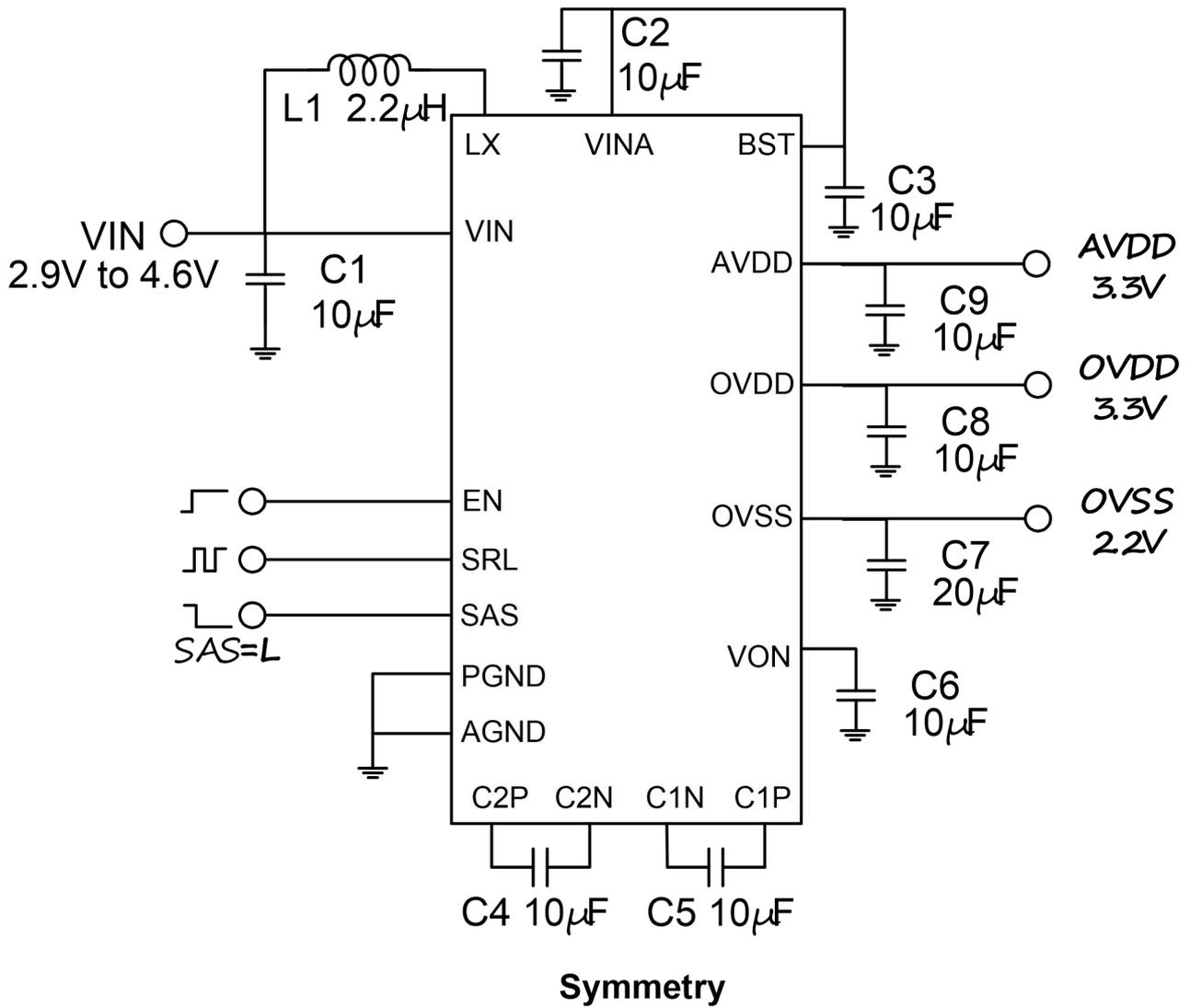


Figure 2, Typical Application Circuit of OCP21351



Block Diagram

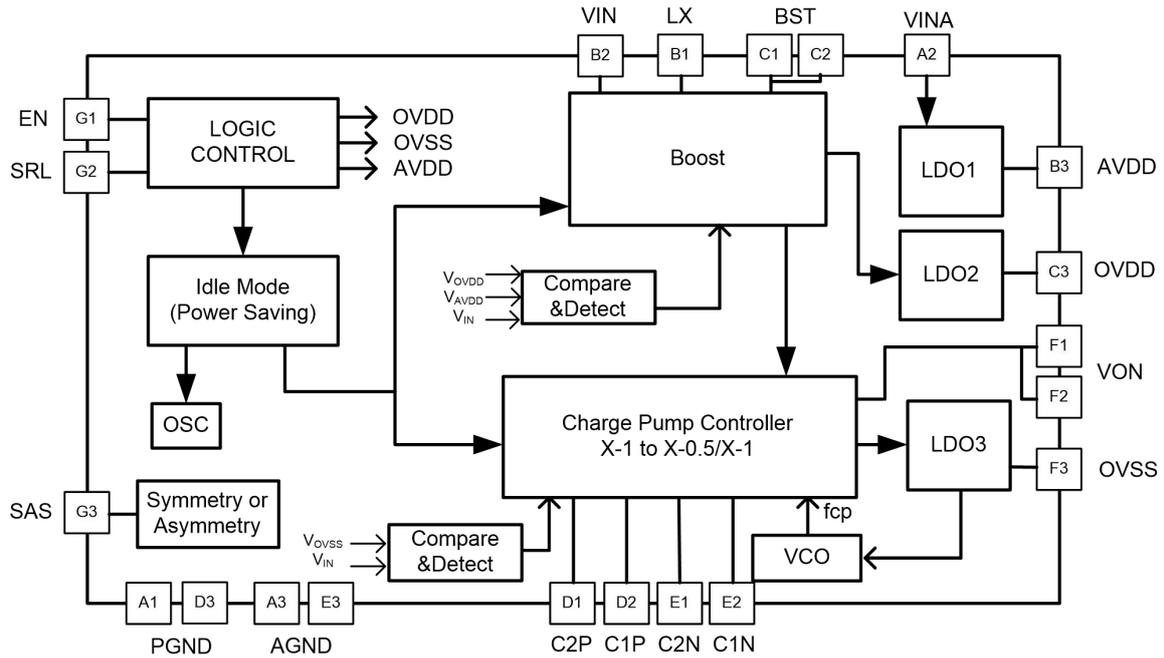


Figure 3, Block Diagram of OCP21351