

**SINGLE SUPPLY 12V SYNCHRONOUS PWM CONTROLLER  
WITH NMOS LDO CONTROLLER**

PRELIMINARY DATA SHEET

**DESCRIPTION**

The NX2305 controller IC is a combination synchronous Buck and LDO controller IC designed to convert single 12V supply to low cost dual on board supply applications. The synchronous controller is used for high current high efficiency step down DC to DC converter applications while the LDO controller in conjunction with an external low cost N ch MOSFET can be used as a very low drop out regulator in applications such converting 3.3V to 2.5V output. Internal UVLO keeps both regulators off until the supply voltage exceeds 9V where independent internal digital soft starts get initiated to ramp up both outputs. The switching section has hiccup current limit by sensing the Rdson of synchronous MOSFET. The LDO controller has Feedback Under Voltage Lock Out as a short circuit protection. Other features includes: 12V gate drive capability , Adaptive dead band control, Power good flag for the switcher controller and separate Enable pins for independent power sequencing.

**FEATURES**

- 12V PWM controller plus LDO controller
- Hiccup current limit by sensing Rdson of MOSFET
- 12V high side and low side driver
- Fixed internal 300kHz for switching controller
- Dual Independent Digital Soft Start Function
- Adaptive Deadband Control
- Enable pin available to program the Vbus UVLO
- Shut Down switching and LDO via pulling down EnSW or ENLDO pins

**APPLICATIONS**

- PCIe Graphic Card on board converters
- Mother board On board DC to DC applications
- On board Single Supply 12V DC to DC such as 12V to 3.3V, 2.5V or 1.8V
- Set Top Box and LCD Display

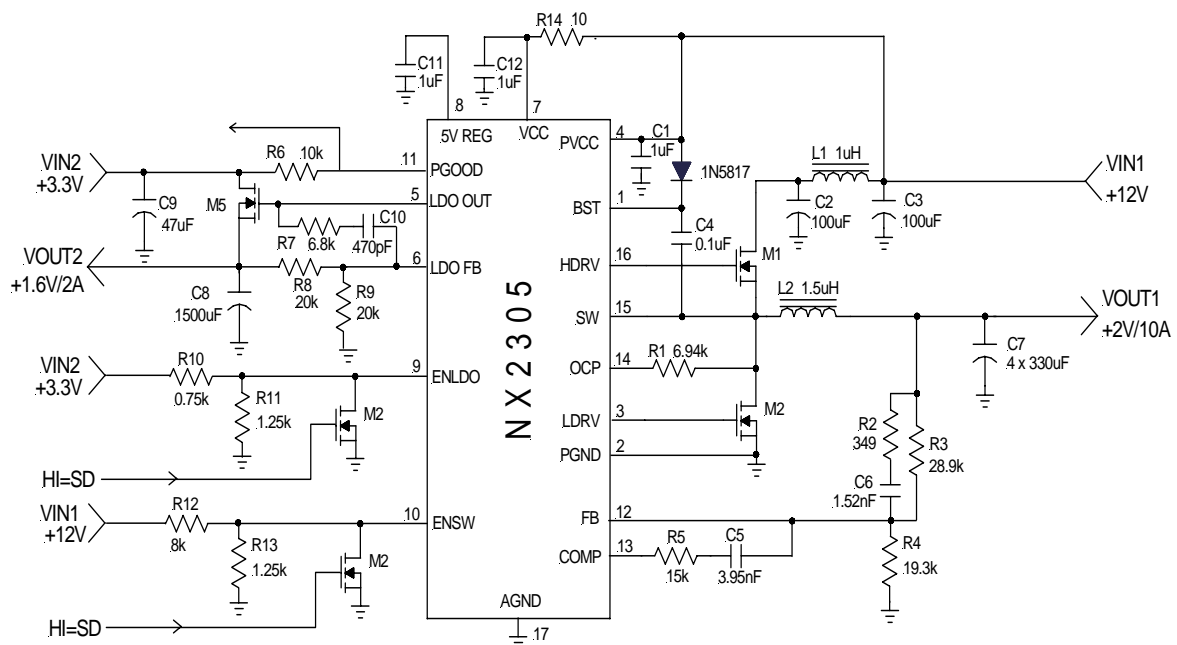
**TYPICAL APPLICATION**

Figure 1 - Typical application of 2305

**ORDERING INFORMATION**

Device	Temperature	Package	Frequency
NX2305CMTR	0 to 70°C	MLPQ-16L	300kHz
NX2305ACMTR	0 to 70°C	MLPQ-16L	600kHz