

## IP Data Sheet

### 10mA 3.3V Low-Dropout (LDO) Regulator

The TS\_VR\_3V3\_X8 is a 3.3V low-dropout linear regulator (LDO) to supply the digital core of an analog ASIC. The LDO operates with an input voltage of 5V (supply voltage) and provides an output regulated voltage of 3.3V. The LDO can supply a maximum DC load current of 10mA.

A functional block diagram of LDO components is shown in Fig. 1.

**Technology:** X-FAB XT018-0.18μm BCD-on-SOI CMOS

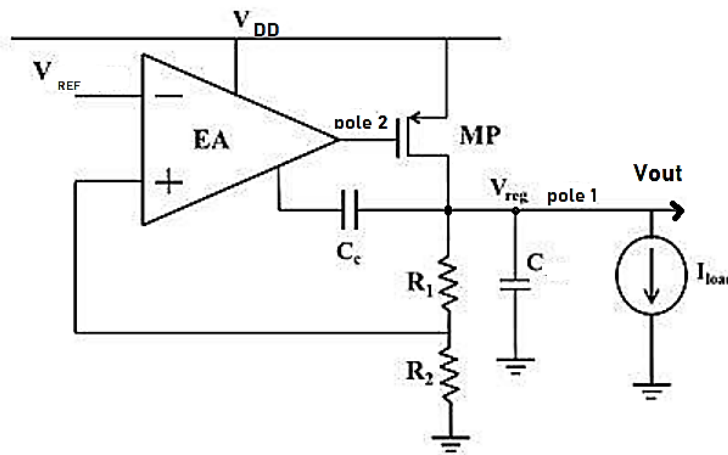


Fig. 1: 3V3 LDO Block Diagram

#### OPERATING CONDITIONS

Parameters	Values
Junction temperature range	0°C to 80°C
Supply voltage VDD	4.5V to 5.1V
Reference voltage VREF	2.5V
External load capacitor	70nF to 150nF
Load current ILOAD	10mA max

Table 1: 3V3 LDO Operation Conditions

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**SPECIFICATION**

Parameters	Values
Regulated DC output voltage	3.250V to 3.358V
Power Supply Rejection Ratio (PSRR) for f<10MHz	16.09dB min
Average supply current consumption (Excluding output current)	140µA max
Startup time	1.20ms max

Table 2: 3V3 LDO Specification

**APPLICATION NOTES**

The LDO is valid for supplying a digital circuit with 3.3V and its output voltage can sustain tough changes in load current resulting from the fast dynamic current consumption of the digital circuit. An external load/decouple capacitor of 100nF is used.

**LAYOUT VIEW**

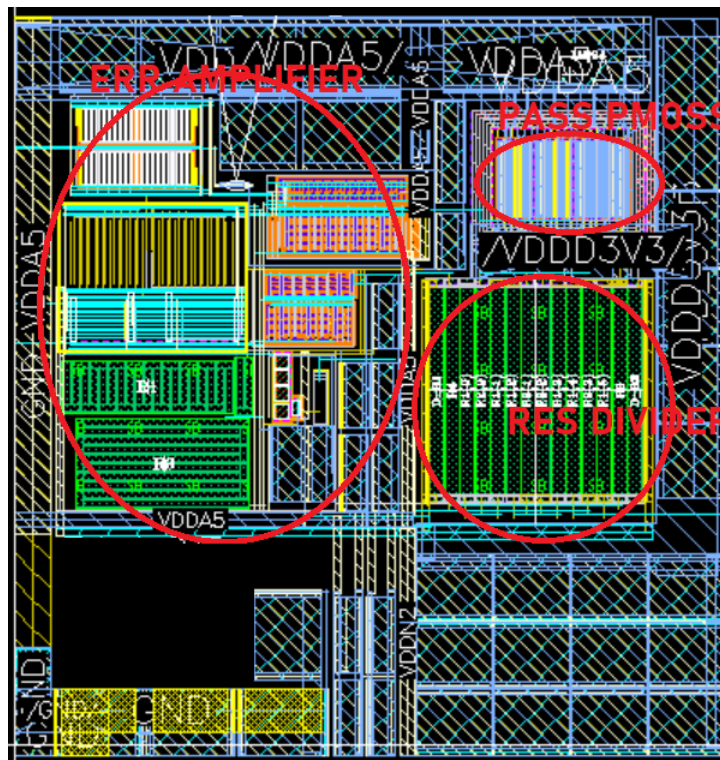


Fig. 2: 3V3 LDO Layout View