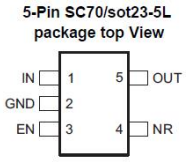
1. Applications

LCD monitor and LCD TV
MP3/MP4 player
DVD decoder
Mobile phone handset and PDAs, Tablets
Wireless LAN and Bluetooth
Digital Camera



2. Descriptions

The XDL200b family low-dropout regulators (LDO) are available in standard SC70/SOT-23-5L packages, part products are also available in DFN1x1-4 packages. Standard products are Pb-free and Halogen-free.

The XDL200b series offers fast start-up with high PSRR(power supply rejection) with 10nF noise reduction capcitor at condition of only 50 µA ground current. The family uses an advanced CMOS process to achieve very low noise, execellent transient response, and stable at no output load. The XDL200bq is stable with a 1-µF ceramic output capacitor and uses a precision voltage reference and feedback loop to achieve a worst-case accuracy of 3% over all load, line, process, and temperature variations. The device family is fully specified from TJ = –40°C to 125°C.

The XDL200b has an internal current limiter which also operates as a short circuit protection and an output current limiter at the output pin.

3. Features

Input Voltage: 2.5 V to 6.5 V
Available in Multiple Output Versions:
Fixed Output with Voltages: 1.0v, 1.2v, 1.5v, 1.8v, 2.0v, 2.5v, 2.8v, 3.0v, 3.3v, 4.0v, 4.5v, 5.0v, 5.5v
Adjustable Output Voltage from 1.0 V to 5.0 V
Ultra-High PSRR: – 70 dB/60dB/53dB/45dB at 1K/10K/100K/1MHz with 150mA load current
Excellent Load and Line Transient Response
Low Dropout: 180 mV typical at 150 mA
Low Noise: 50 µVRMS typical (100 Hz to 100 kHz)
Quick startup: reach 95% of Vout within 220us, with 1uF Cout and 10nF Cnr

4. Block digram

The XDL200b family provides high performance suitable for high precision analog and RF applications. Its very-low current consumption and low headroom (VIN – VOUT) features also make the XDL200b family suitable for battery-powered applications. Thermal-shutdown and overcurrent protection are aviliable for all productios.

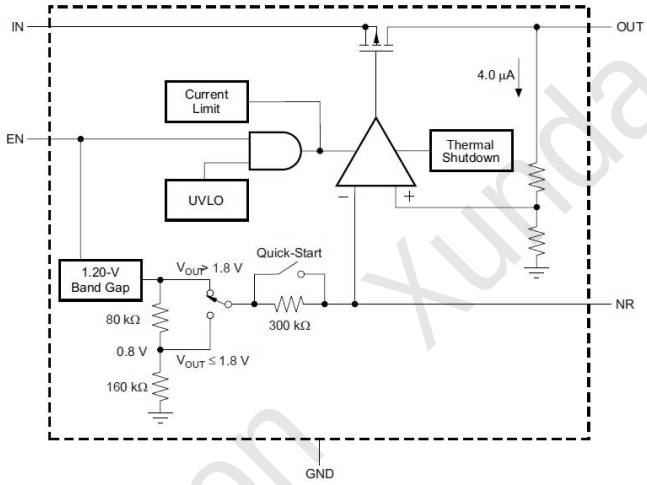


Figure 4.1 Fixed output voltage version

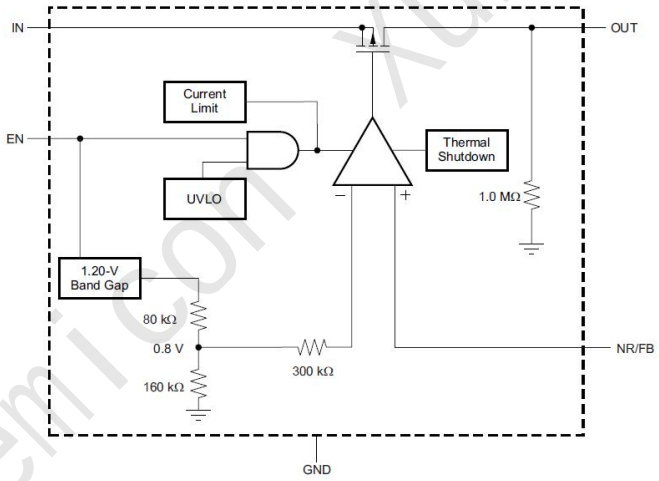


Figure 4.1 Adjustable output voltage version

5. Typical Applications

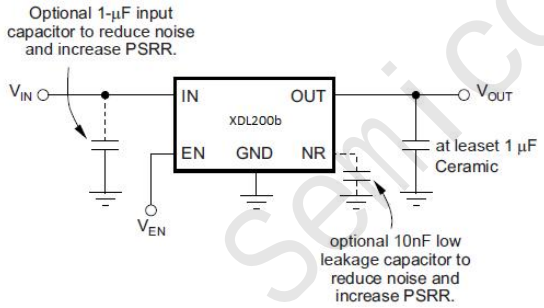


Fig 5.1 Typical application for fixed output

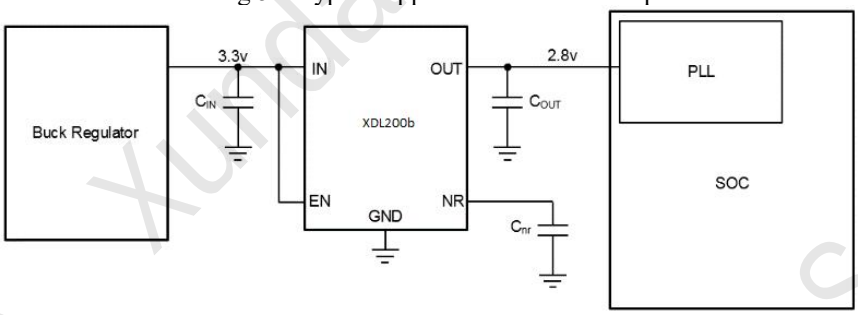


Fig 5.2 Typical application for powering a PLL in an SOC chip

Table 5.1 Pin descriptions:

PIN		IO	Comment
NAME	SOT		
EN	3	In	Chip select / Enable signal
FB	4	In	External voltage feedback for Error amplifier. Only used for Adjustable voltage version
GND	2	-----	Ground
IN	1	In	Input power supply. A 1uF ceramic capactor is optional
NR	4	-----	Optional noise reduction capactor, only used for fixed output version. When used, Cnr must be low leakage capcitor since Pin NR is high impedance, most ceramic capacitors are appropriate in this condation.
OUT	5	Out	LDO output, a minimal 1uF ceramic capactor is required for loop stability

6. Electrical Charastics

6.1 absolute Maximum rating

Pin/Parameters	Value	Unit
Power Dissipation	Internal limited	mA
Vin	-0.3 ~ 7.0	V
Ven	-0.3~Vin	V
Vout	-0.3~Vin	V
Lead Temperature Range	260	℃
Storage Temperature Range	-55 ~ 150	℃
Junction Temperature Range	150	℃

- Stresses beyond those listed under *Absolute Maximum Ratings* may cause permanent damage to the device. These are stress ratings only, which do not imply functional operation of the device at these or any other conditions beyond those indicated under *Recommended Operating Conditions*. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

6.2 ESD Protection

		Value	Unit
V(ESD) Electrostatic discharge	Human body model (HBM), per ANSI/ESDA/JEDEC JS-001	+/-2000	V
	Charged device model (CDM), per JEDEC specification JESD22-C101	+/-500	

6.3 Recommanded Operating Conditions

Pin/Parameters	Value	Unit
Ven	0~Vin	V
Vin	0 ~ 6.0	V
Vout	1.0~5.5	V
Iout	0~200	mA
Cout	1~100	uF
Junction Temperature Range	-40 ~ 125	℃

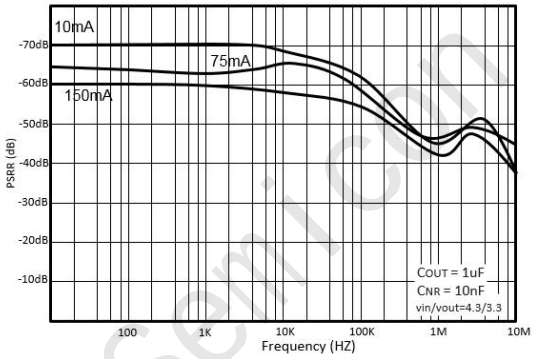
6.4 Electrical characteristic

(Ta=27℃, VIN=VOUT+1V, CIN=COUT=1uF, Cnr=10nF, unless otherwise noted)

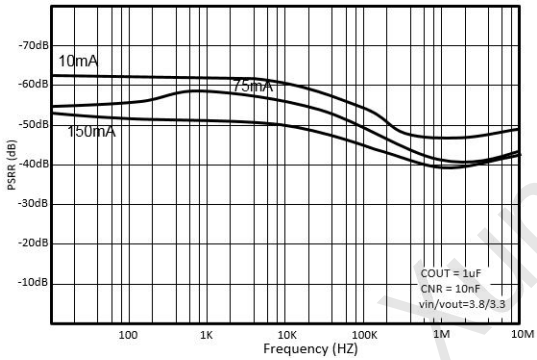
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output Voltage	V_{OUT}	V_{OUT} <2V, V_{IN}=2.7V, I_{OUT}=1mA	0.97*V_{OUT}	V_{OUT}	1.03*V_{OUT}	V
		V_{OUT}≧2V, I_{OUT}=1mA	0.98*V_{OUT}	V_{OUT}	1.02*V_{OUT}	
Current Limit	I_{LIM}	V_{EN}=V_{IN}		400		mA
Dropout Voltage	V_{DROP}	V_{OUT}=2.8V, I_{OUT}=150mA		180	200	mV
		V_{OUT}=2.8V, I_{OUT}=20mA		200	230	
Line Regulation	△V_{LINE}	V_{IN}=2.7~5.5V, I_{OUT}=1mA		0.01	0.15	%/V
Load Regulation	△V_{Load}	V_{OUT}=2.8V , I_{OUT}=1~200mA		20	30	mV
Quiescent Current	I_Q	V_{OUT}=2.8V, I_{OUT}=0	40	50	60	μA
Short Current	I_{SHORT}	V_{EN}=V_{IN}, V_{OUT} Short to GND with 1Ω			400	mA
Shut-down Current	I_{SHDN}	V_{EN}=0V			1.0	μA
Power Supply Rejection Rate	PSRR	V_{IN}=(V_{OUT}+1V)DC+0.5V_{P-P} F=1K Hz ,Iout=150mA		70		dB
		V_{IN}=(V_{OUT}+1V)DC+0.5V_{P-P} F=1M Hz ,Iout=150mA		45		
EN logic high voltage	V_{ENH}	V_{IN}=5.5V, I_{OUT}=1mA	1.4			V
EN logic low voltage	V_{ENL}	V_{IN}=5.5V, V_{OUT}=0V			0.4	V
EN Input Current	I_{EN}	V_{EN}= 0 to 5.5V			1.0	μA
Output Noise Voltage	eNO	100Hz to 100KHz, C_{OUT}=1μF		50		μV_{RMS}
T_startup	Tsu	Startup time for reaching 95% of Vout		220		uS
UVLO	Undervoltage Lockout Hysteresis	Vin rising		2.40		V
		Vin falling		2.20		
Tsd	Thermal shutdown	Shutdown, temperature increase		120		℃
		Reset, temperature decrease		90		

6.5 Typical Characteristics

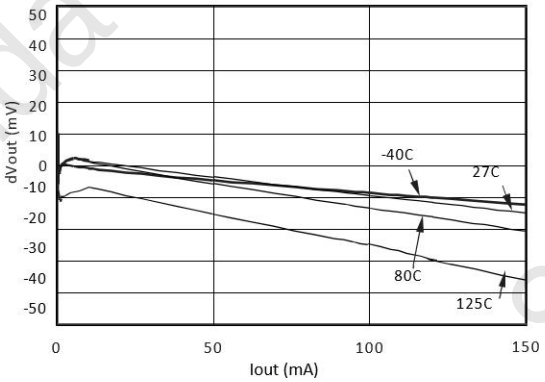
Over operation temperature range (Tj=-40℃ to 125℃), VIN=VOUT(nom)+0.5V or 2.8v, whichever is greater; Ven=Vin, COUT=1uF, Cnr=10nF, unless otherwise noted; Typical values are at Ta=27℃



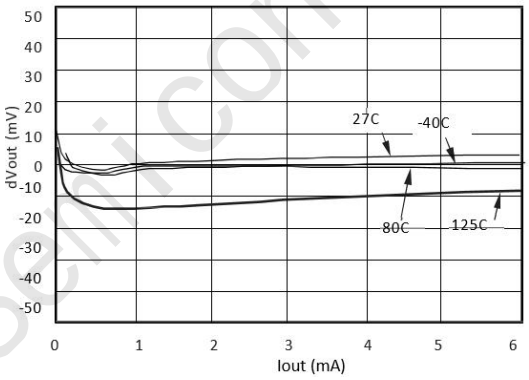
PSRR with 1uF Cout, Vin-Vout=1.0v



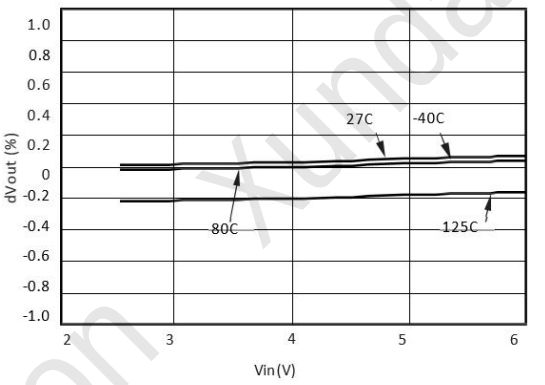
PSRR with 1uF Cout, Vin-Vout=0.5v



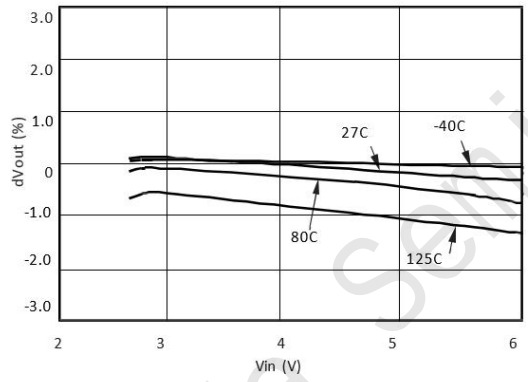
Load regulation



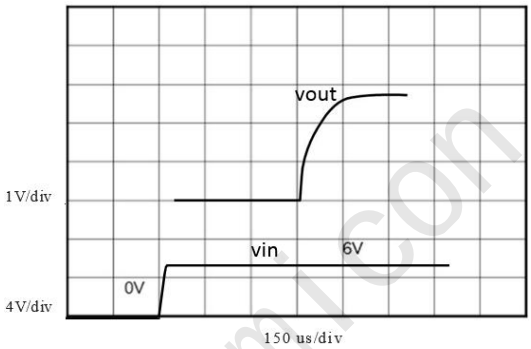
Load regulation under light load



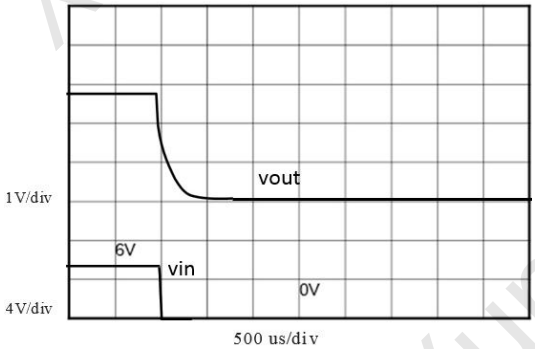
Line regulation with 1mA Iout



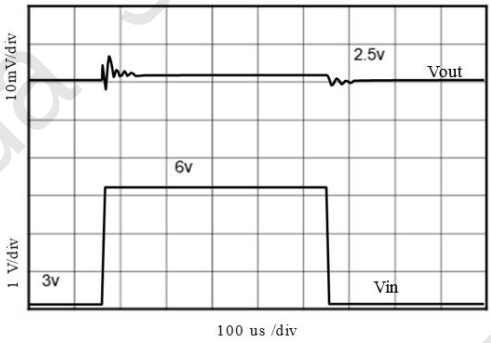
Line regulation with 150mA Iout



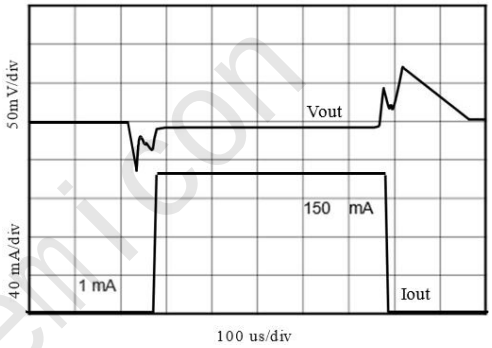
Power-up with 1uF Cout



Power-down with 1uF Cout

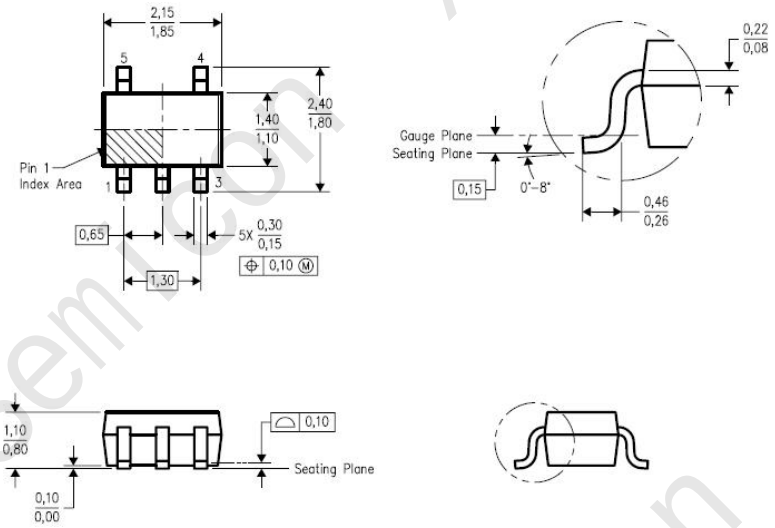


Line step with 1uF Cout & 10nF Cnr



Load step with 1uF Cout & 10nF Cnr

7. Package



Symbol	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	1.050	-	1.250
A1	0.000	-	0.100
A2	1.050	-	1.150
b	0.300	0.4	0.500
c	0.100	-	0.200
D	2.820	2.9	3.020
E	1.500	1.6	1.700
E1	2.650	2.8	2.950
e	0.950 (Basic)		
e1	1.800	1.9	2.000
L	0.300	0.45	0.600
θ	0^o	-	8^o

单击下面可查看定价，库存，交付和生命周期等信息

>>XDS(芯达盛)