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Very low drop voltage regulators with inhibit

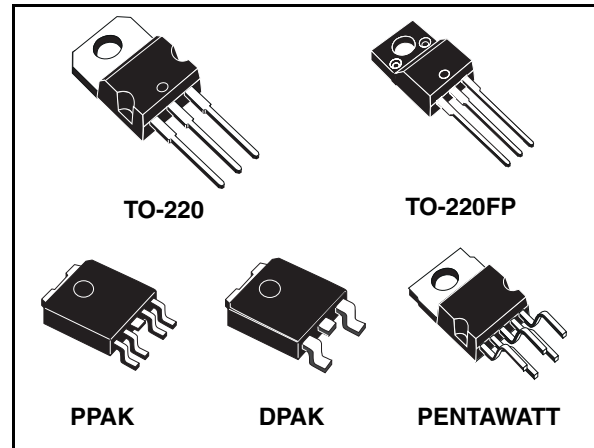
Features

- Very low dropout voltage (0.45V)
- Very low quiescent current (TYP. 50 μ A in OFF mode, 500 μ A in ON mode)
- Output current up to 500 mA
- Logic-controlled electronic shutdown
- Output voltages of 1.5; 1.8; 2.5; 2.7; 3; 3.3; 3.5; 4; 5; 6; 8; 8.5; 9; 12V
- Internal current and thermal limit
- Only 2.2 μ F for stability
- Available in $\pm 1\%$ (AB) or $\pm 2\%$ (C) selection at 25°C
- Supply voltage rejection: 80db (typ.)
- Temperature range: -40 to 125°C

Description

The LF00 series are very Low Drop regulators available in PENTAWATT, TO-220, TO-220FP, DPAK and PPAK package and in a wide range of output voltages.

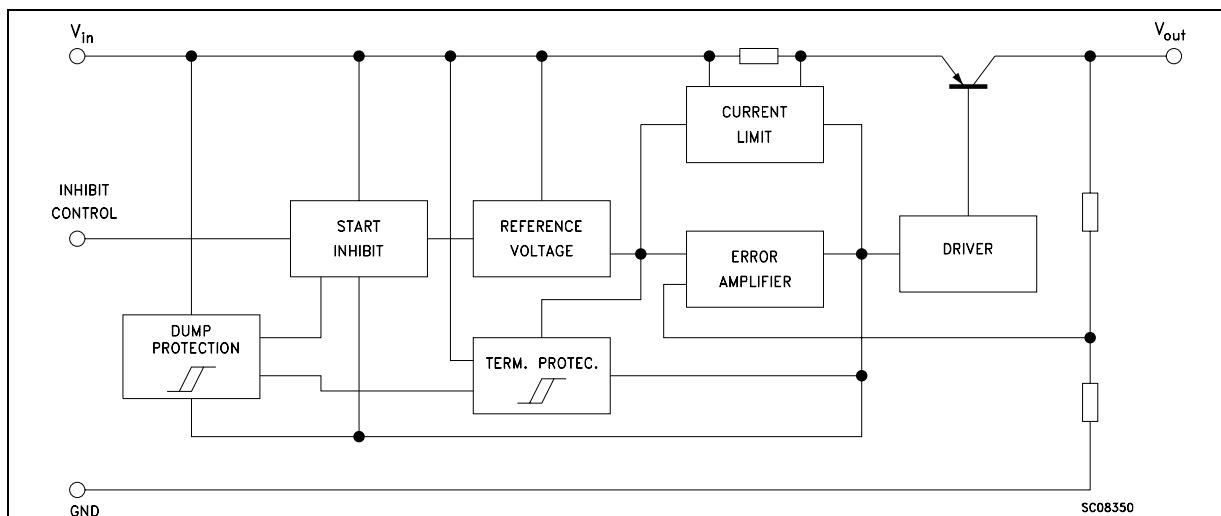
The very Low Drop voltage (0.45V) and the very low quiescent current make them particularly



suitable for Low Noise, Low Power applications and specially in battery powered systems.

In the 5 pins configuration (PENTAWATT and PPAK) a Shutdown Logic Control function is available (pin 2, TTL compatible). This means that when the device is used as a local regulator, it is possible to put a part of the board in standby, decreasing the total power consumption. In the three terminal configuration the device has the same electrical performance, but is fixed in the ON state. It requires only a 2.2 μ F capacitor for stability allowing space and cost saving.

Schematic diagram

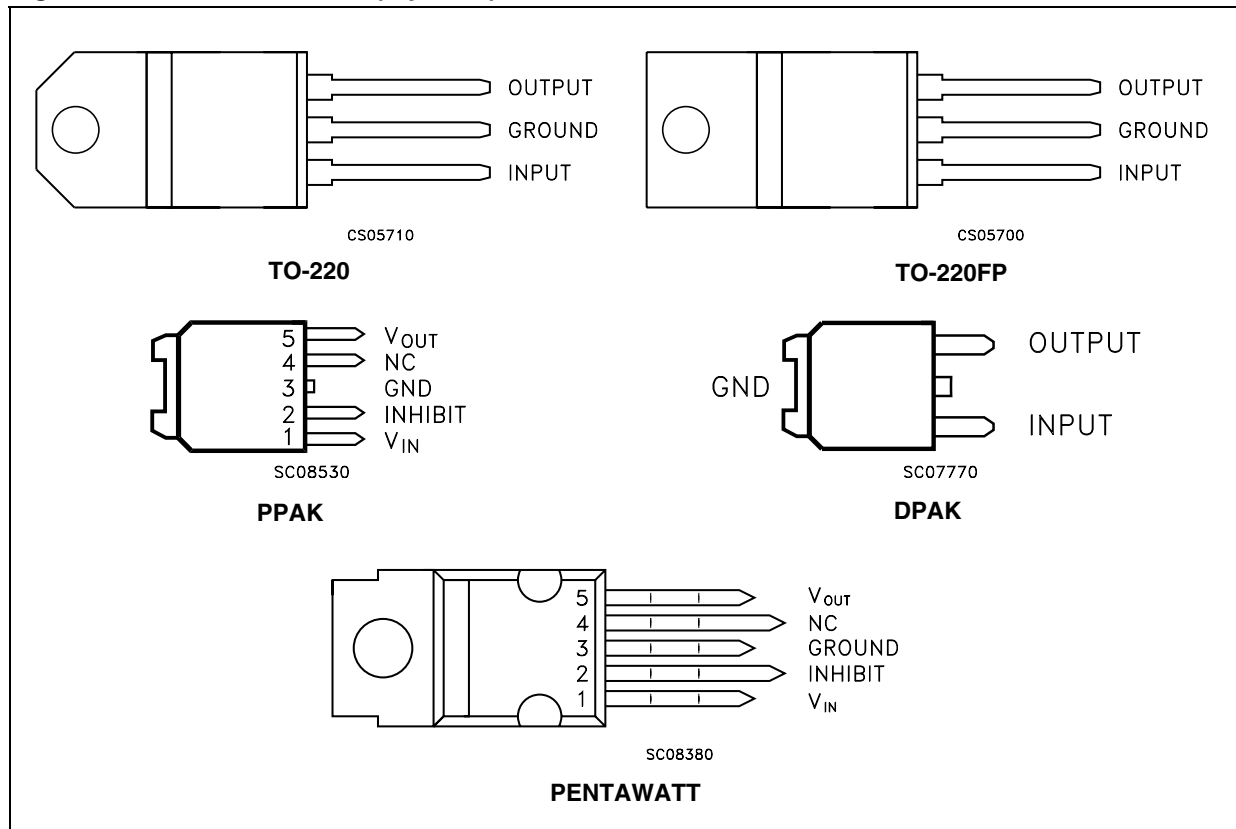


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1 Pin configuration

Figure 1. Pin connections (top view)



2 Maximum ratings

Table 1. Absolute maximum ratings

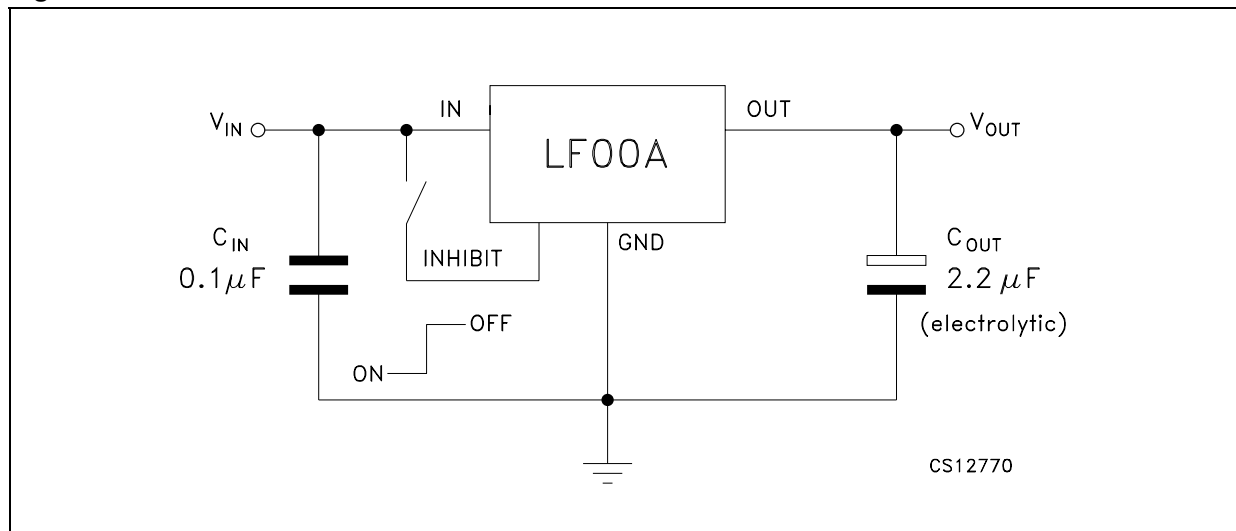
Symbol	Parameter	Value	Unit
V_I	DC Input Voltage	-0.5 to 40 ⁽¹⁾	V
I_O	Output Current	Internally Limited	
P_{TOT}	Power Dissipation	Internally Limited	
T_{STG}	Storage Temperature Range	-40 to 150	°C
T_{OP}	Operating Junction Temperature Range	-40 to 125	°C

1. For $18 < V_I < 40$ the regulator is in shut-down

Table 2. Thermal data

Symbol	Parameter	PENTAWATT	TO-220	TO-220FP	DPAK/PPAK	Unit
R_{thJC}	Thermal resistance junction-case	3	3	5	8	°C/W
R_{thJA}	Thermal resistance junction-ambient	50	50	60	100	°C/W

Figure 2. Test circuit



3 Electrical characteristics

Table 3. Electrical characteristics for LF15AB (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit	
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 3.5 \text{ V}$	1.485	1.5	1.515	V	
		$I_O = 50 \text{ mA}$, $V_I = 3.5 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	1.470		1.530		
V_I	Operating input voltage	$I_O = 500 \text{ mA}$	2.5		16	V	
I_O	Output current limit			1		A	
ΔV_O	Line regulation	$V_I = 2.5 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		2	10	mV	
ΔV_O	Load regulation	$V_I = 2.8 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		2	10	mV	
I_d	Quiescent current	$V_I = 2.5 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE		0.5	1	mA
		$V_I = 2.8 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$				12	
		$V_I = 6 \text{ V}$	OFF MODE		50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 3.5 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$		82	dB	
			$f = 1 \text{ KHz}$		77		
			$f = 10 \text{ KHz}$		65		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV	
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		1		V	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V	
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V	
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA	
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF	

Table 4. Electrical characteristics for LF15C (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 3.5 \text{ V}$	1.47	1.5	1.53	V
		$I_O = 50 \text{ mA}$, $V_I = 3.5 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	1.44		1.56	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$	2.5		16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 2.5 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		2	10	mV
ΔV_O	Load regulation	$V_I = 2.8 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		2	10	mV
I_d	Quiescent current	$V_I = 2.5 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 2.8 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$				
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 3.5 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	82		dB
			$f = 1 \text{ KHz}$	77		
			$f = 10 \text{ KHz}$	65		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		1		V
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 5. Electrical characteristics for LF18AB (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 3.3 \text{ V}$	1.782	1.8	1.818	V
		$I_O = 50 \text{ mA}$, $V_I = 3.3 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	1.764		1.836	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$	3		16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 2.8 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		2	12	mV
ΔV_O	Load regulation	$V_I = 3.3 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		2	10	mV
I_d	Quiescent current	$V_I = 2.5 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 3.1 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$				
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 3.5 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	82		dB
			$f = 1 \text{ KHz}$	77		
			$f = 10 \text{ KHz}$	60		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.7		V
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 6. Electrical characteristics for LF18C (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 3.5 \text{ V}$	1.764	1.8	1.836	V
		$I_O = 50 \text{ mA}$, $V_I = 3.5 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	1.728		1.872	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$	3		16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 2.8 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		2	12	mV
ΔV_O	Load regulation	$V_I = 3.3 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		2	10	mV
I_d	Quiescent current	$V_I = 2.5 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 3.1 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$				
		$V_I = 6 \text{ V}$	OFF MODE	50	100	
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 3.5 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	82		dB
			$f = 1 \text{ KHz}$	77		
			$f = 10 \text{ KHz}$	60		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.7		V
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 7. Electrical characteristics for LF25AB (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 4.5 \text{ V}$	2.475	2.5	2.525	V
		$I_O = 50 \text{ mA}$, $V_I = 4.5 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	2.450		2.550	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 3.5 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		2	12	mV
ΔV_O	Load regulation	$V_I = 3.8 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		2	12	mV
I_d	Quiescent current	$V_I = 3.5 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 3.8 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$				
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 4.5 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	82		dB
			$f = 1 \text{ KHz}$	77		
			$f = 10 \text{ KHz}$	65		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 8. Electrical characteristics for LF25C (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 4.5 \text{ V}$	2.45	2.5	2.55	V
		$I_O = 50 \text{ mA}$, $V_I = 4.5 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	2.4		2.6	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 3.5 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		2	12	mV
ΔV_O	Load regulation	$V_I = 3.8 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		2	12	mV
I_d	Quiescent current	$V_I = 3.5 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 3.8 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$				
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 4.5 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	82		dB
			$f = 1 \text{ KHz}$	77		
			$f = 10 \text{ KHz}$	65		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 9. Electrical characteristics for LF27AB (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 4.7 \text{ V}$	2.673	2.7	2.727	V
		$I_O = 50 \text{ mA}$, $V_I = 4.7 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	2.646		2.754	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 3.7 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		2	13	mV
ΔV_O	Load regulation	$V_I = 4 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		2	13	mV
I_d	Quiescent current	$V_I = 3.7 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 4 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$				
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 4.7 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	82		dB
			$f = 1 \text{ KHz}$	77		
			$f = 10 \text{ KHz}$	65		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 10. Electrical characteristics for LF27C (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 4.7 \text{ V}$	2.646	2.7	2.754	V
		$I_O = 50 \text{ mA}$, $V_I = 4.7 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	2.592		2.808	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 3.7 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		2	13	mV
ΔV_O	Load regulation	$V_I = 4 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		2	13	mV
I_d	Quiescent current	$V_I = 3.7 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 4 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$				
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 4.7 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	82		dB
			$f = 1 \text{ KHz}$	77		
			$f = 10 \text{ KHz}$	65		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 11. Electrical characteristics for LF30AB (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 5 \text{ V}$	2.970	3	3.03	V
		$I_O = 50 \text{ mA}$, $V_I = 5 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	2.94		3.06	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 4 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		3	15	mV
ΔV_O	Load regulation	$V_I = 4.3 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		3	15	mV
I_d	Quiescent current	$V_I = 4 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 4.3 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$				
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 5 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	81		dB
			$f = 1 \text{ KHz}$	76		
			$f = 10 \text{ KHz}$	65		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 12. Electrical characteristics for LF30C (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 5 \text{ V}$	2.94	3	3.06	V
		$I_O = 50 \text{ mA}$, $V_I = 5 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	2.88		3.12	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 4 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		3	15	mV
ΔV_O	Load regulation	$V_I = 4.3 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		3	15	mV
I_d	Quiescent current	$V_I = 4 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 4.3 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$			12	
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 5 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	81		dB
			$f = 1 \text{ KHz}$	76		
			$f = 10 \text{ KHz}$	65		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 13. Electrical characteristics for LF33AB (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 5.3 \text{ V}$	3.267	3.3	3.333	V
		$I_O = 50 \text{ mA}$, $V_I = 5.3 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	3.234		3.366	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 4.3 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		3	16	mV
ΔV_O	Load regulation	$V_I = 4.6 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		3	16	mV
I_d	Quiescent current	$V_I = 4.3 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 4.6 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$				
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 5.3 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	80		dB
			$f = 1 \text{ KHz}$	75		
			$f = 10 \text{ KHz}$	65		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 14. Electrical characteristics for LF33C (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 5.3 \text{ V}$	3.234	3.3	3.366	V
		$I_O = 50 \text{ mA}$, $V_I = 5.3 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	3.168		3.432	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 4.3 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		3	16	mV
ΔV_O	Load regulation	$V_I = 4.6 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		3	16	mV
I_d	Quiescent current	$V_I = 4.3 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 4.6 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$				
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 5.3 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	80		dB
			$f = 1 \text{ KHz}$	75		
			$f = 10 \text{ KHz}$	65		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 15. Electrical characteristics for LF35AB (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 5.5 \text{ V}$	3.465	3.5	3.535	V
		$I_O = 50 \text{ mA}$, $V_I = 5.5 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	3.430		3.570	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 4.5 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		3	17	mV
ΔV_O	Load regulation	$V_I = 4.8 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		3	17	mV
I_d	Quiescent current	$V_I = 4.5 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 4.8 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$			12	
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 5.5 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	79		dB
			$f = 1 \text{ KHz}$	74		
			$f = 10 \text{ KHz}$	60		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 16. Electrical characteristics for LF35C (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 5.5 \text{ V}$	3.43	3.5	3.57	V
		$I_O = 50 \text{ mA}$, $V_I = 5.5 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	3.36		3.64	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 4.5 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		3	17	mV
ΔV_O	Load regulation	$V_I = 4.8 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		3	17	mV
I_d	Quiescent current	$V_I = 4.5 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 4.8 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$				
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 5.5 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	79		dB
			$f = 1 \text{ KHz}$	74		
			$f = 10 \text{ KHz}$	60		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 17. Electrical characteristics for LF40AB (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 6 \text{ V}$	3.96	4	4.04	V
		$I_O = 50 \text{ mA}$, $V_I = 6 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	3.92		4.08	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 5 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		4	20	mV
ΔV_O	Load regulation	$V_I = 5.3 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		4	20	mV
I_d	Quiescent current	$V_I = 5 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 5.3 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$			12	
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 6 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	78		dB
			$f = 1 \text{ KHz}$	73		
			$f = 10 \text{ KHz}$	60		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 18. Electrical characteristics for LF40C (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 6 \text{ V}$	3.92	4	4.08	V
		$I_O = 50 \text{ mA}$, $V_I = 6 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	3.84		4.16	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 5 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		4	20	mV
ΔV_O	Load regulation	$V_I = 5.3 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		4	20	mV
I_d	Quiescent current	$V_I = 5 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 5.3 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$			12	
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 6 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	78		dB
			$f = 1 \text{ KHz}$	73		
			$f = 10 \text{ KHz}$	60		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 19. Electrical characteristics for LF50AB (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 7 \text{ V}$	4.95	5	5.05	V
		$I_O = 50 \text{ mA}$, $V_I = 7 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	4.9		5.1	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 6 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		5	25	mV
ΔV_O	Load regulation	$V_I = 6.3 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		5	25	mV
I_d	Quiescent current	$V_I = 6 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 6.3 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$			12	
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 7 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	76		dB
			$f = 1 \text{ KHz}$	71		
			$f = 10 \text{ KHz}$	60		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 20. Electrical characteristics for LF50C (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 7 \text{ V}$	4.9	5	5.1	V
		$I_O = 50 \text{ mA}$, $V_I = 7 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	4.8		5.2	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 6 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		5	25	mV
ΔV_O	Load regulation	$V_I = 6.3 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		5	25	mV
I_d	Quiescent current	$V_I = 6 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.5	1	mA
		$V_I = 6.3 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$			12	
		$V_I = 6 \text{ V}$	OFF MODE	50	100	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 7 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	76		dB
			$f = 1 \text{ KHz}$	71		
			$f = 10 \text{ KHz}$	60		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 6 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 21. Electrical characteristics for LF60AB (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 8 \text{ V}$	5.94	6	6.06	V
		$I_O = 50 \text{ mA}$, $V_I = 8 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	5.88		6.12	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 7 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		6	30	mV
ΔV_O	Load regulation	$V_I = 7.3 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		6	30	mV
I_d	Quiescent current	$V_I = 7 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.7	1.5	mA
		$V_I = 7.3 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$			12	
		$V_I = 9 \text{ V}$	OFF MODE	70	140	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 8 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	75		dB
			$f = 1 \text{ KHz}$	70		
			$f = 10 \text{ KHz}$	60		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 9 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 22. Electrical characteristics for LF60C (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 8 \text{ V}$	5.88	6	6.12	V
		$I_O = 50 \text{ mA}$, $V_I = 8 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	5.76		6.24	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 7 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		6	30	mV
ΔV_O	Load regulation	$V_I = 7.3 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		6	30	mV
I_d	Quiescent current	$V_I = 7 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.7	1.5	mA
		$V_I = 7.3 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$				
		$V_I = 9 \text{ V}$	OFF MODE	70	140	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 8 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	75		dB
			$f = 1 \text{ KHz}$	70		
			$f = 10 \text{ KHz}$	60		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 9 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF

Table 23. Electrical characteristics for LF80AB (refer to the test circuits, $T_J = 25^\circ\text{C}$, $C_I = 0.1 \mu\text{F}$, $C_O = 2.2 \mu\text{F}$ unless otherwise specified.)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
V_O	Output voltage	$I_O = 50 \text{ mA}$, $V_I = 10 \text{ V}$	7.92	8	8.08	V
		$I_O = 50 \text{ mA}$, $V_I = 10 \text{ V}$, $T_a = -25 \text{ to } 85^\circ\text{C}$	7.84		8.16	
V_I	Operating input voltage	$I_O = 500 \text{ mA}$			16	V
I_O	Output current limit			1		A
ΔV_O	Line regulation	$V_I = 9 \text{ to } 16 \text{ V}$, $I_O = 5 \text{ mA}$		8	40	mV
ΔV_O	Load regulation	$V_I = 9.3 \text{ V}$, $I_O = 5 \text{ to } 500 \text{ mA}$		8	40	mV
I_d	Quiescent current	$V_I = 9 \text{ to } 16 \text{ V}$, $I_O = 0 \text{ mA}$	ON MODE	0.7	1.5	mA
		$V_I = 9.3 \text{ to } 16 \text{ V}$, $I_O = 500 \text{ mA}$				
		$V_I = 9 \text{ V}$	OFF MODE	70	140	μA
SVR	Supply voltage rejection	$I_O = 5 \text{ mA}$, $V_I = 10 \pm 1 \text{ V}$	$f = 120 \text{ Hz}$	72		dB
			$f = 1 \text{ KHz}$	67		
			$f = 10 \text{ KHz}$	57		
eN	Output noise voltage	$B = 10 \text{ Hz to } 100 \text{ KHz}$		50		μV
V_d	Dropout voltage	$I_O = 200 \text{ mA}$		0.2	0.35	V
		$I_O = 500 \text{ mA}$		0.4	0.7	
V_{IL}	Control input logic low	$T_a = -40 \text{ to } 125^\circ\text{C}$			0.8	V
V_{IH}	Control input logic high	$T_a = -40 \text{ to } 125^\circ\text{C}$	2			V
I_I	Control input current	$V_I = 9 \text{ V}$, $V_C = 6 \text{ V}$		10		μA
C_O	Output bypass capacitance	$\text{ESR} = 0.1 \text{ to } 10 \Omega$, $I_O = 0 \text{ to } 500 \text{ mA}$	2	10		μF