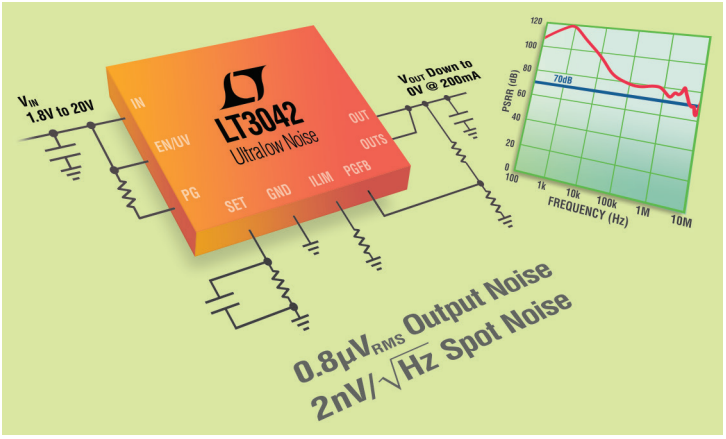
High Performance Low Dropout Linear Regulators (LDOs)

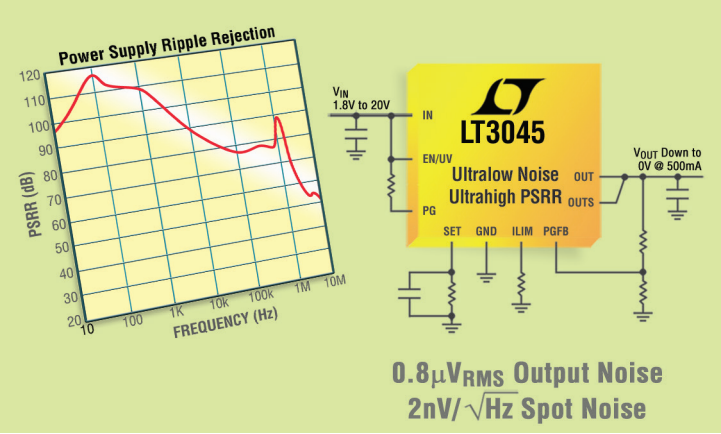
Linear Technology's high performance low dropout linear regulators (LDOs) offer very low dropout, fast transient response, ultralow noise, ultrahigh PSRR, excellent line and load regulation and have a very wide input voltage range, from 0.9V to 80V. Output currents range from 100mA to 10A, with positive, negative and multiple outputs. LDO+™ devices provide additional functionality and features beyond the basic linear regulator performance. Functionality may include voltage, current and temperature monitoring, diagnostic information and features such as programmable current limit, active output discharge or the ability to control an upstream supply powering the LDO (VIOC).

Ultralow Noise, Ultrahigh PSRR LDOs

LT®3042 – 20V, 200mA, Ultralow Noise, Ultrahigh PSRR RF Linear Regulator

- Ultralow RMS Noise: 0.8μV_{RMS} (10Hz to 100kHz)
- Ultralow Spot Noise: 2nV/√Hz at 10kHz
- Ultrahigh PSRR: 79dB at 1MHz
- Wide Input Voltage Range: 1.8V to 20V
- Single Capacitor Improves Noise and PSRR
- 100μA SET Pin Current: ±1% Initial Accuracy
- 10-Lead MSOP and 3mm × 3mm DFN Packages





LT3045 – 20V, 500mA, Ultralow Noise, Ultrahigh PSRR RF Linear Regulator

- Ultralow RMS Noise: 0.8μV_{RMS} (10Hz to 100kHz)
- Ultralow Spot Noise: 2nV/√Hz at 10kHz
- Ultrahigh PSRR: 76dB at 1MHz
- Wide Input Voltage Range: 1.8V to 20V
- Single Capacitor Improves Noise and PSRR
- 100μA SET Pin Current: ±1% Initial Accuracy
- 12-Lead MSOP and 3mm × 3mm DFN Packages (DFN is Pin Compatible with LT3042)

Part Number	V_{IN} Range	V_{OUT} Range	I_{OUT}	Dropout Voltage	PSRR at 1MHz	Output Noise	Spot Noise	Packages
LT3042	1.8V – 20V	0V – 15V	200mA	350mV	79dB	0.8μV_{RMS}	2nV/√Hz	MSOP-10, 3 × 3 DFN-10*
LT3045	1.8V – 20V	0V – 15V	500mA	280mV	76dB	0.8μV_{RMS}	2nV/√Hz	MSOP-12, 3 × 3 DFN-10*

* Pin Compatible.

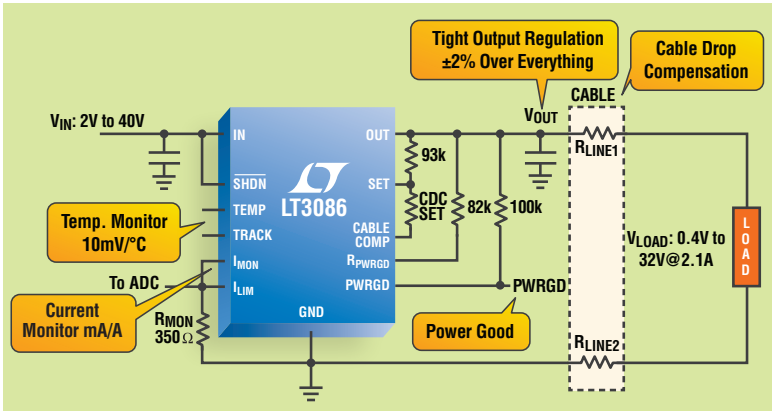
LINEAR TECHNOLOGY

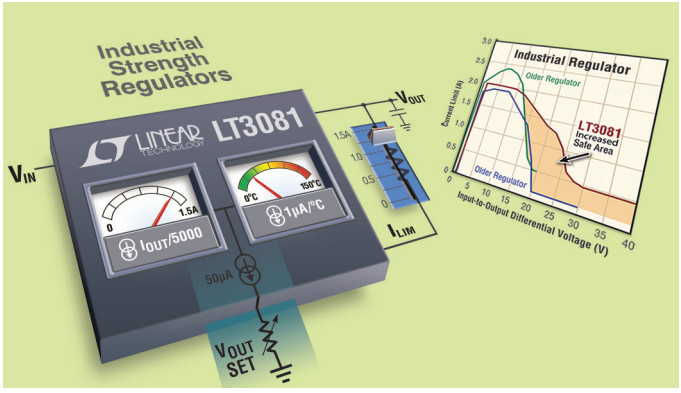
LDO+ Family – High Performance with Extra Features

LDO+ devices provide additional functionality and features beyond the basic linear regulator performance. Functionality may include wide safe operating area (SOA), voltage, current and temperature monitoring, diagnostic information and features such as programmable current limit, active output discharge or the ability to control an upstream supply powering the LDO (VIOC).

LT3086 – 40V, 2.1A Low Dropout Adjustable Linear Regulator with Monitoring and Cable Drop Compensation

- Wide Input Voltage Range: 1.4V to 40V
- 1 Resistor Sets Output Voltage: 0.4V to 32V
- ±2% Tolerance Over Line, Load and Temperature
- Output Current Monitor: $I_{MON} = I_{OUT}/1000$
- Temperature Monitor with Programmable Thermal Limit
- Programmable Cable Drop Compensation
- Parallel Multiple Devices for Higher Current
- Dropout Voltage: 330mV





LT3081 – 1.5A Single Resistor Rugged Linear Regulator with Monitors

- Extended Safe Operating Area (SOA)
- Stable with or without Input/Output Capacitors
- Wide Input Voltage Range: 1.2V to 36V
- Single Resistor Sets Output Voltage
- Output Current Monitor: $I_{MON} = I_{OUT}/5000$
- Junction Temperature Monitor: 1µA/°C
- Output Adjustable to 0V
- 50µA SET Pin Current: 1% Initial Accuracy
- Output Voltage Noise: $27\mu V_{RMS}$
- Parallel Multiple Devices for Higher Current or Heat Spreading

Part Number	V_{IN} Min (V)	V_{IN} Max (V)	Output Current (A)	Output Voltage	Dropout Voltage (V) Typ	Features	Packages
LT3050	1.6	45	0.1	Adj, 3.3, 5	0.34	Output Current Monitor, Shutdown	3 × 2 DFN-12, MSOP-12E
LT3061	1.6	45	0.1	Adj	0.25	Active Output Discharge, Shutdown	2 × 3 DFN-8, MSOP-8E
LT3042	1.8	20	0.2	Adj	0.35	Ultralow Noise, Ultrahigh PSRR, Current Source Reference, Output Current Monitor, Power Good, Shutdown	3 × 3 DFN-10, MSOP-10E
LT3045	1.8	20	0.5	Adj	0.26	Ultralow Noise, Ultrahigh PSRR, Current Source Reference, Output Current Monitor, Power Good, Shutdown	3 × 3 DFN-10, MSOP-12E
LT3063	1.6	45	0.2	Adj	0.3	Active Output Discharge, Shutdown	2 × 3 DFN-8, MSOP-8E
LT3055	2	45	0.5	Adj	0.35	Power Good, Output Current Monitor, Temperature Monitor, Shutdown	4 × 3 DFN-16, MSOP-16E
LT3066	1.8	45	0.5	Adj	0.3	Active Output Discharge, Shutdown	4 × 3 DFN-12, MSOP-12E
LT3090	–36	–1.5	0.6	–Adj	0.3	Current Source Reference, Output Current Monitor, Cable Drop Compensation, Shutdown	3 × 3 DFN-10, MSOP-12E
LT3089	1.2	36	0.8	Adj	1.47	Current Source Reference, Cable Drop Compensation, Temperature Monitor, Output Current Monitor	4 × 4 DFN-12, DDPAK-7, TSSOP-16E
LT3081	1.2	36	1.5	Adj	1.21	Current Source Reference, Cable Drop Compensation, Temperature Monitor, Output Current Monitor	4 × 4 DFN-12, DDPAK-7, TO-220, TSSOP-16E
LT3091	–36	–1.5	1.5	–Adj	0.3	Current Source Reference, Cable Drop Compensation, Output Current Monitor, Shutdown	4 × 3 DFN-14, DDPAK-7, TO-220, TSSOP-16E
LT3086	1.4	40	2.1	Adj	0.33	Current Source Reference, Power Good, Output Current Monitor, Temperature Monitor, Cable Drop Compensation, Shutdown	5 × 4 DFN-16, DDPAK-7, TO-220, TSSOP-16E
LT3070	0.95	3	5	Adj	0.085	Digitally Programmable, Margining, Separate Bias Pin, Power Good	4 × 5 QFN-28
LT3071	0.95	3	5	Adj	0.085	Digitally Programmable, Margining, Separate Bias Pin, Power Good, Output Current Monitor	4 × 5 QFN-28