

# New 3-Terminal Regulators Add Functionality

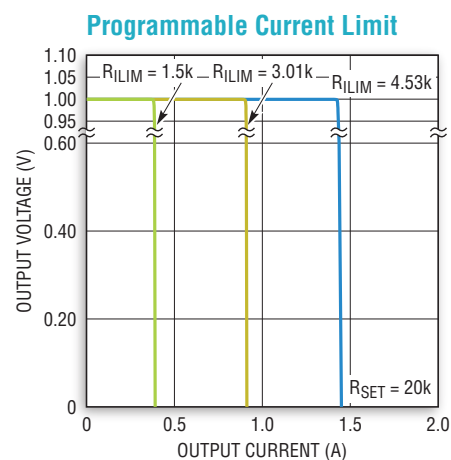
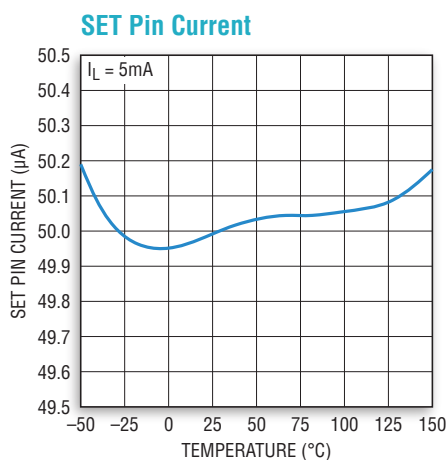
## Comparison of Key Features and Specifications

	LT3083	LT3086	LT3081	LT3080	LT3085	LT3082	LM317	LT108x
$I_{OUT}$	3A	2.1A	1.5A	1.1A	0.5A	0.2A	1.5A	1.5A to 7.5A
Maximum $V_{IN}$	23V	40V	40V	36V	36V	40V	40V	30V
Minimum $V_{OUT}$	0V	400mV	0V	0V	0V	0V	1.25V	1.25V
Dropout Voltage	310mV	330mV	1.25V	350mV	275mV	1.3V	2.2V	1.3V
Minimum $I_{LOAD}$	1mA	0 $\mu$ A	2mA	500 $\mu$ A	500 $\mu$ A	500 $\mu$ A	5mA	10mA
Minimum $C_{OUT}$	10 $\mu$ F	10 $\mu$ F	None	2.2 $\mu$ F	2.2 $\mu$ F	2.2 $\mu$ F	1 $\mu$ F Tantalum	10 $\mu$ F Tantalum
Current Reference	50 $\mu$ A	50 $\mu$ A	50 $\mu$ A	10 $\mu$ A	10 $\mu$ A	10 $\mu$ A	N	N
1 Resistor $V_{OUT}$ Set	Y	Y	Y	Y	Y	Y	N	N
Parallelable	Y	Y	Y	Y	Y	Y	N	N
$I_{OUT}$ Monitor	N	Y	Y	N	N	N	N	N
Temperature Monitor	N	Y	Y	N	N	N	N	N
Programmable Current Limit	N	Y	Y	N	N	N	N	N

## Benefits of LT308X Regulators with a Current Source Reference over Traditional 3-Terminal Regulators with a Voltage Reference

- 1 Resistor Programs Output Voltage
- Always Operates in Unity-Gain
  - Bandwidth Independent of Output Voltage
  - Transient Response Independent of Output Voltage
- Output Voltage Programmable Down to 0V
- Output Noise Independent of Output Voltage
- PSRR Independent of Output Voltage
- Parallelable to Spread Heat across PCB

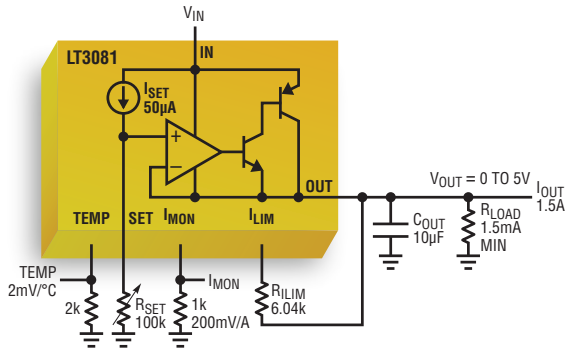
## Typical Performance Curves



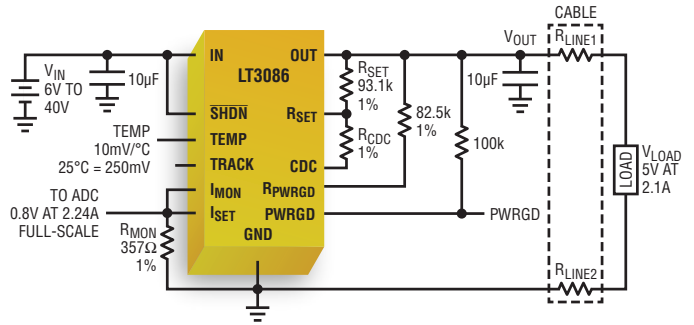
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# Typical Circuit Configurations

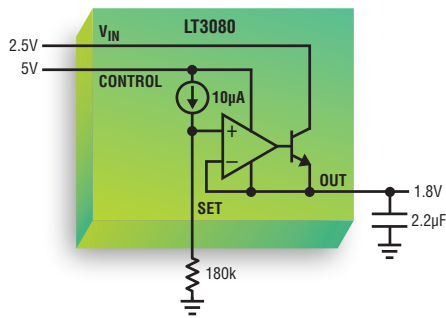
### Wide Safe Operating Area Supply



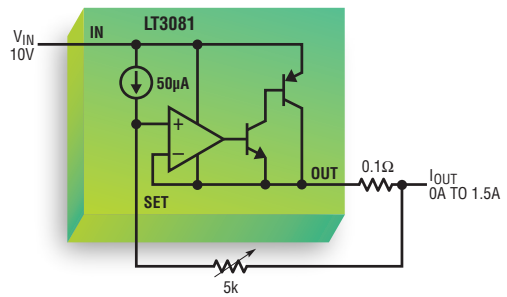
### 5V, 2.1A USB with Cable Drop Compensation



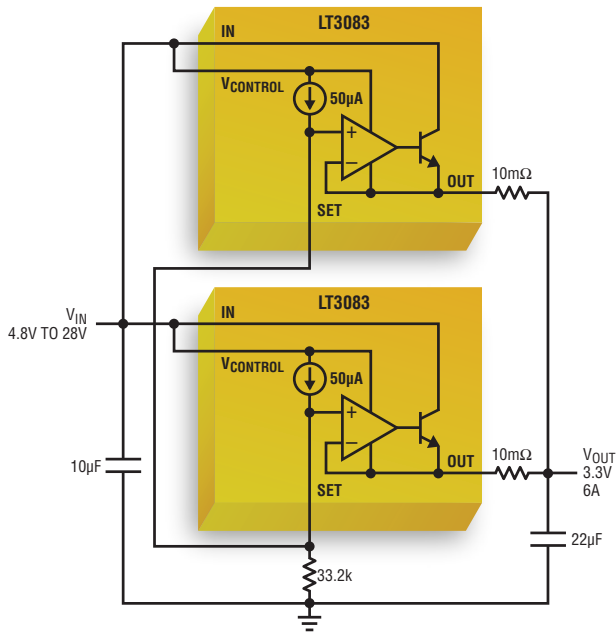
### Low Dropout Regulator



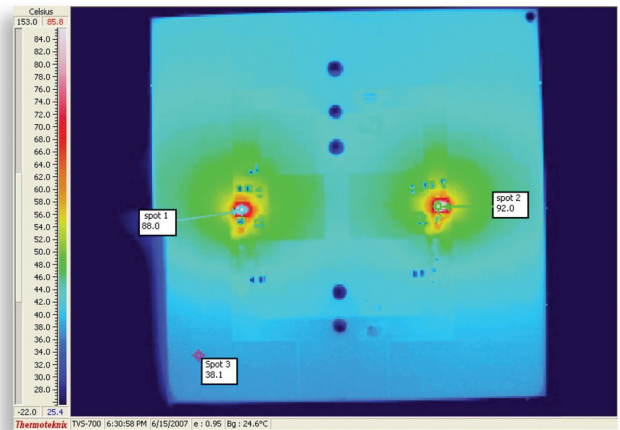
### Current Source



## Paralleled Regulator



### Paralleled Regulators Show Even Heat Spreading\*



\*NO HEAT SINKS AND NO AIR FLOW