



FEATURES

- Output Voltages Set Internally to $\pm 1\%$
- Output Voltage: +15V (other voltages available; contact factory)
- Input Range +18.5 to +30 Volts
- Hermetic Surface Mount Package
- Thermally Optimized Package
- Built-In Thermal Overload Protection
- Short Circuit Current Limiting
- 100% Hi-Rel Tested
- Compatible to DSCC 5962-88748
- MIL-PRF-38534

PRODUCT OVERVIEW

The LVR-7815 positive regulators are supplied in a hermetically sealed surface mount package. All protective features are designed into the circuit, including thermal shutdown, current limiting, and safe-area control. This series of regulators can deliver over 0.5 amps of output current.

The LVR-7815 regulators are internally trimmed to provide a nominal voltage accuracy of 1%. The LVR-7815 accepts a wide input voltage range of +18.5 to +30 volts and it has a +15 Volts output. Other output voltages, ranging from +1.8V, +2.4V, +3.3V, and +5V, are also available.

Models are available for use in commercial (0 to +70°C), extended (-40 to +110°C), and military or Hi-Rel MIL-STD-883 (-55 to +125°C) operating temperature ranges. Every unit is 100% tested for its rated grade and over the specified temperature. The LVR-7815 products are built on DATEL's MIL-PRF-38534 certified production line. They are the best choice for all military, aerospace, ruggedized, and demanding applications where a hermetic surface mount package is required. RoHS and non-RoHS compliant models are available for all grades.

INPUT/OUTPUT CONNECTIONS			
Pin	Function	Pin	Function
1	NC	20	NC
2	V IN	19	NC
3	NC	18	NC
4	NC	17	V IN
5	NC	16	NC
6	NC	15	VOUT SENSE
7	GND	14	NC
8	NC	13	NC
9	NC	12	V OUT
10	V OUT	11	NC

BLOCK DIAGRAM

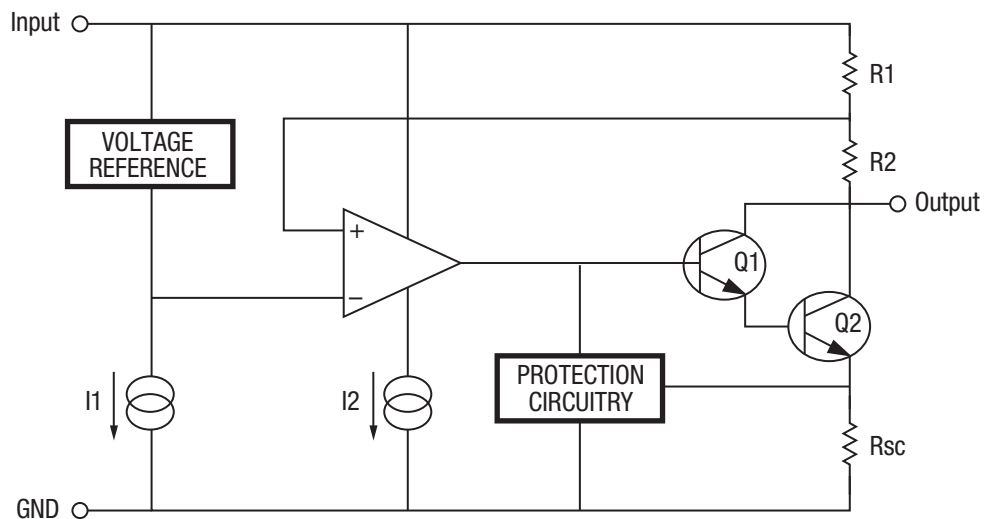


Figure 1. LVR-7815 Functional Block Diagram

ABSOLUTE MAXIMUM RATINGS @ 25°C		
PARAMETERS	LIMITS	UNITS
Input Voltage	+35	V
Operating Junction Temperature Range	-55 to +125	°C
Lead temperature (soldering, 10 seconds)	+300	°C
Junction temperature (T _j)	+150	°C
Rated Power @ 25°C	2	W

PHYSICAL/ENVIRONMENTAL				
PARAMETERS	MIN.	TYP.	MAX.	UNITS
Operating Temp. Range, Case				
LC, LC-C	0		+70	°C
LE, LE-C	-40		+100	°C
LM, LM-C, L/883	-55		+125	°C
Thermal Resistance				
Junction to case θ_{jc}	See MIL-STD-1835			
Junction to ambient θ_{ca}	—	120	—	°C/Watt
Storage Temperature Range	-65	—	+150	°C
Package Type	20 pin metal-sealed, ceramic LCC			

FUNCTIONAL SPECIFICATIONS

ELECTRICAL CHARACTERISTICS VIN = +23V, IO = 100mA, -55°C ≤ T A ≤ 125°C (unless otherwise specified).

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	MAX.	UNIT	
Output Voltage	V _{out}	VIN = 18.5V to 30V IO = 5mA to 500 mA, P < 2W	TA = +25°C	14.8	15.2	V
			-55°C to +125°C	14.6	15.4	V
Line Regulation ① ④	V _{RLine}	VIN = 17.5V to 30V	TA = +25°C	—	20	mV
			-55°C to +125°C	—	50	mV
		VIN = 20V to 26V	TA = +25°C	—	15	mV
			-55°C to +125°C	—	20	mV
Load Regulation ①	V _{RLoad}	IO = 5mA to 500 mA	TA = +25°C	—	50	mV
			-55°C to +125°C	—	75	mV
Standby Current Drain	I _{SCD}		TA = +25°C	—	6	mA
			-55°C to +125°C	—	6.5	mA
Standby Current Drain Change with Line	ΔI_{SCD} (Line)	VIN = 18.5V to 30V	-55°C to +125°C	—	0.8	mA
Standby Current Drain Change with Load	ΔI_{SCD} (Load)	IO = 5mA to 500mA	-55°C to +125°C	—	0.5	mA
Dropout Voltage	V _{DO}	$\Delta V_{OUT} = 100mV, IO = 500mA$	TA = +25°C	—	2.5	V
Peak Output Current	I _{O(pk)}		TA = +25°C	—	1.7	A
Short Circuit Current ②	IDS	VIN = 35V	TA = +25°C	—	0.7	A
			-55°C to +125°C	—	2	A
Ripple Rejection	$\Delta VIN / \Delta V_{OUT}$	f = 120 Hz, $\Delta VIN = 10V$ ③	-55°C to +125°C	—	52	dB
Output Noise Voltage ③		f = 10 Hz to 100KHz	TA = +25°C	—	40	µV/V RMS
Long Term Stability ③	$\Delta V_{OUT} / \Delta t$	t = 1000 hrs	TA = +25°C	—	150	mV

① Load and Line Regulation are specified at a constant junction temperature. Pulse testing with low duty cycle is used.

② Short Circuit protection is only assured up to VIN = +35V.

③ If not tested, shall be guaranteed to the specified limits.

④ Minimum load current for full line regulation = 5.0 mA.

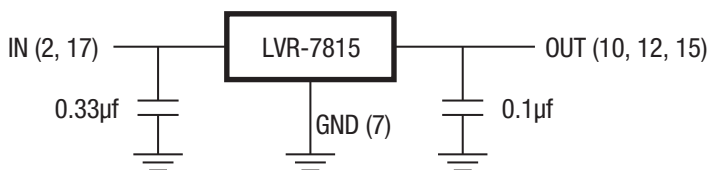
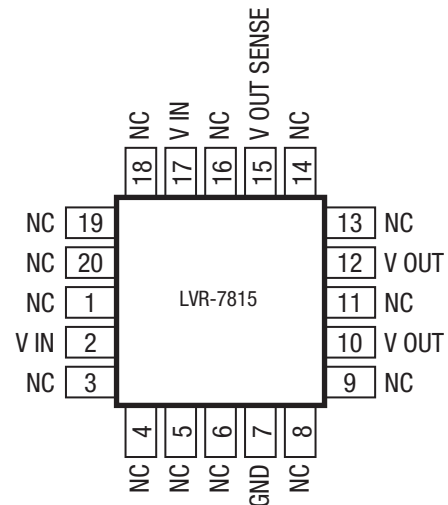


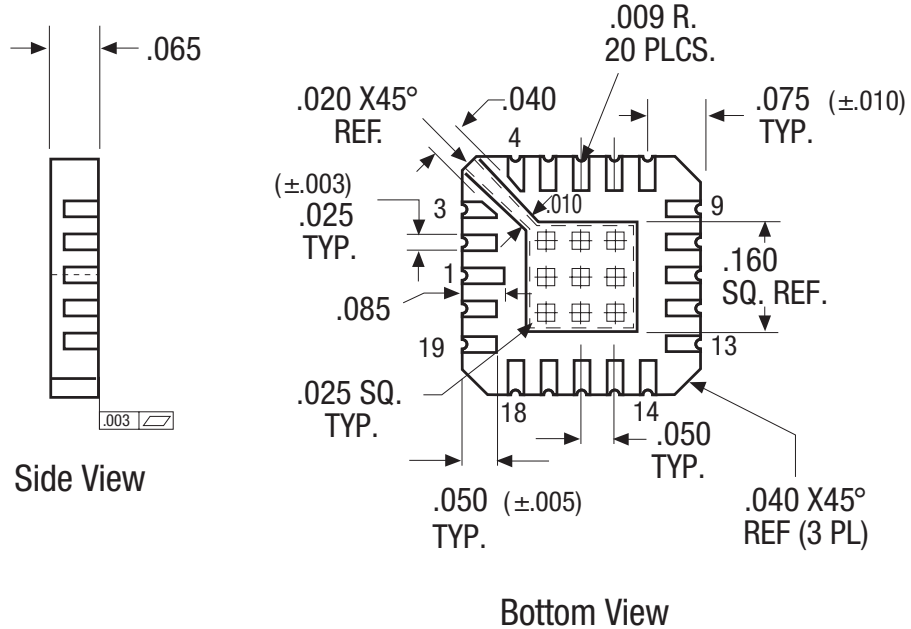
Figure 2. Fixed Regulator



Top View
Figure 3. Connections

MECHANICAL DIMENSIONS (INCHES)

INPUT/OUTPUT CONNECTIONS	
PIN	FUNCTION
1	NC
2	V _{IN}
3	NC
4	NC
5	NC
6	NC
7	GND
8	NC
9	NC
10	V _{OUT}
11	NC
12	V _{OUT}
13	NC
14	NC
15	V _{OUT} SENSE
16	NC
17	V _{IN}
18	NC
19	NC
20	NC



ORDERING GUIDE		
MODEL	OPERATING TEMPERATURE RANGE	RoHS
LVR-7815LC	0 to +70°C	Non-RoHS
LVR-7815LC-C	0 to +70°C	RoHS
LVR-7815LE	-40 to +100°C	Non-RoHS
LVR-7815LE-C	-40 to +100°C	RoHS
LVR-7815LM	-55 to +125°C	Non-RoHS
LVR-7815LM-C	-55 to +125°C	RoHS
LVR-7815LM-QL	-55 to +125°C	Non-RoHS
LVR-7815LM-QL-C	-55 to +125°C	RoHS
LVR-7815/883	-55 to +125°C	Non-RoHS

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