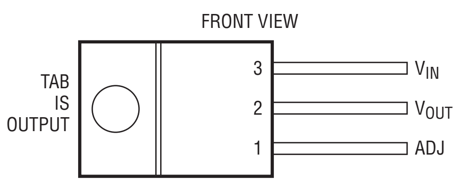
ABSOLUTE MAXIMUM RATINGS (Note 1)

Power Dissipation .... Internally Limited
Input-to-Output Voltage Differential
  C-Grades 30V
  I-Grades 30V
  M-Grades **(OBSOLETE)** 35V
Operating Junction Temperature Range (Note 9)
  C-Grades: Control Section .... 0°C to 125°C
       Power Transistor .... 0°C to 150°C
  I-Grades: Control Section .... –40°C to 125°C
       Power Transistor .... –40°C to 150°C
  M-Grades: **(OBSOLETE)**
       Control Section .... –55°C to 150°C
       Power Transistor .... –55°C to 200°C
Storage Temperature Range .... –65°C to 150°C
Lead Temperature (Soldering, 10 sec) .... 300°C

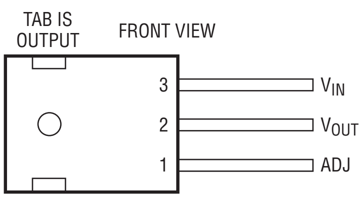
PRECONDITIONING

100% thermal shutdown functional test.

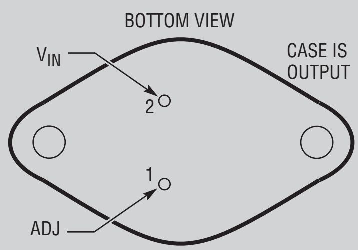
PIN CONFIGURATION



T PACKAGE
3-LEAD PLASTIC TO-220
θ_{JA} = 50°C/W

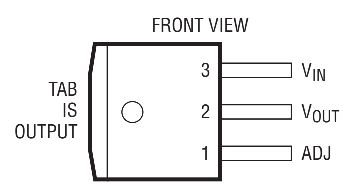


P PACKAGE
3-LEAD PLASTIC TO-3P
θ_{JA} = 35°C/W



K PACKAGE
2-LEAD TO-3 METAL CAN
θ_{JA} = 35°C/W

OBSOLETE PACKAGE



M PACKAGE
3-LEAD PLASTIC DD
θ_{JA} = 30°C/W*
*WITH PACKAGE SOLDERED TO 0.5IN^2 COPPER AREA OVER BACKSIDE GROUND PLANE OR INTERNAL POWER PLANE. θ_{JA} CAN VARY FROM 20°C/W TO >40°C/W DEPENDING ON MOUNTING TECHNIQUE

ORDER INFORMATION

LEAD FREE FINISH	TAPE AND REEL	PART MARKING*	PACKAGE DESCRIPTION	TEMPERATURE RANGE
LT1083CP#PBF	LT1083CP#TRPBF	LT1083CP	3-Lead Plastic TO-3P	Control: 0°C to 125°C Power: 0°C to 150°C
LT1084CP#PBF	LT1084CP#TRPBF	LT1084CP	3-Lead Plastic TO-3P	Control: 0°C to 125°C Power: 0°C to 150°C
LT1084CT#PBF	LT1084CT#TRPBF	LT1084CT	3-Lead Plastic TO-220	Control: 0°C to 125°C Power: 0°C to 150°C
LT1084IT#PBF	LT1084IT#TRPBF	LT1084IT	3-Lead Plastic TO-220	Control: –40°C to 125°C Power: –40°C to 150°C
LT1085CT#PBF	LT1085CT#TRPBF	LT1085CT	3-Lead Plastic TO-220	Control: 0°C to 125°C Power: 0°C to 150°C
LT1085IT#PBF	LT1085IT#TRPBF	LT1085IT	3-Lead Plastic TO-220	Control: –40°C to 125°C Power: –40°C to 150°C
LT1085CM#PBF	LT1085CM#TRPBF	LT1085CM	3-Lead Plastic DD	Control: 0°C to 125°C Power: 0°C to 150°C
LT1085IM#PBF	LT1085IM#TRPBF	LT1085IM	3-Lead Plastic DD	Control: –40°C to 125°C Power: –40°C to 150°C
LEAD BASED FINISH	**TAPE AND REEL**	**PART MARKING***	**PACKAGE DESCRIPTION**	**TEMPERATURE RANGE**
LT1083CP	LT1083CP#TR	LT1083CP	3-Lead Plastic TO-3P	Control: 0°C to 125°C Power: 0°C to 150°C
LT1084CP	LT1084CP#TR	LT1084CP	3-Lead Plastic TO-3P	Control: 0°C to 125°C Power: 0°C to 150°C
LT1084CT	LT1084CT#TR	LT1084CT	3-Lead Plastic TO-220	Control: 0°C to 125°C Power: 0°C to 150°C
LT1084IT	LT1084IT#TR	LT1084IT	3-Lead Plastic TO-220	Control: –40°C to 125°C Power: –40°C to 150°C
LT1085CT	LT1085CT#TR	LT1085CT	3-Lead Plastic TO-220	Control: 0°C to 125°C Power: 0°C to 150°C
LT1085IT	LT1085IT#TR	LT1085IT	3-Lead Plastic TO-220	Control: –40°C to 125°C Power: –40°C to 150°C
LT1085CM	LT1085CM#TR	LT1085CM	3-Lead Plastic DD	Control: 0°C to 125°C Power: 0°C to 150°C
LT1085IM	LT1085IM#TR	LT1085IM	3-Lead Plastic DD	Control: –40°C to 125°C Power: –40°C to 150°C
LT1083CK	LT1083CK#TR	LT1083CK	2-Lead TO-3 Metal Can	Control: 0°C to 125°C Power: 0°C to 150°C
LT1083MK	LT1083MK#TR	LT1083MK	2-Lead TO-3 Metal Can	Control: –55°C to 150°C Power: –55°C to 200°C
LT1084CK	LT1084CK#TR	LT1084CK	2-Lead TO-3 Metal Can	Control: 0°C to 125°C Power: 0°C to 150°C
LT1084MK	LT1084MK#TR	LT1084MK	2-Lead TO-3 Metal Can	Control: –55°C to 150°C Power: –55°C to 200°C
LT1085CK	LT1085CK#TR	LT1085CK	2-Lead TO-3 Metal Can	Control: 0°C to 125°C Power: 0°C to 150°C
LT1085MK	LT1085MK#TR	LT1085MK	2-Lead TO-3 Metal Can	Control: –55°C to 150°C Power: –55°C to 200°C
OBSOLETE PACKAGE				

Consult LTC Marketing for parts specified with wider operating temperature ranges. *The temperature grade is identified by a label on the shipping container.

For more information on lead free part marking, go to: http://www.linear.com/leadfree/
For more information on tape and reel specifications, go to: http://www.linear.com/tapeandreel/

ELECTRICAL CHARACTERISTICS

The ● denotes the specifications which apply over the full operating temperature range, otherwise specifications are at T_A = 25°C.

PARAMETER	CONDITIONS		MIN	TYP	MAX	UNITS
Reference Voltage	I_{OUT} = 10mA, T_J = 25°C, (V_{IN} – V_{OUT}) = 3V		1.238	1.250	1.262	V
	10mA ≤ I_{OUT} ≤ I_{FULL_LOAD} 1.5V ≤ (V_{IN} – V_{OUT}) ≤ 25V (Notes 4, 6, 7)	●	1.225	1.250	1.270	V
Line Regulation	I_{LOAD} = 10mA, 1.5V ≤ (V_{IN} – V_{OUT}) ≤ 15V, T_J = 25°C (Notes 2, 3)			0.015	0.2	%
		●		0.035	0.2	%
	M-Grade: 15V ≤ (V_{IN} – V_{OUT}) ≤ 35V (Notes 2, 3)	●		0.05	0.5	%
	C-, I-Grades: 15V ≤ (V_{IN} – V_{OUT}) ≤ 30V (Notes 2, 3)	●		0.05	0.5	%
Load Regulation	(V_{IN} – V_{OUT}) = 3V, 10mA ≤ I_{OUT} ≤ I_{FULL_LOAD}, T_J = 25°C			0.1	0.3	%
	(Notes 2, 3, 4, 6)	●		0.2	0.4	%
Dropout Voltage	ΔV_{REF} = 1%, I_{OUT} = I_{FULL_LOAD} (Notes 5, 6, 8)	●		1.3	1.5	V
Current Limit						
LT1083	(V_{IN} – V_{OUT}) = 5V	●	8.0	9.5		A
	(V_{IN} – V_{OUT}) = 25V	●	0.4	1.0		A
LT1084	(V_{IN} – V_{OUT}) = 5V	●	5.5	6.5		A
	(V_{IN} – V_{OUT}) = 25V	●	0.3	0.6		A
LT1085	(V_{IN} – V_{OUT}) = 5V	●	3.2	4.0		A
	(V_{IN} – V_{OUT}) = 25V	●	0.2	0.5		A
Minimum Load Current	(V_{IN} – V_{OUT}) = 25V	●		5	10	mA
Thermal Regulation	T_A = 25°C, 30ms Pulse					
LT1083				0.002	0.010	%/W
LT1084				0.003	0.015	%/W
LT1085				0.004	0.020	%/W
Ripple Rejection	f = 120Hz, C_{ADJ} = 25µF, C_{OUT} = 25µF Tantalum I_{OUT} = I_{FULL_LOAD}, (V_{IN} – V_{OUT}) = 3V (Notes 6, 7, 8)	●	60	75		dB
Adjust Pin Current	T_J = 25°C			55		µA
		●			120	µA
Adjust Pin Current Change	10mA ≤ I_{OUT} ≤ I_{FULL_LOAD}, 1.5V ≤ (V_{IN} – V_{OUT}) ≤ 25V (Note 6)	●		0.2	5	µA
Temperature Stability		●		0.5		%
Long-Term Stability	T_A = 125°C, 1000 Hrs			0.3	1	%
RMS Output Noise (% of V_{OUT})	T_A = 25°C, 10Hz = ≤ f ≤ 10kHz			0.003		%

ELECTRICAL CHARACTERISTICS

The ● denotes the specifications which apply over the full operating temperature range, otherwise specifications are at T_A = 25°C.

PARAMETER	CONDITIONS		MIN	TYP	MAX	UNITS
Thermal Resistance Junction-to-Case	Control Circuitry/Power Transistor					
LT1083	K Package				0.6/1.6	°C/W
	P Package				0.5/1.6	°C/W
LT1084	K Package				0.75/2.3	°C/W
	P Package				0.65/2.3	°C/W
	T Package				0.65/2.7	°C/W
LT1085	K Package				0.9/3.0	°C/W
	M, T Package				0.7/3.0	°C/W

Note 1: Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. Exposure to any Absolute Maximum Rating condition for extended periods may affect device reliability and lifetime.

Note 2: See thermal regulation specifications for changes in output voltage due to heating effects. Load and line regulation are measured at a constant junction temperature by low duty cycle pulse testing.

Note 3: Line and load regulation are guaranteed up to the maximum power dissipation (60W for the LT1083, 45W for the LT1084 (K, P), 30W for the LT1084 (T) and 30W for the LT1085). Power dissipation is determined by the input/output differential and the output current. Guaranteed maximum power dissipation will not be available over the full input/output voltage range.

Note 4: I_{FULL_LOAD} is defined in the current limit curves. The I_{FULL_LOAD} curve is defined as the minimum value of current limit as a function of input-to-output voltage. Note that the 60W power dissipation for the LT1083 (45W for the LT1084 (K, P), 30W for the LT1084 (T), 30W for the LT1085) is only achievable over a limited range of input-to-output voltage.

Note 5: Dropout voltage is specified over the full output current range of the device. Test points and limits are shown on the Dropout Voltage curve.

Note 6: For LT1083 I_{FULL_LOAD} is 5A for –55°C ≤ T_J < –40°C and 7.5A for T_J ≥ –40°C.

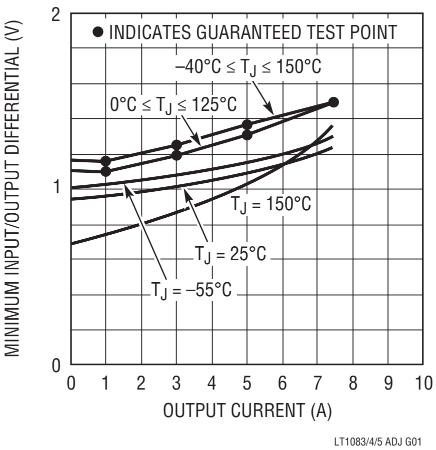
Note 7: 1.7V ≤ (V_{IN} – V_{OUT}) ≤ 25V for LT1084 at –55°C ≤ T_J ≤ –40°C.

Note 8: Dropout is 1.7V maximum for LT1084 at –55°C ≤ T_J ≤ –40°C.

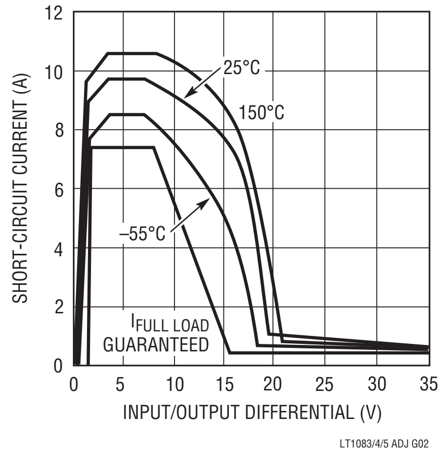
Note 9: The LT1083/LT1084/LT1085 regulators are tested and specified under pulse load conditions such that $T_J \cong T_A$. The C-grade LT1083/LT1084/LT1085 are 100% tested at 25°C.The I-grade LT1084/LT1085 are guaranteed over the full –40°C to 125°C operating ambient temperature range.

TYPICAL PERFORMANCE CHARACTERISTICS

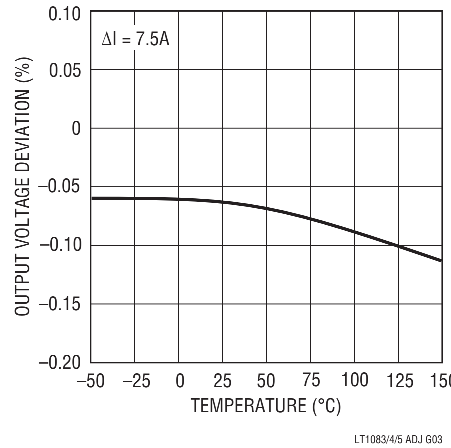
LT1083
Dropout Voltage



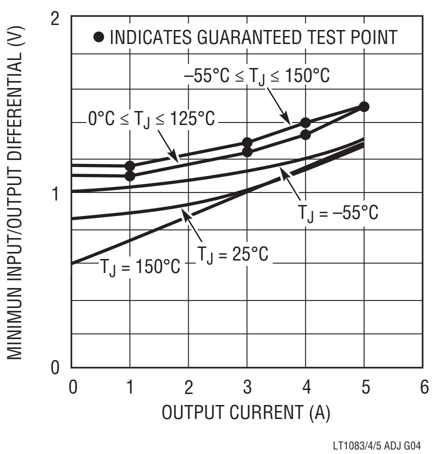
LT1083
Short-Circut Current



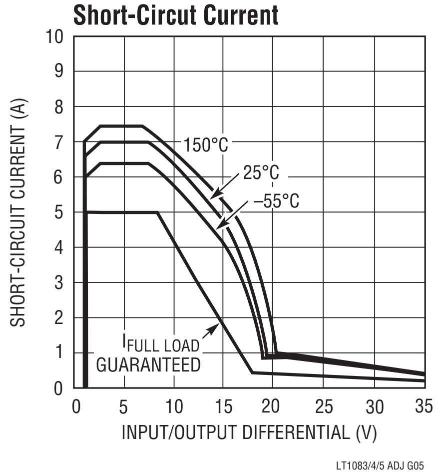
LT1083
Load Regulation



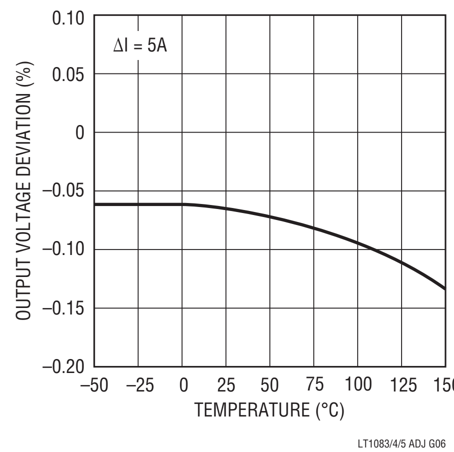
LT1084
Dropout Voltage



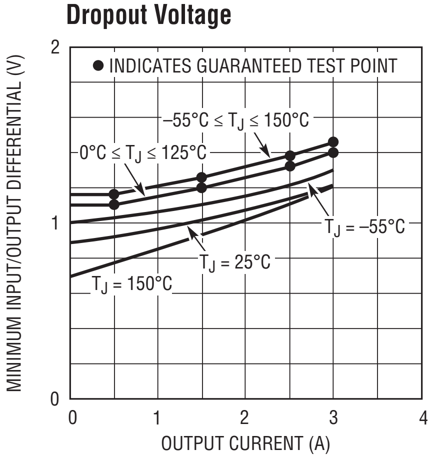
LT1084
Short-Circut Current



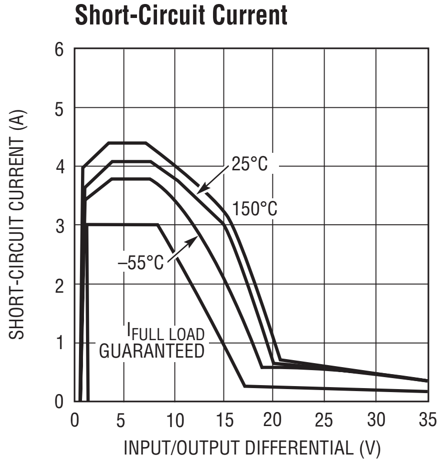
LT1084
Load Regulation



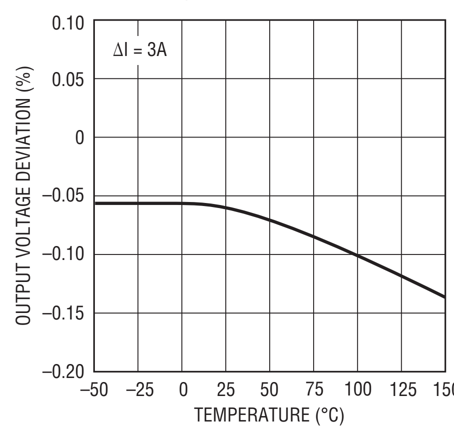
LT1085
Dropout Voltage



LT1085
Short-Circut Current

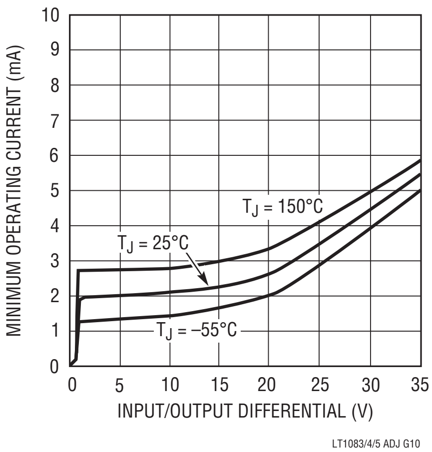


LT1085
Load Regulation

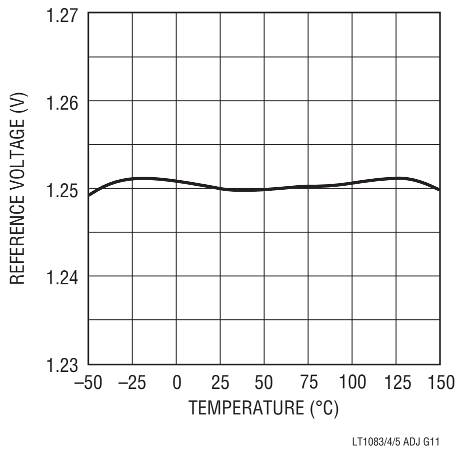


TYPICAL PERFORMANCE CHARACTERISTICS

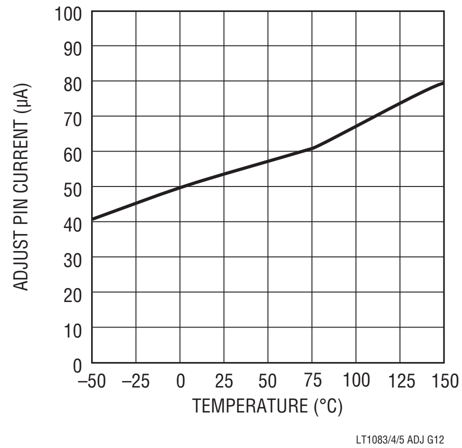
Minimum Operating Current



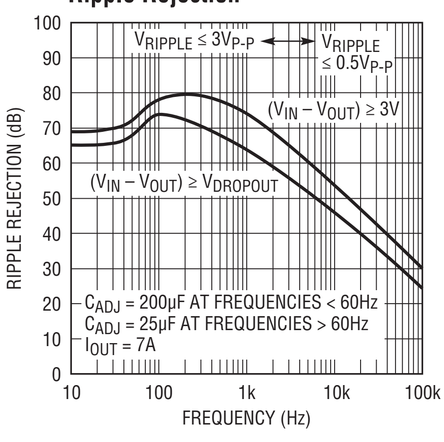
Temperature Stability



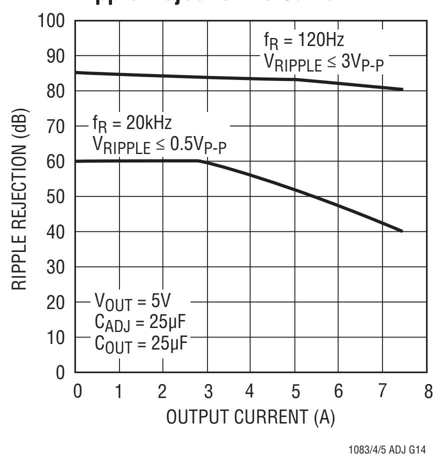
Adjust Pin Current



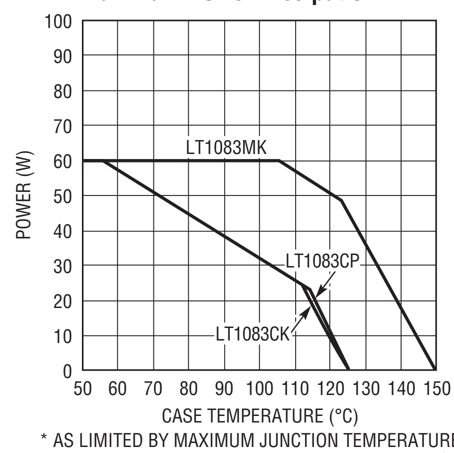
LT1083 Ripple Rejection



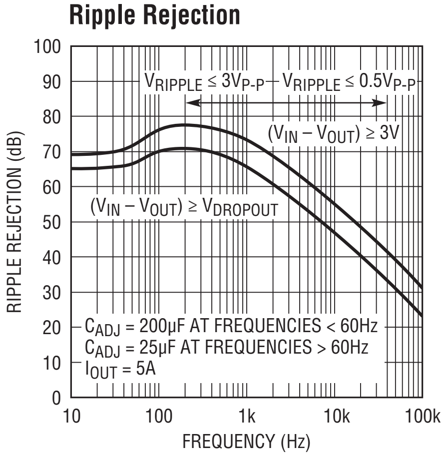
LT1083 Ripple Rejection vs Current



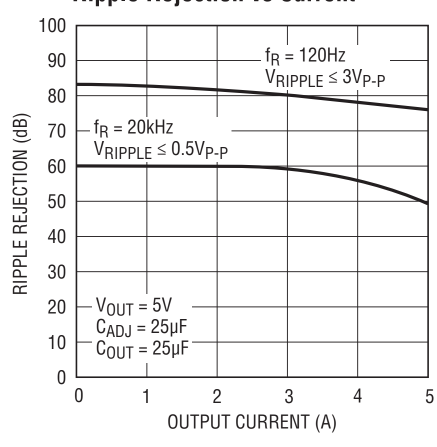
LT1083 Maximum Power Dissipation*



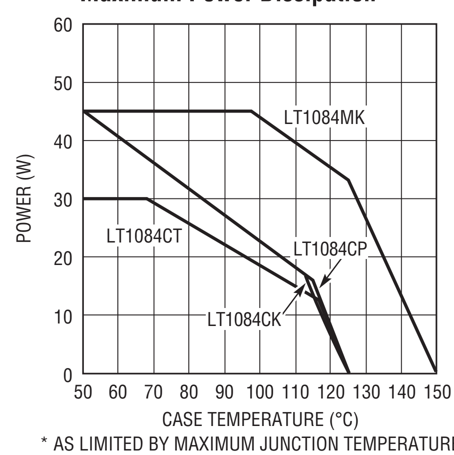
LT1084 Ripple Rejection



LT1084 Ripple Rejection vs Current

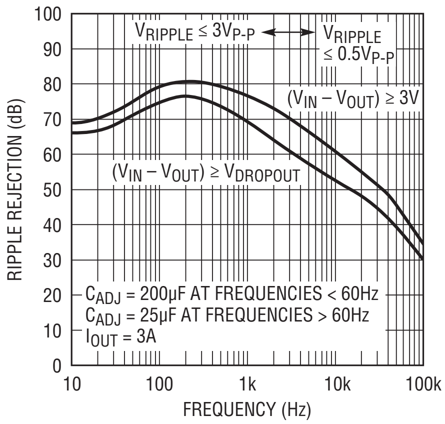


LT1084 Maximum Power Dissipation*



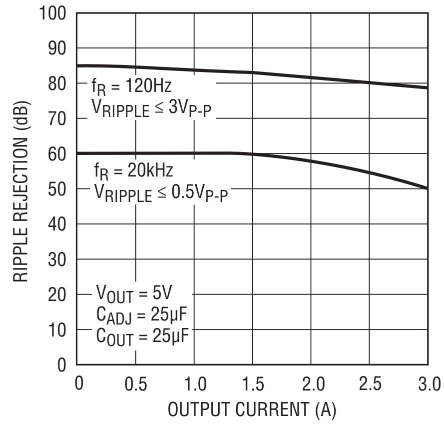
TYPICAL PERFORMANCE CHARACTERISTICS

LT1085
Ripple Rejection



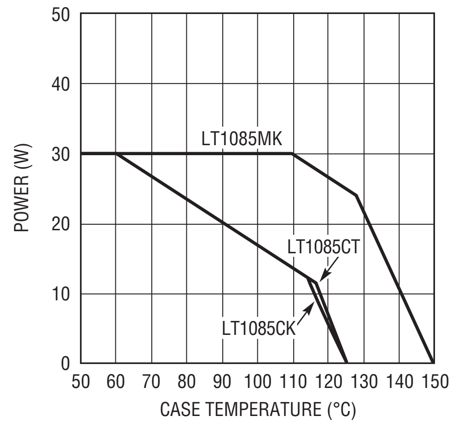
1083/4/5 ADJ G19

LT1085
Ripple Rejection vs Current



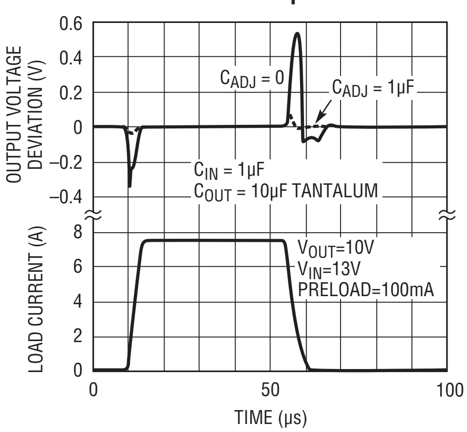
1083/4/5 ADJ G20

LT1085
Maximum Power Dissipation*



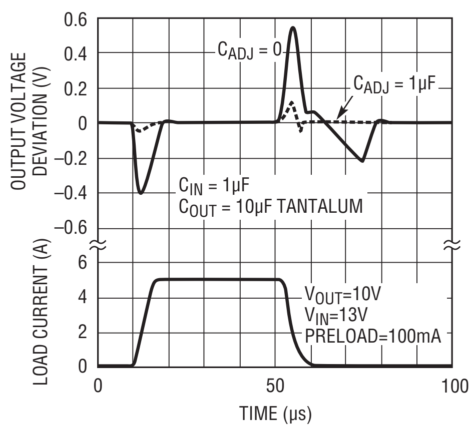
* AS LIMITED BY MAXIMUM JUNCTION TEMPERATURE
LT1083/4/5 ADJ G21

LT1083
Load Transient Response



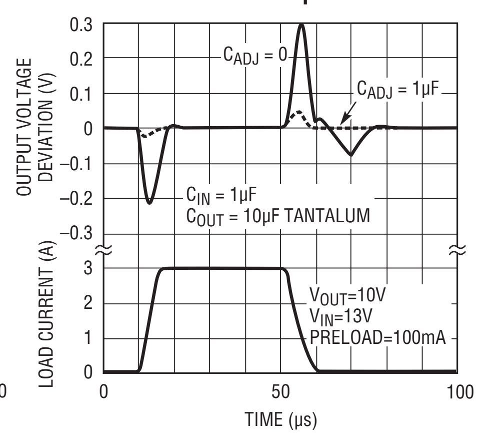
1083/4/5 ADJ G22

LT1084
Load Transient Response



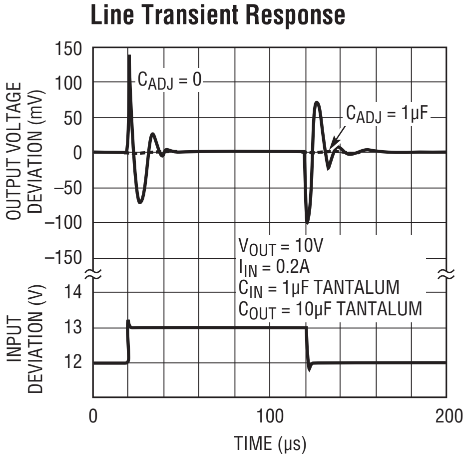
1083/4/5 ADJ G23

LT1085
Load Transient Response



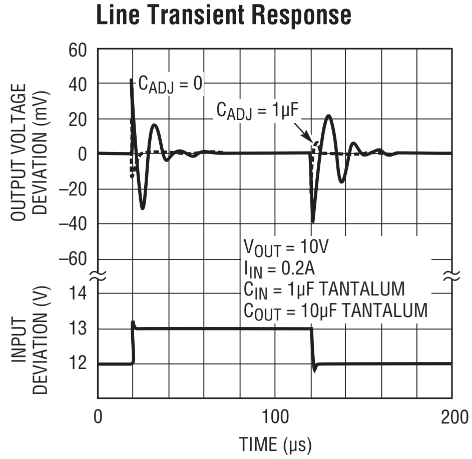
1083/4/5 ADJ G24

LT1083
Line Transient Response



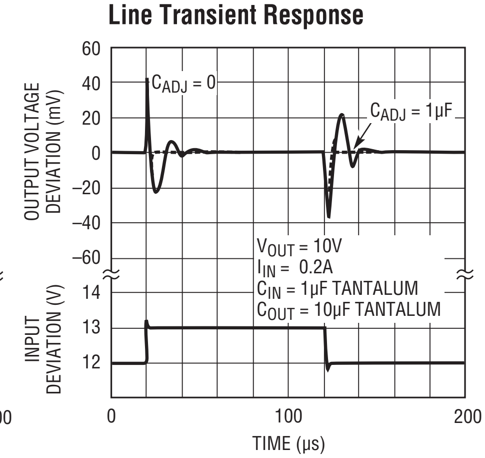
1083/4/5 ADJ G25

LT1084
Line Transient Response



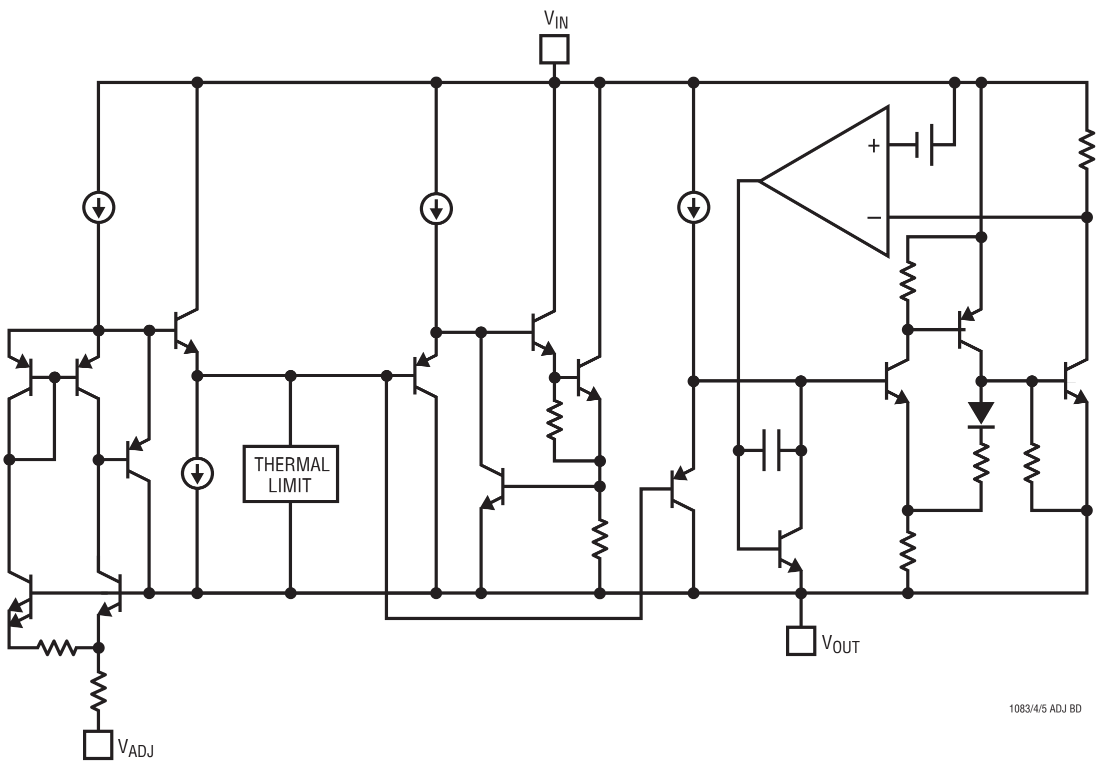
1083/4/5 ADJ G26

LT1085
Line Transient Response



1083/4/5 ADJ G27

BLOCK DIAGRAM



APPLICATIONS INFORMATION

The LT1083 family of 3-terminal adjustable regulators is easy to use and has all the protection features that are expected in high performance voltage regulators. They are short-circuit protected, and have safe area protection as well as thermal shutdown to turn off the regulator should the junction temperature exceed about 165°C.

These regulators are pin compatible with older 3-terminal adjustable devices, offer lower dropout voltage and more precise reference tolerance. Further, the reference stability with temperature is improved over older types of regulators. The only circuit difference between using the LT1083 family and older regulators is that this new family requires an output capacitor for stability.

Stability

The circuit design used in the LT1083 family requires the use of an output capacitor as part of the device frequency compensation. For all operating conditions, the addition of a 150µF aluminium electrolytic or a 22µF solid tantalum on the output will ensure stability. Normally, capacitors much smaller than this can be used with the LT1083. Many different types of capacitors with widely varying characteristics are available. These capacitors differ in capacitor tolerance (sometimes ranging up to ±100%), equivalent series resistance, and capacitance temperature coefficient. The 150µF or 22µF values given will ensure stability.

When the adjustment terminal is bypassed to improve the ripple rejection, the requirement for an output capacitor increases. The value of 22µF tantalum or 150µF aluminum covers all cases of bypassing the adjustment terminal. Without bypassing the adjustment terminal, smaller capacitors can be used with equally good results and the table below shows approximately what size capacitors are needed to ensure stability.

Recommended Capacitor Values

INPUT	OUTPUT	ADJUSTMENT
10µF	10µF Tantalum, 50µF Aluminum	None
10µF	22µF Tantalum, 150µF Aluminum	20µF

APPLICATIONS INFORMATION

Normally, capacitor values on the order of 100µF are used in the output of many regulators to ensure good transient response with heavy load current changes. Output capacitance can be increased without limit and larger values of output capacitor further improve stability and transient response of the LT1083 regulators.

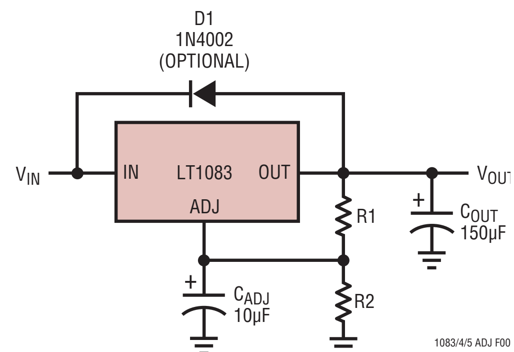
Another possible stability problem that can occur in monolithic IC regulators is current limit oscillations. These can occur because, in current limit, the safe area protection exhibits a negative impedance. The safe area protection decreases the current limit as the input-to-output voltage increases. That is the equivalent of having a negative resistance since increasing voltage causes current to decrease. Negative resistance during current limit is not unique to the LT1083 series and has been present on all power IC regulators. The value of the negative resistance is a function of how fast the current limit is folded back as input-to-output voltage increases. This negative resistance can react with capacitors or inductors on the input to cause oscillation during current limiting. Depending on the value of series resistance, the overall circuitry may end up unstable. Since this is a system problem, it is not necessarily easy to solve; however, it does not cause any problems with the IC regulator and can usually be ignored.

Protection Diodes

In normal operation, the LT1083 family does not need any protection diodes. Older adjustable regulators required protection diodes between the adjustment pin and the output and from the output to the input to prevent overstressing the die. The internal current paths on the LT1083 adjustment pin are limited by internal resistors. Therefore, even with capacitors on the adjustment pin, no protection diode is needed to ensure device safety under short-circuit conditions.

Diodes between input and output are usually not needed. The internal diode between the input and the output pins of the LT1083 family can handle microsecond surge currents of 50A to 100A. Even with large output capacitances, it is very difficult to get those values of surge currents in normal operations. Only with a high value of output capacitors, such as 1000µF to 5000µF and with the input pin instantaneously shorted to ground, can damage occur. A crowbar circuit at the input of the LT1083 can generate those kinds of currents, and a diode from output to input is then recommended. Normal power supply cycling or even plugging and unplugging in the system will not generate current large enough to do any damage.

The adjustment pin can be driven on a transient basis ±25V, with respect to the output without any device degradation. Of course, as with any IC regulator, exceeding the maximum input to output voltage differential causes the internal transistors to break down and none of the protection circuitry is functional.



Overload Recovery

Like any of the IC power regulators, the LT1083 has safe area protection. The safe area protection decreases the current limit as input-to-output voltage increases and keeps the power transistor inside a safe operating region for all values of input-to-output voltage. The LT1083 protection is designed to provide some output current at all values of input-to-output voltage up to the device breakdown.

When power is first turned on, as the input voltage rises, the output follows the input, allowing the regulator to start up into very heavy loads. During the start-up, as the input voltage is rising, the input-to-output voltage differential remains small, allowing the regulator to supply large output currents. With high input voltage, a problem can occur wherein removal of an output short will not allow the output voltage to recover. Older regulators, such as the 7800 series, also exhibited this phenomenon, so it is not unique to the LT1083.

APPLICATIONS INFORMATION

The problem occurs with a heavy output load when the input voltage is high and the output voltage is low, such as immediately after removal of a short. The load line for such a load may intersect the output current curve at two points. If this happens, there are two stable output operating points for the regulator. With this double intersection, the power supply may need to be cycled down to zero and brought up again to make the output recover.

Ripple Rejection

The typical curves for ripple rejection reflect values for a bypassed adjustment pin. This curve will be true for all values of output voltage. For proper bypassing and ripple rejection approaching the values shown, the impedance of the adjust pin capacitor at the ripple frequency should be less than the value of R1, (normally 100Ω to 120Ω). The size of the required adjust pin capacitor is a function of the input ripple frequency. At 120Hz the adjust pin capacitor should be 25µF if R1 = 100Ω. At 10kHz only 0.22µF is needed.

For circuits without an adjust pin bypass capacitor, the ripple rejection will be a function of output voltage. The output ripple will increase directly as a ratio of the output voltage to the reference voltage (V_{OUT}/V_{REF}). For example, with the output voltage equal to 5V and no adjust pin capacitor, the output ripple will be higher by the ratio of 5V/1.25V or four times larger. Ripple rejection will be degraded by 12dB from the value shown on the typical curve.

Output Voltage

The LT1083 develops a 1.25V reference voltage between the output and the adjust terminal (see Figure 1). By placing a resistor R1 between these two terminals, a constant current is caused to flow through R1 and down through R2 to set the overall output voltage. Normally this current is the specified minimum load current of 10mA. Because I_{ADJ} is very small and constant when compared with the current through R1, it represents a small error and can usually be ignored.

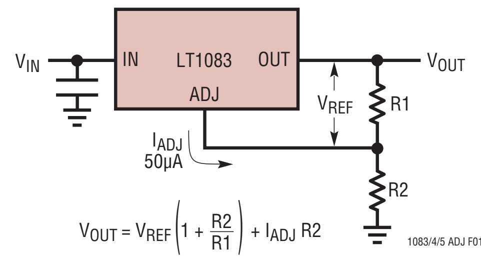


Figure 1. Basic Adjustable Regulator

Load Regulation

Because the LT1083 is a 3-terminal device, it is not possible to provide true remote load sensing. Load regulation will be limited by the resistance of the wire connecting the regulator to the load. The data sheet specification for load regulation is measured at the bottom of the package. Negative side sensing is a true Kelvin connection, with the bottom of the output divider returned to the negative side of the load. Although it may not be immediately obvious, best load regulation is obtained when the top of the resistor divider R1 is connected *directly* to the case *not to the load.* This is illustrated in Figure 2. If R1 were connected to the load, the effective resistance between the regulator and the load would be:

$$R_P \bullet \left(\frac{R2 + R1}{R1} \right), R_P = \text{Parasitic Line Resistance}$$

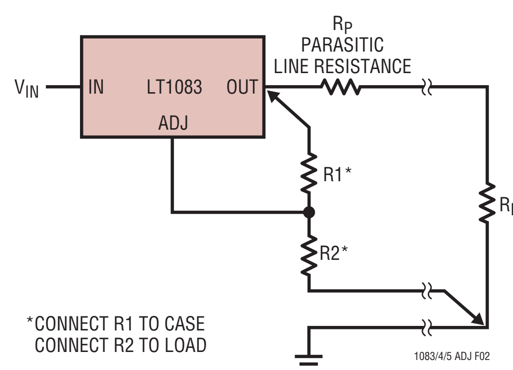


Figure 2. Connections for Best Load Regulation

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APPLICATIONS INFORMATION

Connected as shown, R_P is not multiplied by the divider ratio. R_P is about 0.004Ω per foot using 16-gauge wire. This translates to 4mV/ft at 1A load current, so it is important to keep the positive lead between regulator and load as short as possible and use large wire or PC board traces.

Thermal Considerations

The LT1083 series of regulators have internal power and thermal limiting circuitry designed to protect the device under overload conditions. For continuous normal load conditions however, maximum junction temperature ratings must not be exceeded. It is important to give careful consideration to all sources of thermal resistance from junction to ambient. This includes junction-to-case, case-to-heat sink interface, and heat sink resistance itself. New thermal resistance specifications have been developed to more accurately reflect device temperature and ensure safe operating temperatures. The data section for these new regulators provides a separate thermal resistance and maximum junction temperature for both the *Control Section* and the *Power Transistor*. Previous regulators, with a single junction-to-case thermal resistance specification, used an average of the two values provided here and therefore could allow excessive junction temperatures under certain conditions of ambient temperature and heat sink resistance. To avoid this possibility, calculations should be made for both sections to ensure that both thermal limits are met.

Junction-to-case thermal resistance is specified from the IC junction to the bottom of the case directly below the die. This is the lowest resistance path for heat flow. Proper mounting is required to ensure the best possible thermal flow from this area of the package to the heat sink. Thermal compound at the case-to-heat sink interface is strongly recommended. If the case of the device must be electrically isolated, a thermally conductive spacer can be used, as long as its added contribution to thermal resistance is considered. Note that the case of all devices in this series is electrically connected to the output.

For example, using an LT1083CK (TO-3, Commercial) and assuming:

V_{IN} (Max Continuous) = 9V, V_{OUT} = 5V, I_{OUT} = 6A,

T_A = 75°C, $\theta_{HEAT\ SINK}$ = 1°C/W,

$\theta_{CASE\text{-}TO\text{-}HEAT\ SINK}$ = 0.2°C/W for K package with thermal compound.

Power dissipation under these conditions is equal to:

$$P_D = (V_{IN} - V_{OUT})(I_{OUT}) = 24W$$

Junction temperature will be equal to:

$$T_J = T_A + P_D (\theta_{HEAT\ SINK} + \theta_{CASE\text{-}TO\text{-}HEAT\ SINK} + \theta_{JC})$$

For the Control Section:

T_J = 75°C + 24W (1°C/W + 0.2°C/W + 0.6°C/W) = 118°C
118°C < 125°C = T_{JMAX} (Control Section Commercial Range)

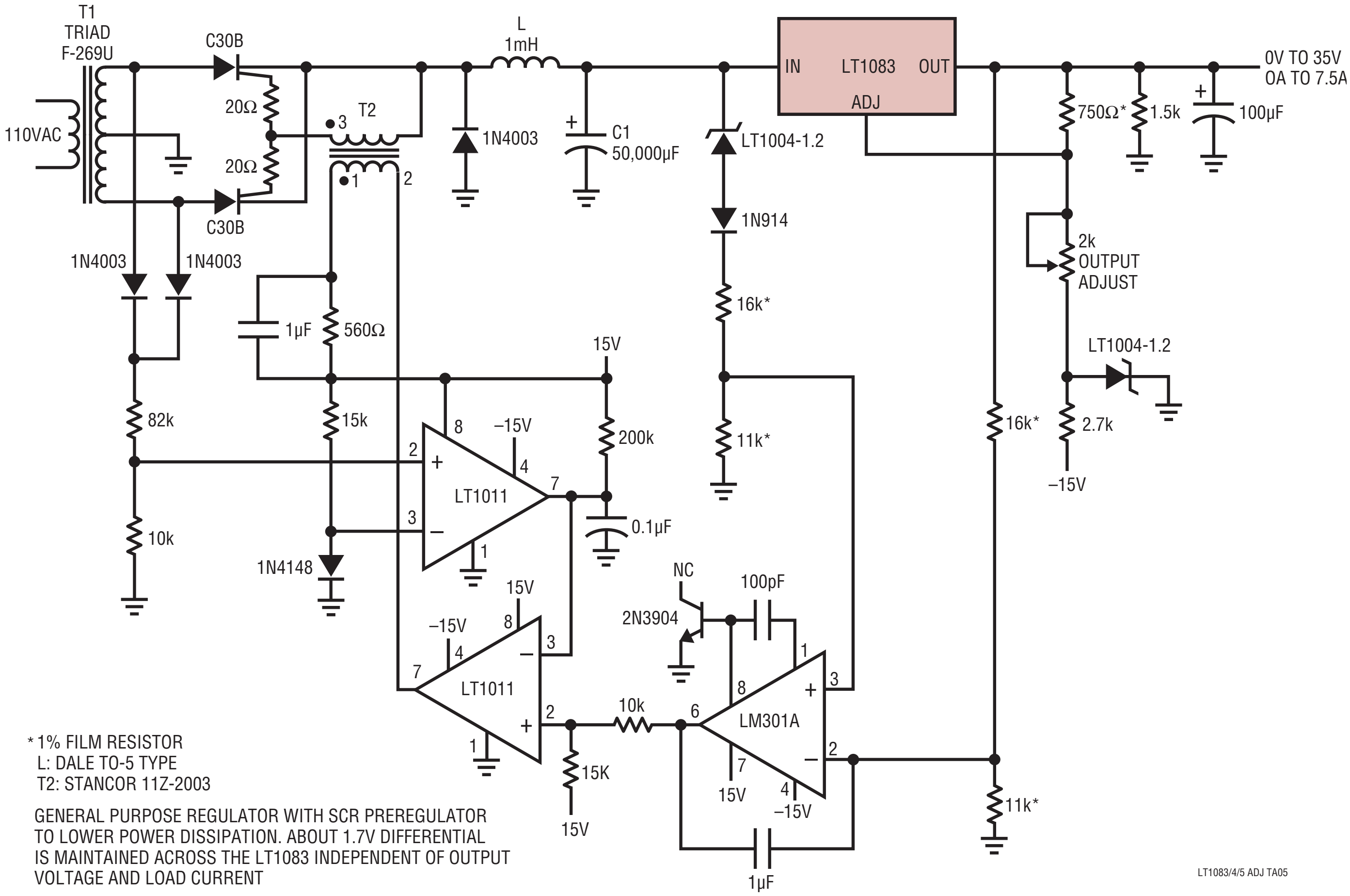
For the Power Transistor:

T_J = 75°C + 24W (1°C/W + 0.2°C/W + 1.6°C/W) = 142°C
142°C < 150°C = T_{JMAX} (Power Transistor Commercial Range)

In both cases the junction temperature is below the maximum rating for the respective sections, ensuring reliable operation.

TYPICAL APPLICATION

7.5A Variable Regulator

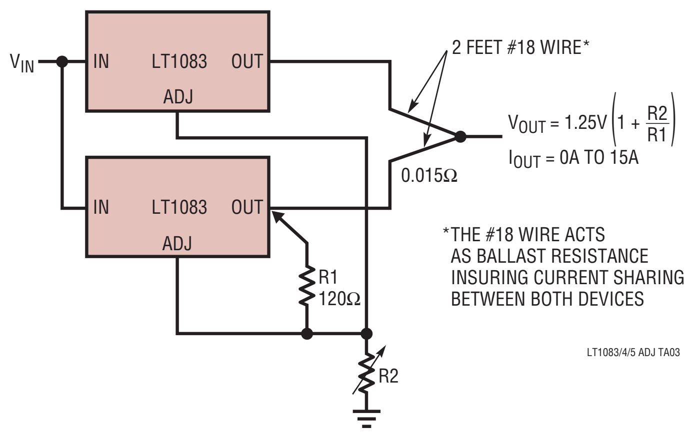


* 1% FILM RESISTOR
L: DALE TO-5 TYPE
T2: STANCOR 11Z-2003

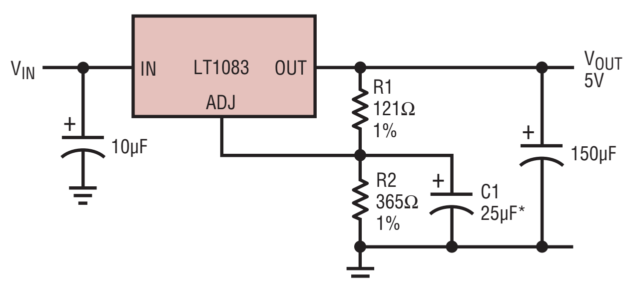
GENERAL PURPOSE REGULATOR WITH SCR PREREGULATOR TO LOWER POWER DISSIPATION. ABOUT 1.7V DIFFERENTIAL IS MAINTAINED ACROSS THE LT1083 INDEPENDENT OF OUTPUT VOLTAGE AND LOAD CURRENT

TYPICAL APPLICATION

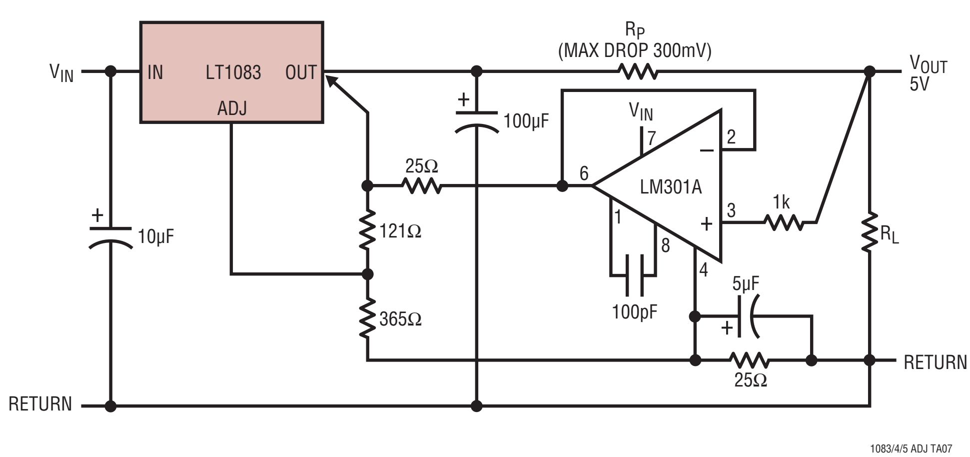
Paralleling Regulators



Improving Ripple Rejection

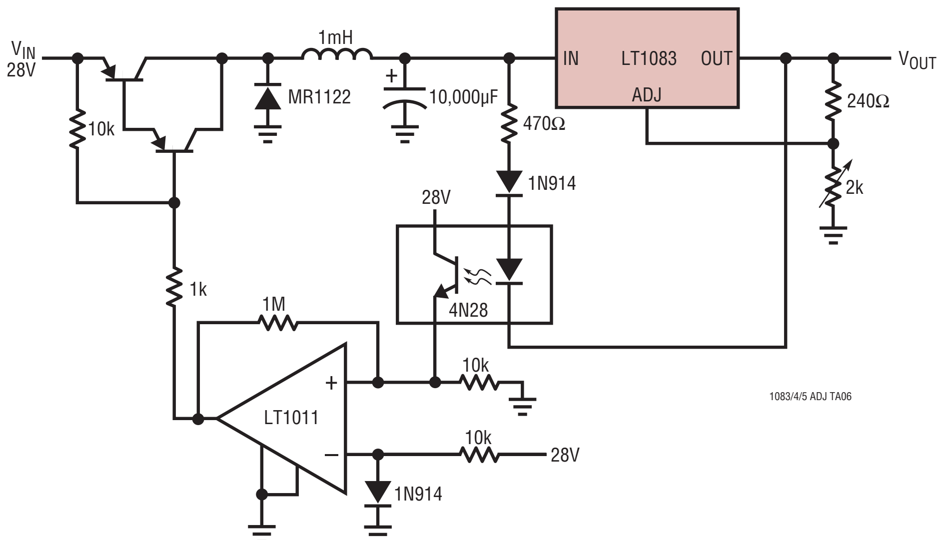


Remote Sensing

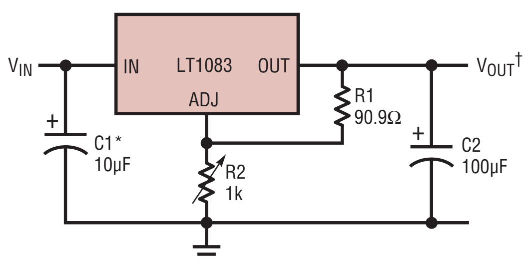


TYPICAL APPLICATION

High Efficiency Regulator with Switching Preregulator



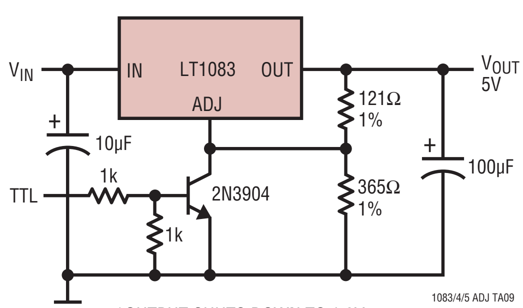
1.2V to 15V Adjustable Regulator



*NEEDED IF DEVICE IS FAR FROM FILTER CAPACITORS

$\dagger V_{OUT} = 1.25V\left(1 + \frac{R2}{R1}\right)$

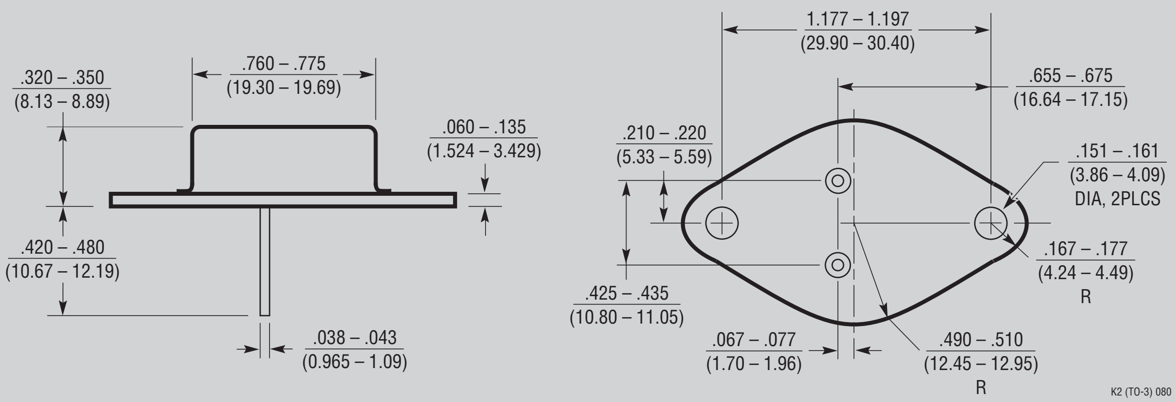
5V Regulator with Shutdown*



*OUTPUT SHUTS DOWN TO 1.3V

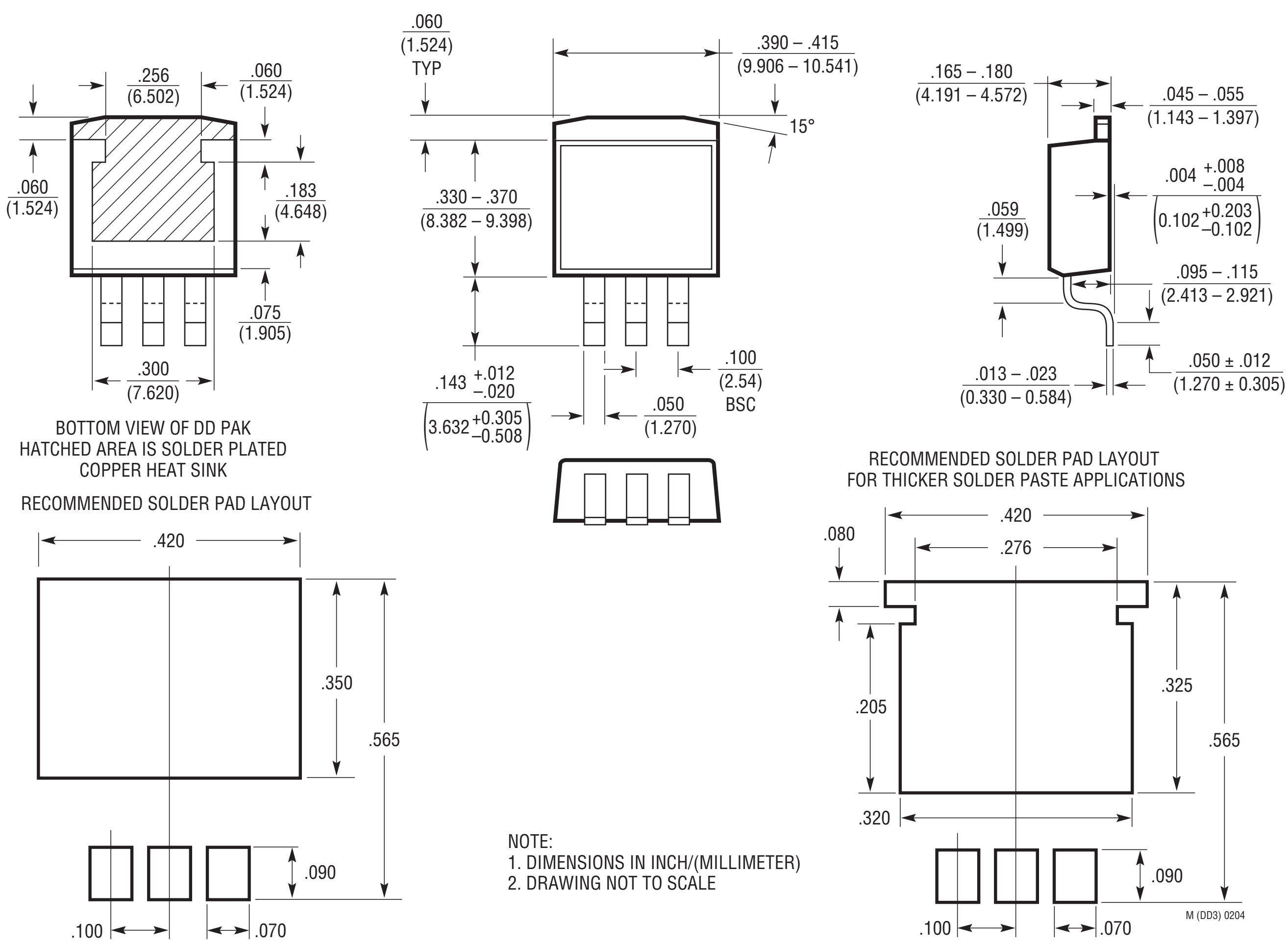
PACKAGE DESCRIPTION

K Package
2-Lead TO-3 Metal Can
(Reference LTC DWG # 05-08-1310)



OBSOLETE PACKAGE

M Package
3-Lead Plastic DD Pak
(Reference LTC DWG # 05-08-1460)



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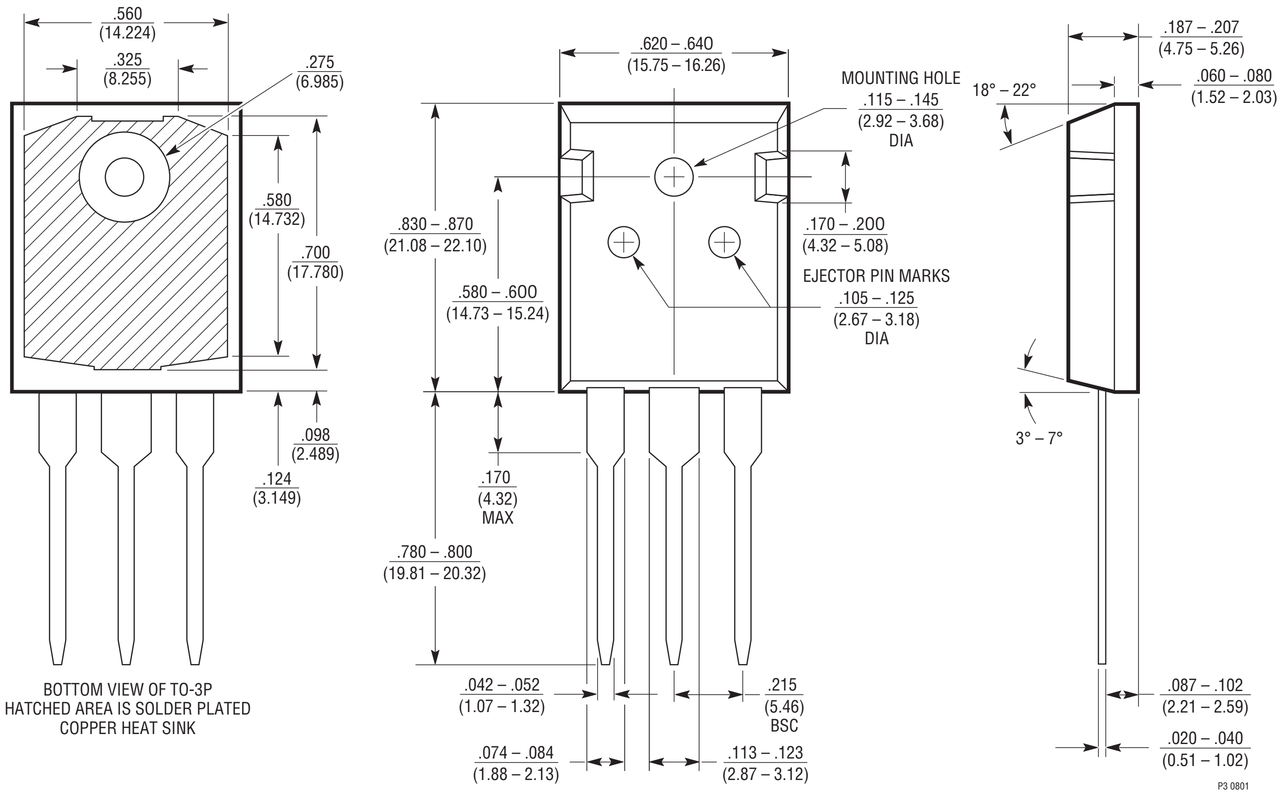
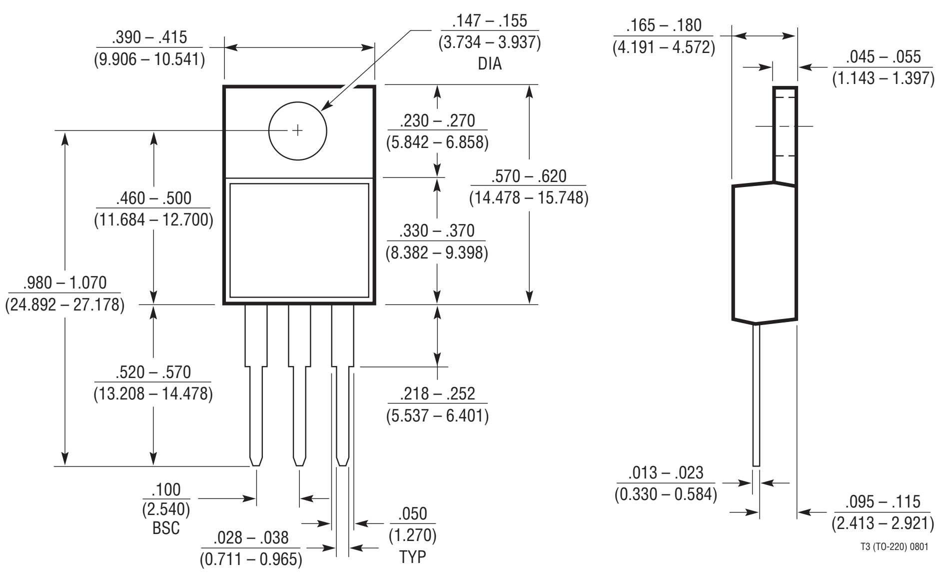
PACKAGE DESCRIPTION

P Package
3-Lead Plastic TO-3P (Similar to TO-247)
(Reference LTC DWG # 05-08-1450)

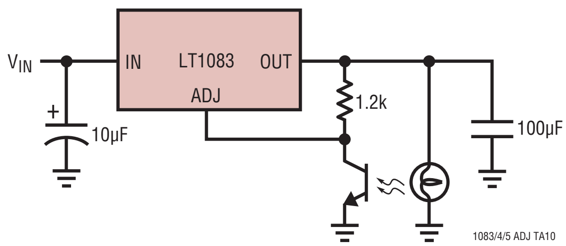


T Package
3-Lead Plastic TO-220
(Reference LTC DWG # 05-08-1420)

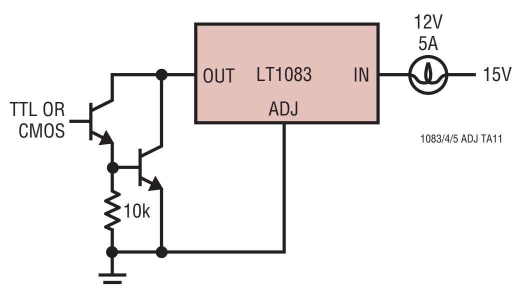


TYPICAL APPLICATIONS

Automatic Light Control



Protected High Current Lamp Driver



RELATED PARTS

PART NUMBER	DESCRIPTION	COMMENTS
LT1086	1.5A Low Dropout Regulator	Fixed 2.85V, 3.3V, 3.6V, 5V and 12V Output
LT1117	800mA Low Dropout Regulator	Fixed 2.85V, 3.3V, 5V or Adjustable Output
LT1584/LT1585/LT1587	7A/4.6A/3A Fast Response Low Dropout Regulators	For High Performance Microprocessors
LT1580	7A Very Low Dropout Linear Regulator	0.54V Dropout at 7A, Fixed 2.5V_{OUT} and Adjustable
LT1581	10A Very Low Dropout Linear Regulator	0.43V Dropout at 10A, Fixed 2.5V_{OUT} and Adjustable
LT1430	High Power Step-Down Switching Regulator	5V to 3.3V at 10A, >90% Efficiency
LT1575	UltraFast™ Transient Response LDO Controller	External MOSFET Pass Element
LT1573	UltraFast Transient Response LDO Controller	External PNP Pass Element

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