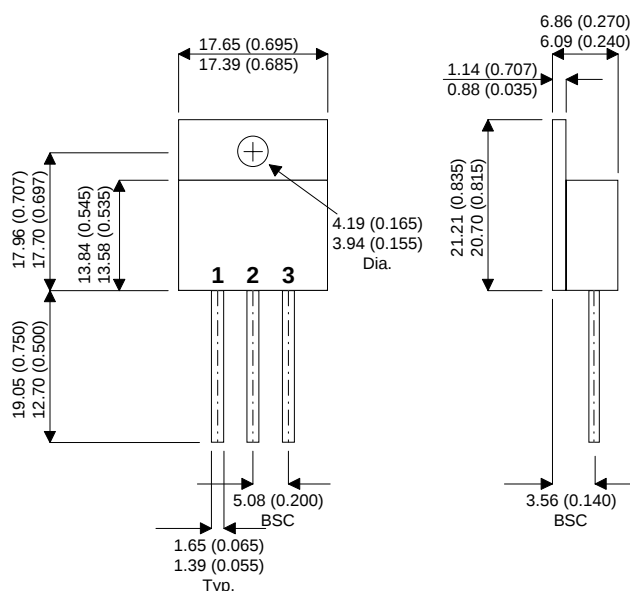


MECHANICAL DATA

Dimensions in mm



TO-258 METAL PACKAGE

Pin 1 – Adjust

Pin 2 – Vout

Pin 3 – Vin

7.5 AMP LOW DROPOUT POSITIVE ADJUSTABLE REGULATOR IN TO258 HERMETIC PACKAGE

FEATURES

- Adjustable Output Voltage
- Output Voltage Tolerance $\pm 1\%$
- Hermetic Isolated TO258
- Built in Thermal Overload Protection
- Short Circuit Current Limit
- Low Dropout Voltage
- Screening Options Available

The LM1083HN low drop positive adjustable regulator is designed to provide 7.5A with higher efficiency than a standard device. All internal circuitry is designed to operate down to 1V input/output differential.

ABSOLUTE MAXIMUM RATINGS @25°C

Power Dissipation (Pd)	Internally Limited
Input - Output Voltage Differential	35V
Operating Junction Temperature Range	-55°C to + 150°C
Storage Temperature Range	-65°C to + 150°C
Lead Temperature (Soldering 10 seconds)	300°C
Thermal Resistance:	
θ_{jc} (Isolated)	2.75°C/W
θ_{jc} (Non-Isolated)	2.3°C/W
Maximum Output Current	5.0A

ELECTRICAL CHARACTERISTICS (Per Diode)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_{REF} Reference Voltage	$V_{IN} - V_{OUT} = 3.0V$ $I_{OUT} = 10mA$ $T_A = 25^\circ C$	1.238		1.262	V
	$1.5V \leq V_{IN} - V_{OUT} \leq 25V$ $10mA \leq I_{OUT} \leq I_{FL}$ •	1.225		1.270	
$\frac{V_{OUT}}{V_{IN}}$ Line Regulation (Note 1)	$1.5 \leq V_{IN} - V_{OUT} \leq 15V$ $I_{OUT} = 10mA$ $T_A = 25^\circ C$ •			0.2	%
	$15V \leq V_{IN} - V_{OUT} \leq 35V$ $I_{OUT} = 10mA$			0.5	
$\frac{V_{OUT}}{V_{IN}}$ Load Regulation	$V_{IN} - V_{OUT} = 3.0V$ $T_A = 25^\circ C$ $10mA \leq I_{OUT} \leq I_{FL}$ •			0.3	%
	•			0.4	
V_{DO} Dropout Voltage	$I_{OUT} = I_{FL}$ $\Delta V_{REF} = 1\%$ •			1.5	V
Thermal Regulation	30ms pulse $T_A = +25^\circ C$			0.015	%W
$\frac{V_{IN}}{V_{OUT}}$ Ripple Rejection	$f = 120Hz$, $C_{Adj} = 25\mu F$ $C_{OUT} = 25\mu F$ (tantalum), $I_{FL} = 3.0A$ • $V_{IN} - V_{OUT} = 3.0V$	60			dB
I_{Adj} Adjust Pin Current	$1.5V \leq V_{IN} - V_{OUT} \leq 25V$ $10mA \leq I_{OUT} \leq I_{FL}$ •			120	μA
$^3I_{Adj}$ Adjust Pin Current Change	$1.5V \leq V_{IN} - V_{OUT} \leq 25V$ $10mA \leq I_{OUT} \leq I_{FL}$ •			5.0	μA
I_{Min} Minimum Load Current	$V_{IN} - V_{OUT} = 25V$ •			10	mA
I_{Lim} Current Limit	$V_{IN} - V_{OUT} = 5.0V$ •	8.0			A
	$V_{IN} - V_{OUT} = 25V$ •	0.4			
$\frac{V_{OUT}}{T}$ Temperature Stability (Note 2)	$T_j = -55$ to $+125^\circ C$ •			1.5	%
$\frac{V_{OUT}}{T}$ Long Term Stability (Note 2)	$T_A = +125^\circ C$, $t = 1000hrs$			1.0	

Notes:

- Line and Load Regulation are measured at a constant junction temperature using a low duty cycle pulse technique. Power dissipation is internally limited. Regulation is guaranteed up to maximum power dissipation of 60 W. Power dissipation is determined by the input/output differential voltage and the output current. Guaranteed maximum power dissipation is not available over the full input/output voltage range.
- Guaranteed by design, characterization or correlation to other tested parameters.
- Specification applies over the full operating temperature range.
- I_{FL} is defined as the minimum value of current limit as a function of input to output voltage.