



# UZ1084

## LINEAR INTEGRATED CIRCUIT

### 5A ADJUSTABLE/FIXED LOW DROPOUT LINEAR REGULATOR

#### DESCRIPTION

The UTC **UZ1084**-ADJ/Fixed voltages are low dropout three-terminal regulators with 5A output current capability. These devices have been optimized for low voltage applications including VTT bus termination, where transient response and minimum input voltage are critical.

On-chip thermal limiting provides protection against any combination of overload and ambient temperature that would create excessive junction temperatures.

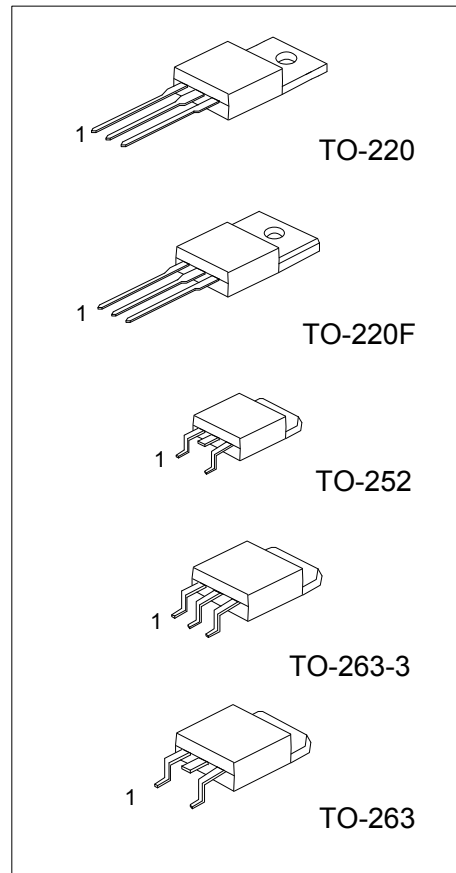
#### FEATURES

- \*Fast transient response
- \*Low dropout Voltage at up to 5A
- \*Load regulation : 0.5% typical
- \*On-chip thermal limiting

#### APPLICATIONS

- \*Desktop PCs, RISC and embedded processors' supply
- \*GTI, SSTL logic reference bus supply
- \*Low voltage V<sub>CC</sub> logic supply
- \*Battery-powered circuitry
- \*Post regulator for switching supply
- \*Cable and ADSL modems' DSP core supply
- \*Set Top Boxes and Web Boxes modules' supply

#### ORDERING INFORMATION



Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UZ1084L-xx-TA3-T	UZ1084G-xx-TA3-T	TO-220	A/G	O	I	Tube
UZ1084L-xx-TF3-T	UZ1084G-xx-TF3-T	TO-220F	A/G	O	I	Tube
UZ1084L-xx-TN3-R	UZ1084G-xx-TN3-R	TO-252	A/G	O	I	Tape Reel
UZ1084L-xx-TN3-T	UZ1084G-xx-TN3-T	TO-252	A/G	O	I	Tube
UZ1084L-xx-TQ2-R	UZ1084G-xx-TQ2-R	TO-263	A/G	O	I	Tape Reel
UZ1084L-xx-TQ2-T	UZ1084G-xx-TQ2-T	TO-263	A/G	O	I	Tube
UZ1084L-xx-TQ3-R	UZ1084G-xx-TQ3-R	TO-263-3	A/G	O	I	Tape Reel
UZ1084L-xx-TQ3-T	UZ1084G-xx-TQ3-T	TO-263-3	A/G	O	I	Tube

Note: 1. xx: Output voltage, refer to Marking Information.

2. A: ADJ (for adjustable regulator), G: GND (for fixed regulator), O: V<sub>OUT</sub>, I: V<sub>IN</sub>

<p>UZ1084L-xx-TA3-R</p> <p>(1)Packing Type (2)Package Type (3)Output Voltage Code (4)Lead Free</p>	<p>(1) R: Tape Reel, T: Tube (2) TA3: TO-220, TF3: TO-220F, TN3: TO-252, TQ2: TO-263, TQ3: TO-263-3 (3) xx: refer to Marking Information (4) G: Halogen Free, L: Lead Free</p>
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### MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
TO-220 TO-220F TO-252 TO-263 TO-263-3	15 :1.5V 18 :1.8V 25 :2.5V 33 :3.3V 50 :5.0V AD:ADJ	

### ■ ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
DC Input Voltage	V <sub>IN</sub>	15	V
Operating Temperature	T <sub>OPR</sub>	0 ~ +125	°C
Storage Temperature	T <sub>STG</sub>	-65 ~ 150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

### ■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-252	112	°C/W
	TO-220	54	°C/W
	TO-263/TO-263-3	64	°C/W
Junction to Case	TO-252	12	°C/W
	TO-220	4	°C/W
	TO-263/TO-263-3	4	°C/W

### ■ ELECTRICAL CHARACTERISTICS

**For UZ1084-Adjustable** (Operating Conditions: 4.75 ≤ V<sub>IN</sub> ≤ 5.25, T<sub>J</sub> = 25°C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reference Voltage	V <sub>REF</sub>	I <sub>OUT</sub> =10mA	1.23	1.25	1.27	V
Line Regulation	ΔV <sub>OUT</sub>	I <sub>OUT</sub> =10mA		0.5	2	%
Load Regulation	ΔV <sub>OUT</sub>	10mA ≤ I <sub>OUT</sub> ≤ 5A		0.5	2.5	%
Dropout Voltage	V <sub>D</sub>	ΔV <sub>REF</sub> %=2%, I <sub>O</sub> =5A			1.5	V
Current Limit	I <sub>LIMIT</sub>	(V <sub>IN</sub> -V <sub>OUT</sub> )=2V	5.5	6.5		A
Adjust Pin Current	I <sub>ADJ</sub>			35	100	μA
Adjust Pin Current Change	ΔI <sub>ADJ</sub>	1.5V ≤ (V <sub>IN</sub> -V <sub>OUT</sub> ) ≤ 5.75V, 10mA ≤ I <sub>OUT</sub> ≤ 5A			5	μA
Minimum Load Current	I <sub>O(MIN)</sub>	1.5V ≤ (V <sub>IN</sub> -V <sub>OUT</sub> ) ≤ 5.75V		5	10	mA
Thermal shutdown				150		°C

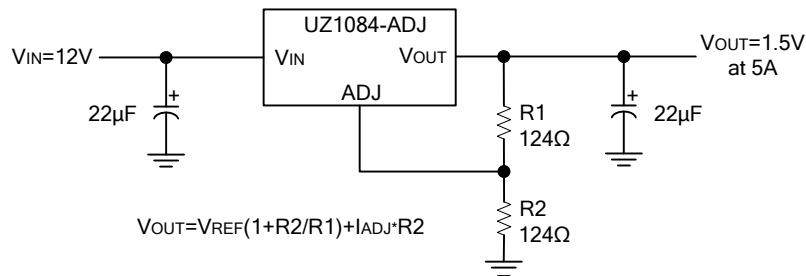
### For UZ1084-xx (Fixed Voltage)

(Operating Conditions: 1.5V ≤ (V<sub>IN</sub>-V<sub>OUT</sub>) ≤ 5.75V, T<sub>J</sub> = 25°C unless otherwise specified)

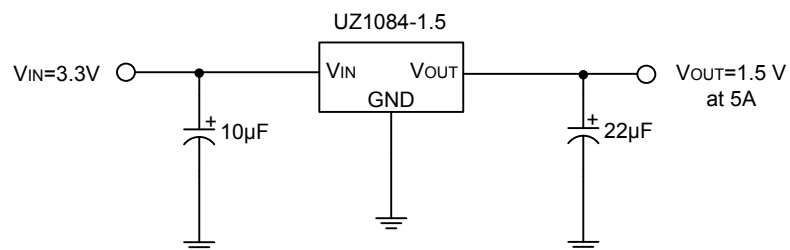
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP	MAX	UNIT		
Output Voltage	V <sub>OUT</sub>	UZ1084-15	I <sub>OUT</sub> =10mA	1%	1.485	1.5	1.515	V
			I <sub>OUT</sub> =10mA	2%	1.470	1.5	1.530	V
		UZ1084-18	I <sub>OUT</sub> =10mA	1%	1.782	1.8	1.818	V
			I <sub>OUT</sub> =10mA	2%	1.764	1.8	1.836	V
		UZ1084-25	I <sub>OUT</sub> =10mA	1%	2.475	2.5	2.525	V
			I <sub>OUT</sub> =10mA	2%	2.450	2.5	2.550	V
		UZ1084-33	I <sub>OUT</sub> =10mA	1%	3.267	3.3	3.333	V
			I <sub>OUT</sub> =10mA	2%	3.234	3.3	3.366	V
		UZ1084-50	I <sub>OUT</sub> =10mA	1%	4.950	5.0	5.050	V
			I <sub>OUT</sub> =10mA	2%	4.900	5.0	5.100	V
		Line Regulation	ΔV <sub>OUT</sub>	I <sub>OUT</sub> =10mA		0.5	2	%
		Load Regulation	ΔV <sub>OUT</sub>	10mA ≤ I <sub>OUT</sub> ≤ 5A		0.5	2.5	%
Dropout Voltage	V <sub>D</sub>	ΔV <sub>REF</sub> %=2%, I <sub>OUT</sub> =5A			1.5	V		
Current Limit	I <sub>LIMIT</sub>	(V <sub>IN</sub> -V <sub>OUT</sub> )=2V	5.5	6.5		A		
Minimum Load Current	ΔI <sub>ADJ</sub>	1.5V ≤ (V <sub>IN</sub> -V <sub>OUT</sub> ) ≤ 5.75V		5	10	mA		
Quiescent Current	I <sub>Q</sub>	V <sub>IN</sub> =12V		10	13	mA		
Thermal shutdown				150		°C		

## ■ TYPICAL APPLICATION CIRCUITS

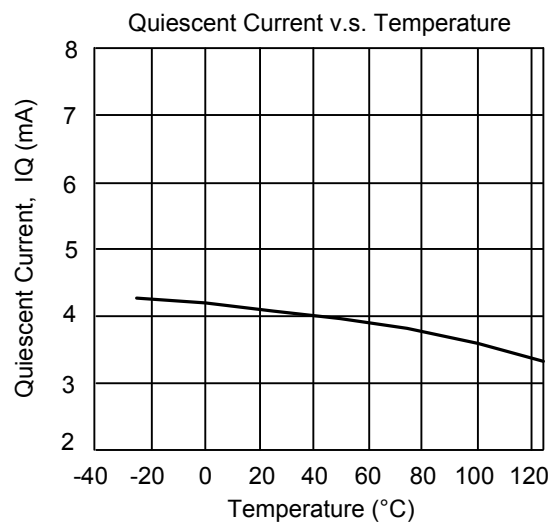
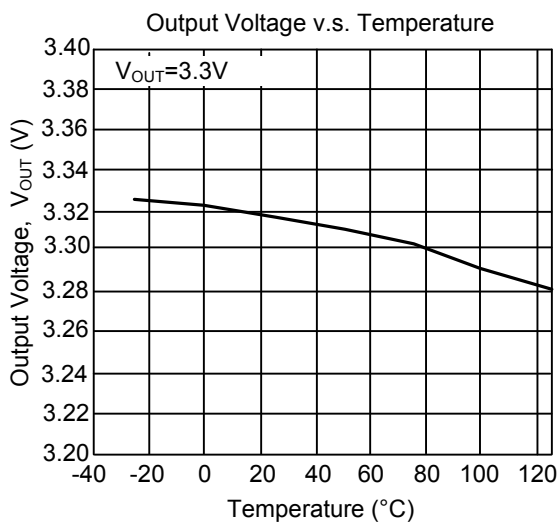
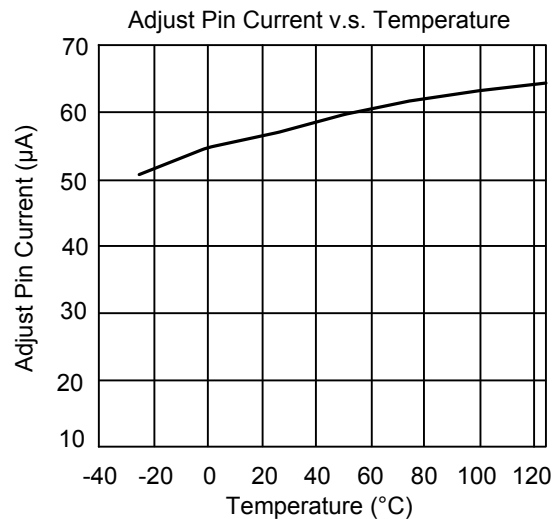
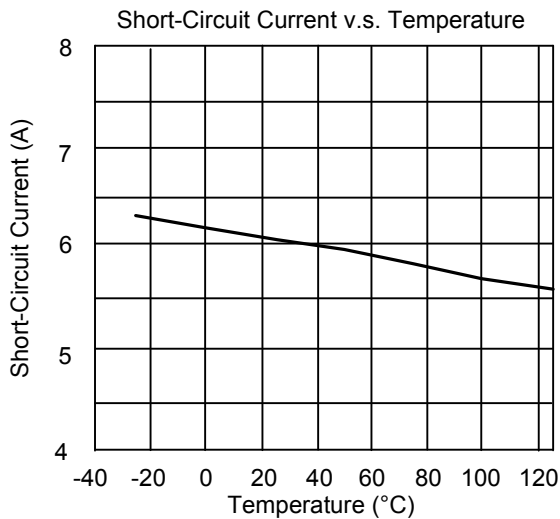
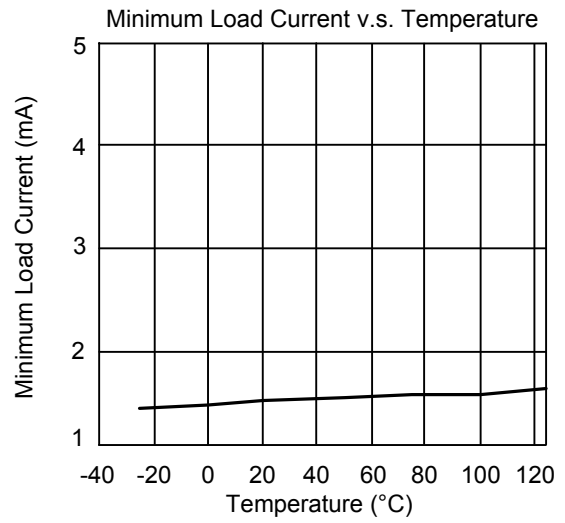
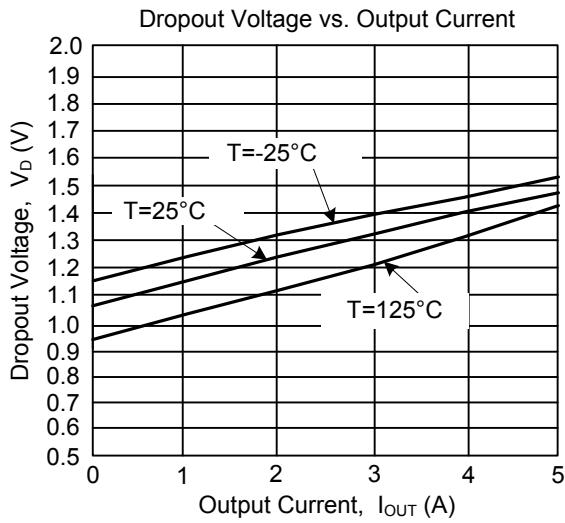
### Adjustable Voltage Regulator



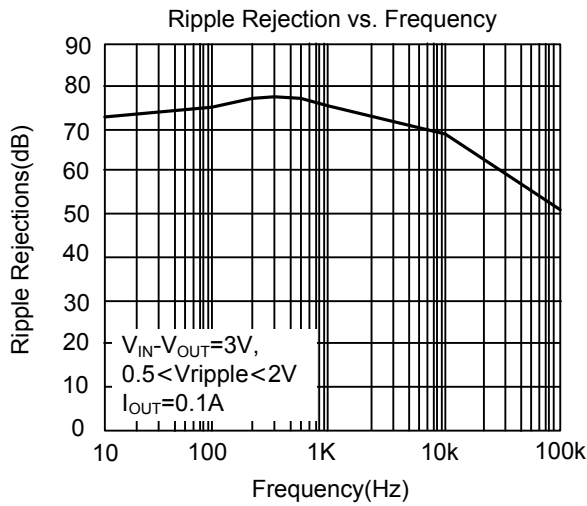
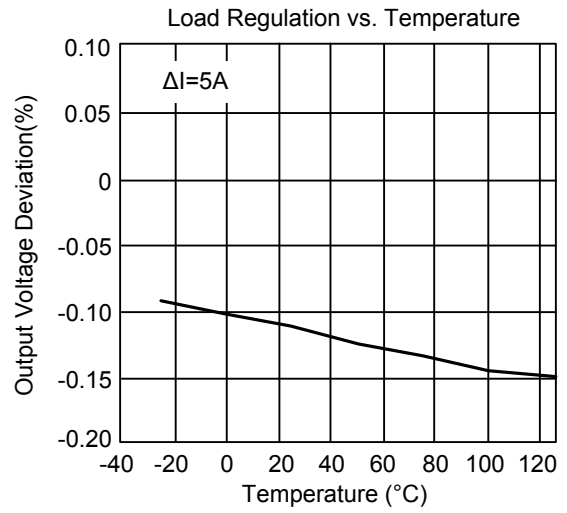
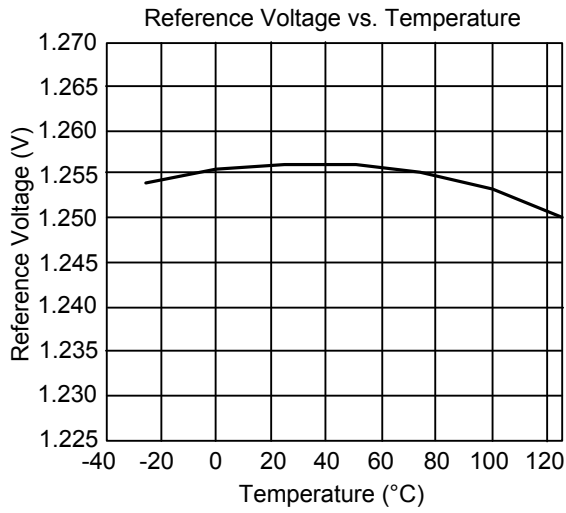
### Fixed Voltage Regulator



## ■ TYPICAL CHARACTERISTICS



## ■ TYPICAL CHARACTERISTICS(Cont.)



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