



## UZ1084

## LINEAR INTEGRATED CIRCUIT

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

#### DESCRIPTION

The UTC UZ1084-ADJ/Fixed voltage 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

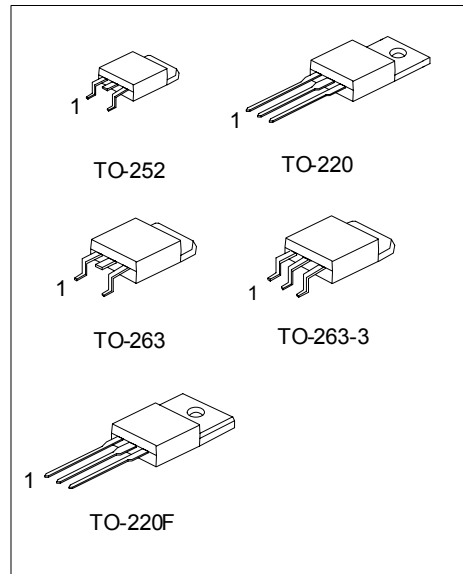
- \*Desktop PCs, RISC and embedded processors' supply
- \*GTI, SSTL logic Reference bus supply
- \*Low voltage  $V_{CC}$  logic supply
- \*Battery-powered circuitry
- \*Post regulator for switching supply
- \*Cable and ADSL modems' DSP core supply
- \*Set Top Boxes and Web Boxes modules' supply

#### ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
UZ1084-xx-TA3-R	UZ1084L-xx-TA3-R	TO-220	ADJ/ GND	Vout	Vin	Tape Reel
UZ1084-xx-TA3-T	UZ1084L-xx-TA3-T	TO-220				Tube
UZ1084-xx-TF3-T	UZ1084L-xx-TF3-T	TO-220F				Tape Reel
UZ1084-xx-TF3-T	UZ1084L-xx-TF3-T	TO-220F				Tube
UZ1084-xx-TN3-R	UZ1084L-xx-TN3-R	TO-252				Tape Reel
UZ1084-xx-TN3-T	UZ1084L-xx-TN3-T	TO-252				Tube
UZ1084-xx-TQ2-R	UZ1084L-xx-TQ2-R	TO-263				Tape Reel
UZ1084-xx-TQ2-T	UZ1084L-xx-TQ2-T	TO-263				Tube
UZ1084-xx-TQ3-R	UZ1084L-xx-TQ3-R	TO-263-3				Tape Reel
UZ1084-xx-TQ3-T	UZ1084L-xx-TQ3-T	TO-263-3				Tube

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

<p>UZ1084L-xx-TA3-R</p> <p>(1)Packing Type (2)Package Type (3)Output Voltage Code (4)Lead Plating</p>	<p>(1) R: Tape Reel, T: Tube (2) TA3: TO-220, TF3: TO-220F, TN3: TO-252, TQ 2: TO-263, TQ3: TO-263-3 (3) xx: refer to Marking Information (4) L: Lead Free Plating, Blank: Pb/Sn</p>
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\*Pb-free plating product number: UZ1084L-xx

### MARKING INFORMATION

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

### THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Thermal Resistance Junction-Case	TO-252	$\theta_{JC}$	12	°C/W
	TO-220		4	
	TO-263		4	
Thermal Resistance Junction-Ambient	TO-252	$\theta_{JA}$	112	°C/W
	TO-220		54	
	TO-263		64	

### ■ ABSOLUTE MAXIMUM RATINGS (Ta=25 )

PARAMETER	SYMBOL	RATINGS	UNIT
DC Input Voltage	V <sub>IN</sub>	15	V
Junction Temperature	T <sub>J</sub>	+125	°C
Temperature Range	T <sub>OPR</sub>	-20 ~ +85	
Storage temperature	T <sub>STG</sub>	-40 ~ +150	°C

Note: 1. Absolute maximum ratings are those values beyond which the device which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. The device is guaranteed to meet performance specification within 0 ~ +70 operating temperature range and assured by design from -20 ~ +85 , characteristic and correlation with static process control.

### ■ ELECTRICAL CHARACTERISTICS

#### For UZ1084-Adjustable

(Operating Conditions : 4.75 V<sub>IN</sub> 5.25, T<sub>J</sub> =25 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>	V <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</sub> (min)	1.5V (V <sub>IN</sub> -V <sub>OUT</sub> ) 5.75V		5	10	mA
Thermal shutdown				150		°C

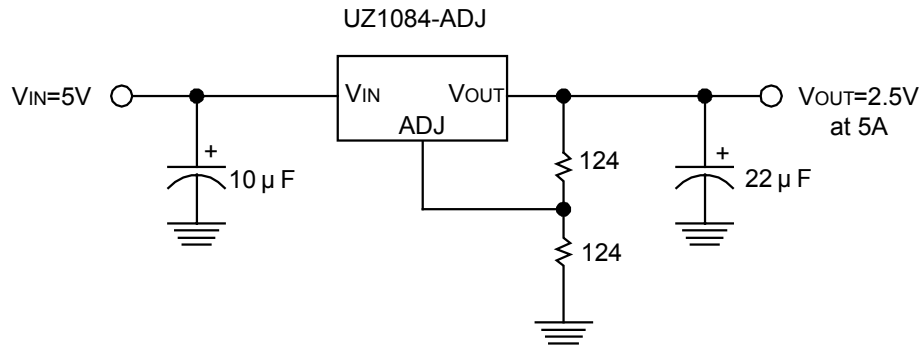
#### For UZ1084-xx(Fixed Voltage)

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

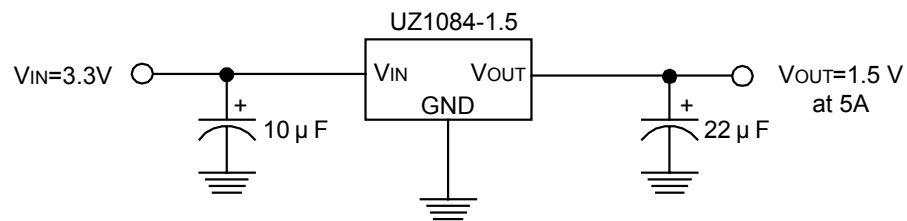
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP	MAX	UNIT			
Output Voltage	V <sub>OUT</sub>	UZ1084-15 I <sub>OUT</sub> =10mA	1%	1.485	1.5	1.515	V		
			2%	1.470	1.5	1.530			
		UZ1084-18 I <sub>OUT</sub> =10mA	1%	1.782	1.8	1.818			
			2%	1.764	1.8	1.836			
		UZ1084-25 I <sub>OUT</sub> =10mA	1%	2.475	2.5	2.525			
			2%	2.450	2.5	2.550			
		UZ1084-33 I <sub>OUT</sub> =10mA	1%	3.267	3.3	3.333			
			2%	3.234	3.3	3.366			
		UZ1084-50 I <sub>OUT</sub> =10mA	1%	4.950	5.0	5.050			
			2%	4.900	5.0	5.100			
		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>	V <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 CIRCUIT

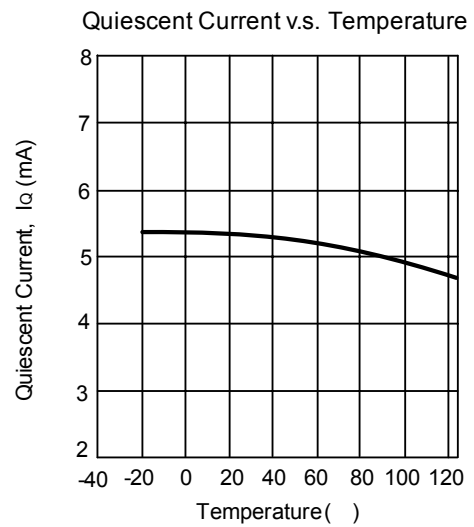
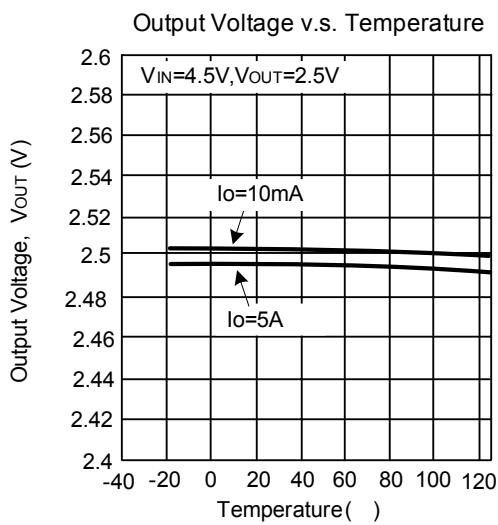
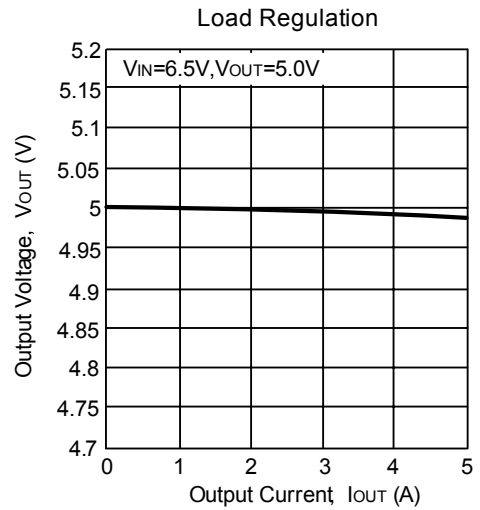
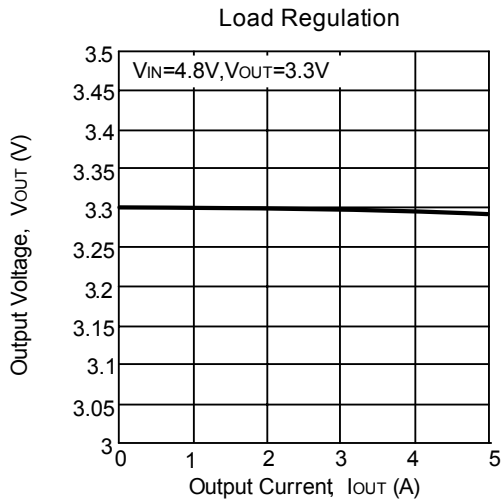
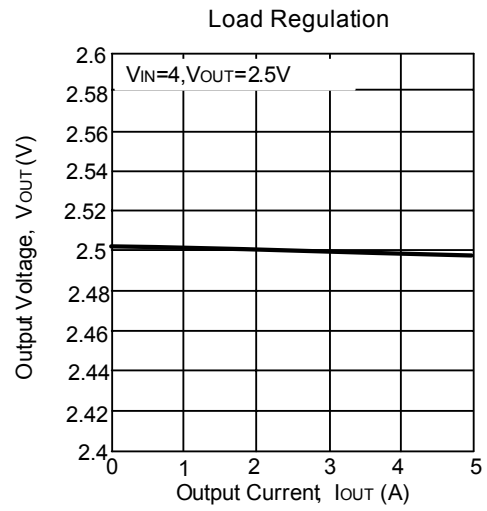
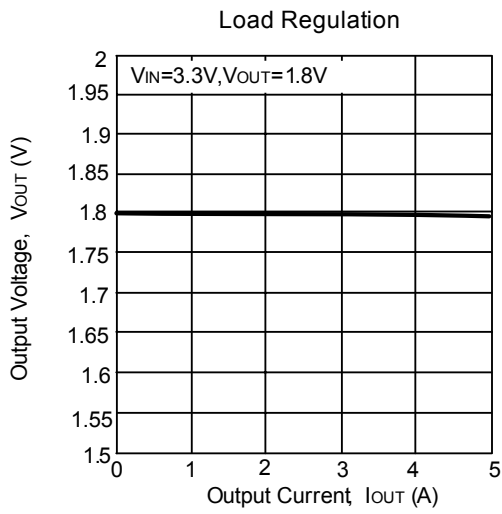
Adjustable Voltage Regulator



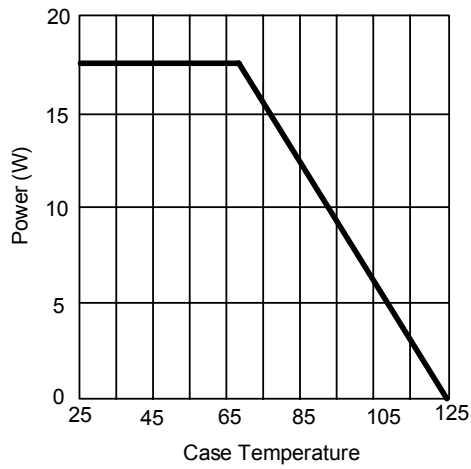
Fixed Voltage Regulator



## ■ TYPICAL CHARACTERISTICS



### ■ TYPICAL CHARACTERISTICS(Cont.)



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