



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.

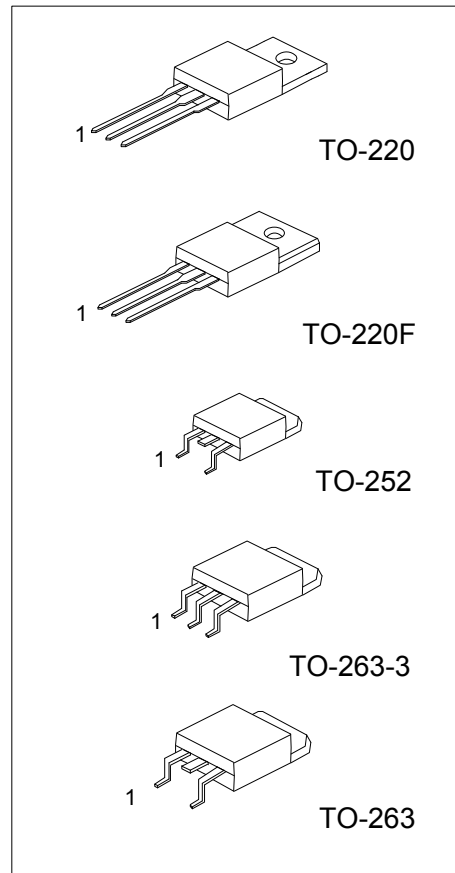
FEATURES

- *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_{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



Lead-free: UZ1084L-xx
 Halogen-free: UZ1084G-xx

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free	Halogen Free		1	2	3	
UZ1084-xx-TA3-T	UZ1084L-xx-TA3-T	UZ1084G-xx-TA3-T	TO-220	A/G	O	I	Tube
UZ1084-xx-TF3-T	UZ1084L-xx-TF3-T	UZ1084G-xx-TF3-T	TO-220F	A/G	O	I	Tube
UZ1084-xx-TN3-R	UZ1084L-xx-TN3-R	UZ1084G-xx-TN3-R	TO-252	A/G	O	I	Tape Reel
UZ1084-xx-TQ2-R	UZ1084L-xx-TQ2-R	UZ1084G-xx-TQ2-R	TO-263	A/G	O	I	Tape Reel
UZ1084-xx-TQ2-T	UZ1084L-xx-TQ2-T	UZ1084G-xx-TQ2-T	TO-263	A/G	O	I	Tube
UZ1084-xx-TQ3-R	UZ1084L-xx-TQ3-R	UZ1084G-xx-TQ3-R	TO-263-3	A/G	O	I	Tape Reel
UZ1084-xx-TQ3-T	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_{OUT}, I:V_{IN}

<p>UZ1084L-xx-TA3-R</p>	<p>(1) R: Tape Reel, T: Tube</p> <p>(2) TA3: TO-220, TF3: TO-220F, TN3: TO-252, TQ2: TO-263, TQ3: TO-263-3</p> <p>(3) xx: refer to Marking Information</p> <p>(4) G: Halogen Free, L: Lead Free, Blank: Pb/Sn</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 (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
DC Input Voltage	V _{IN}	15	V
Operating Junction Temperature	T _J	0 ~ +125	°C
Storage Temperature Range	T _{STG}	-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	θ _{JA}	112	°C/W
	TO-220		54	°C/W
	TO-263/TO-263-3		64	°C/W
Junction to Case	TO-252	θ _{JC}	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_{IN} ≤ 5.25, T_J = 25°C unless otherwise specified)

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

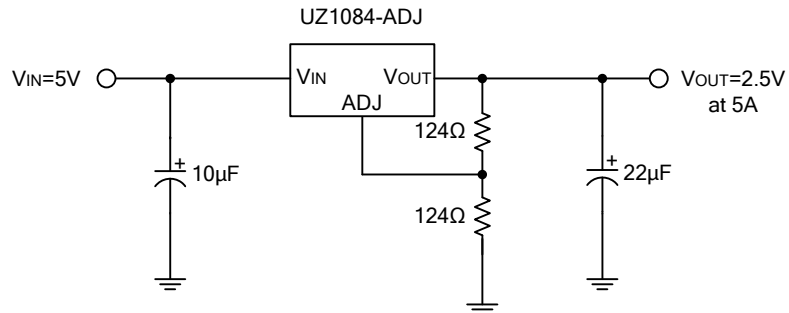
For UZ1084-xx (Fixed Voltage)

(Operating Conditions: 1.5V ≤ (V_{IN}-V_{OUT}) ≤ 5.75V, T_J=25°C unless otherwise specified)

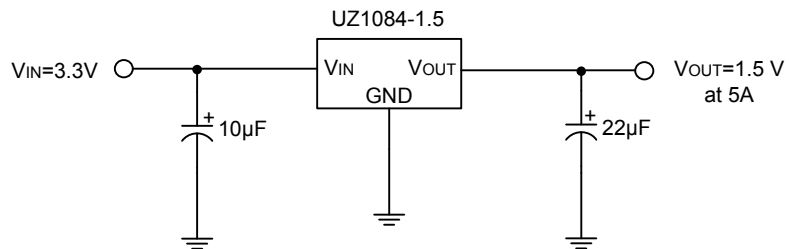
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP	MAX	UNIT		
Output Voltage	V _{OUT}	UZ1084-15	I _{OUT} =10mA	1%	1.485	1.5	1.515	V
				2%	1.470	1.5	1.530	V
		UZ1084-18	I _{OUT} =10mA	1%	1.782	1.8	1.818	V
				2%	1.764	1.8	1.836	V
		UZ1084-25	I _{OUT} =10mA	1%	2.475	2.5	2.525	V
				2%	2.450	2.5	2.550	V
		UZ1084-33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

■ TYPICAL APPLICATION CIRCUITS

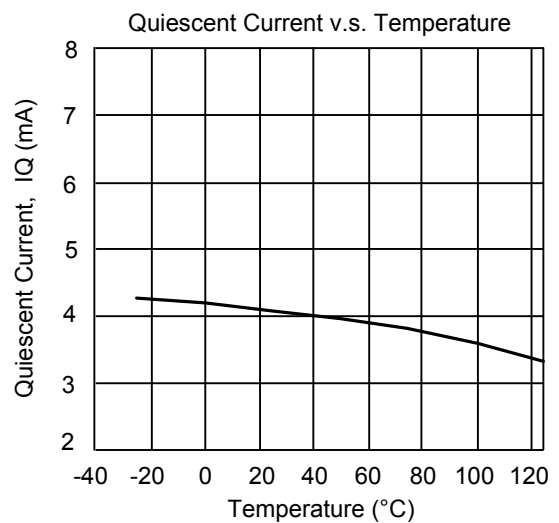
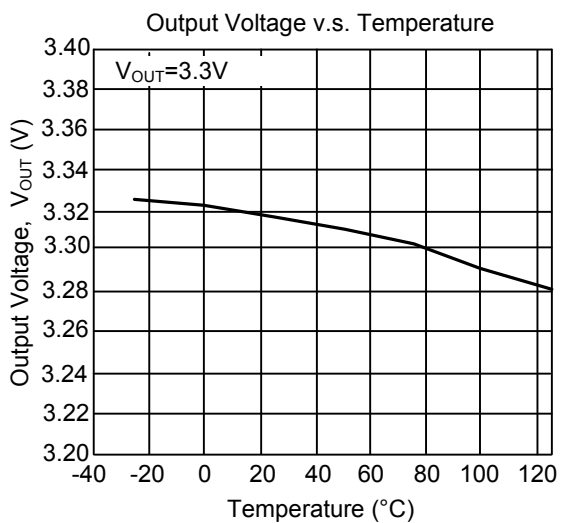
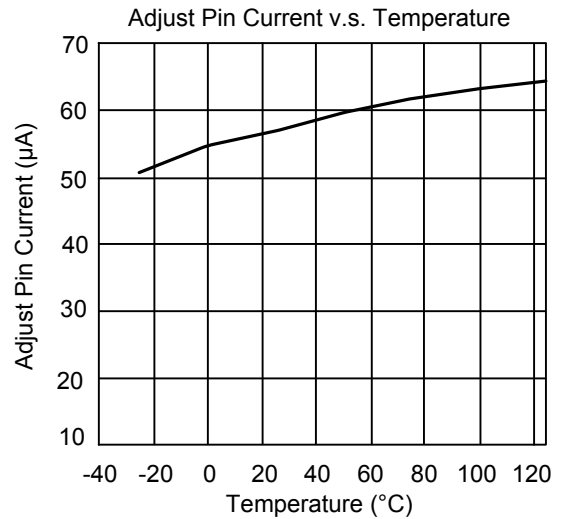
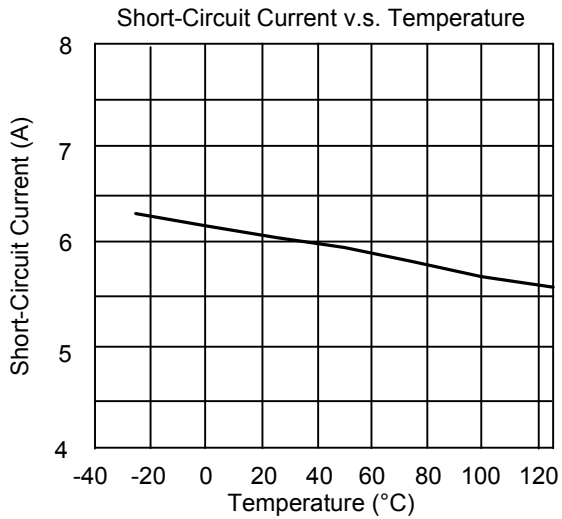
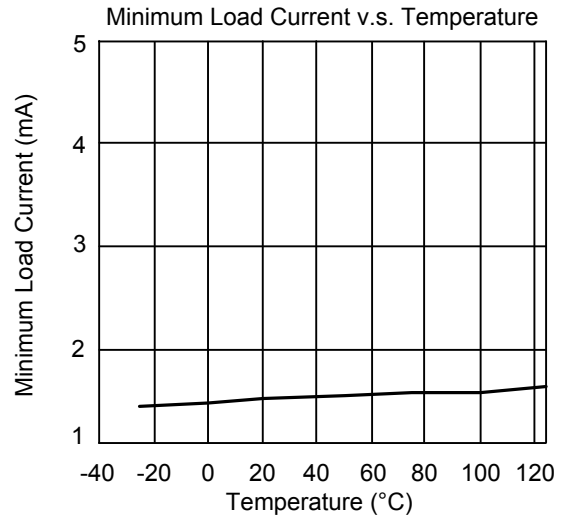
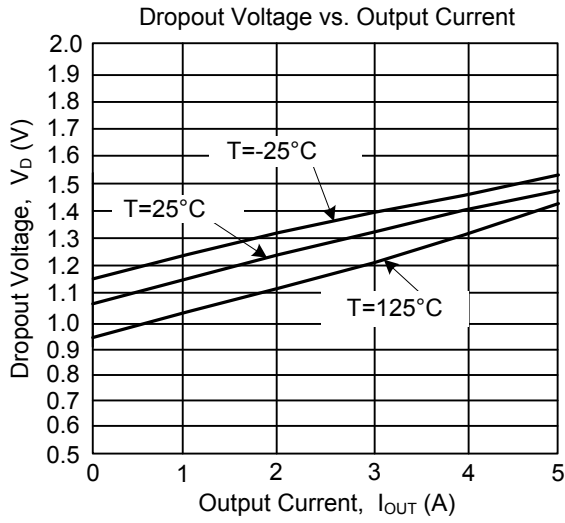
Adjustable Voltage Regulator



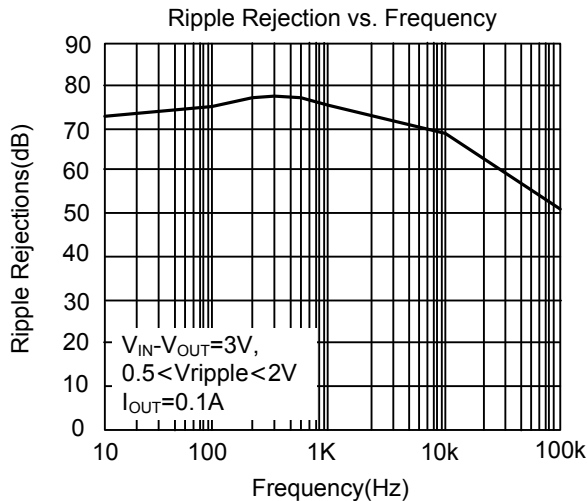
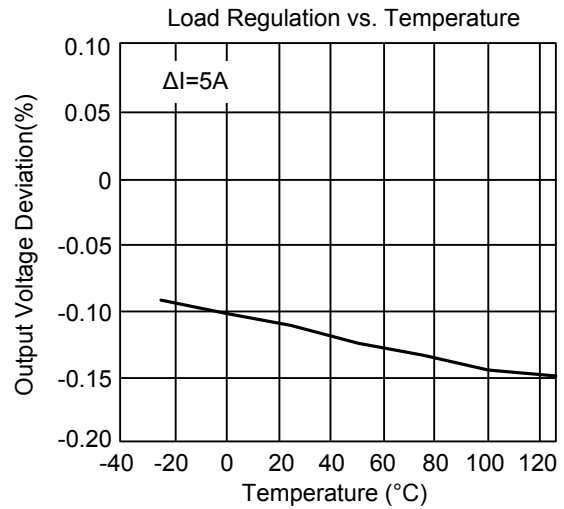
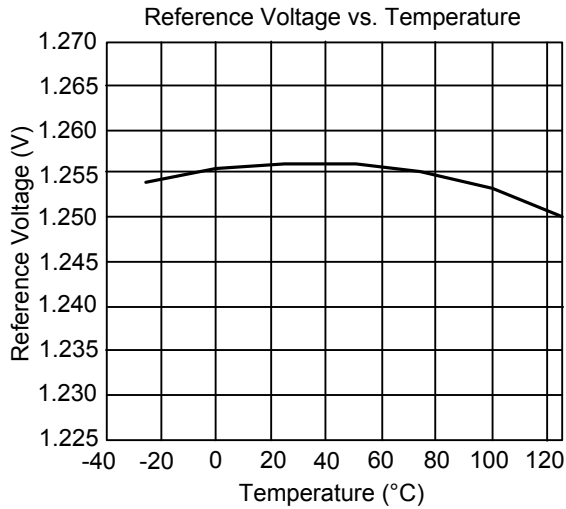
Fixed Voltage Regulator



TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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