



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

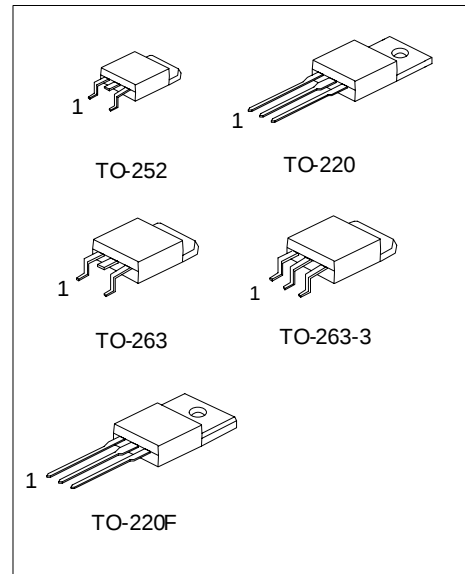
- *Desktop PCs, RISC and embedded processors' supply
- *GTI, SSTL logic Reference bus supply
- *Low voltage V_{CC} logic supply
- *Battery-powered circuitry
- *Post regulator for switching supply
- *Cable and ADSL modems' DSP core supply
- *Set Top Boxes and Web Boxes modules' supply

ORDERING INFORMATION

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

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

	UZ1084L-xx-TA3-A-R
	(1)Packing Type
	(2)Pin Assignment
	(3)Package Type
	(4)Output Voltage Code
	(5)Lead Plating
(1) R: Tape Reel, T: Tube	
(2) refer to Pin Assignment	
(3) TA3: TO-220, TF3: TO-220F, TN3: TO-252, TQ 2: TO-263, TQ3: TO-263-3	
(4) xx: refer to Marking Information	
(5) L: Lead Free Plating, Blank: Pb/Sn	



*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	50 :5.0V	
TO-263-3	AD :ADJ	

THERMAL DATA

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

■ ABSOLUTE MAXIMUM RATINGS (Ta=25 °C)

PARAMETER	SYMBOL	RATINGS	UNIT
DC Input Voltage	V_{IN}	15	V
Junction Temperature	T_J	+125	°C
Temperature Range	T_{OPR}	-20 ~ +85	
Storage temperature	T_{STG}	-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 °C operating temperature range and assured by design from -20 ~ +85 °C, characteristic and correlation with static process control.

■ 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	$V_{REF}\% = 2\%$, $I_O = 5A$			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

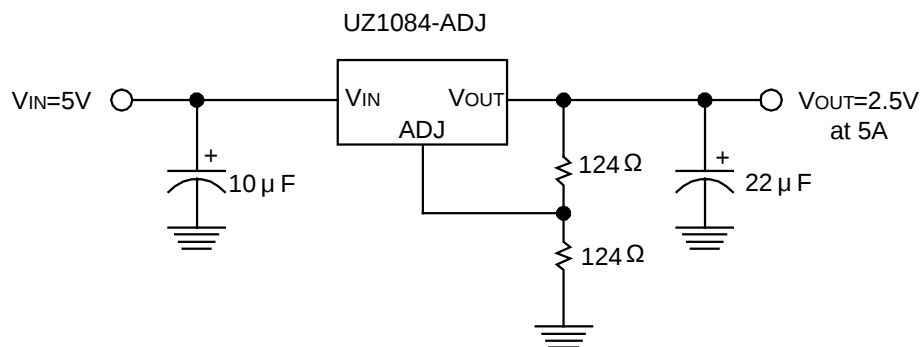
For UZ1084-xx(Fixed Voltage)

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

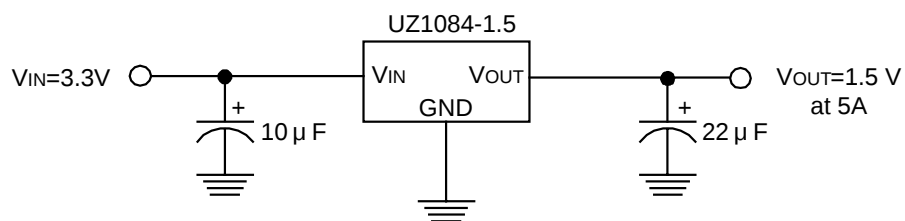
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP	MAX	UNIT
Output Voltage	V_{OUT}	UZ1084-15 $I_{OUT}=10mA$	1%	1.485	1.5	1.515
			2%	1.470	1.5	1.530
		UZ1084-18 $I_{OUT}=10mA$	1%	1.782	1.8	1.818
			2%	1.764	1.8	1.836
		UZ1084-25 $I_{OUT}=10mA$	1%	2.475	2.5	2.525
			2%	2.450	2.5	2.550
		UZ1084-33 $I_{OUT}=10mA$	1%	3.267	3.3	3.333
			2%	3.234	3.3	3.366
		UZ1084-50 $I_{OUT}=10mA$	1%	4.950	5.0	5.050
			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	$V_{REF}\% = 2\%$, $I_{OUT}=5A$			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 CIRCUIT

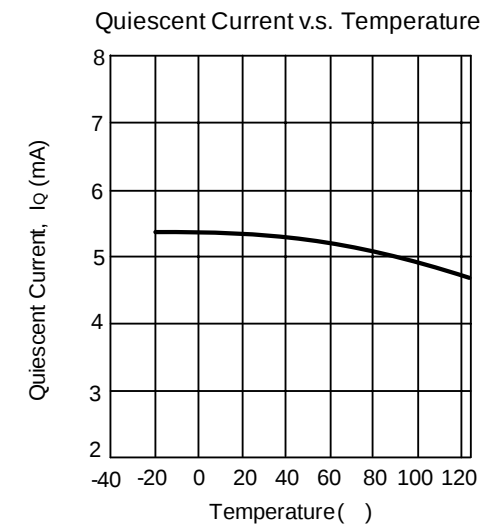
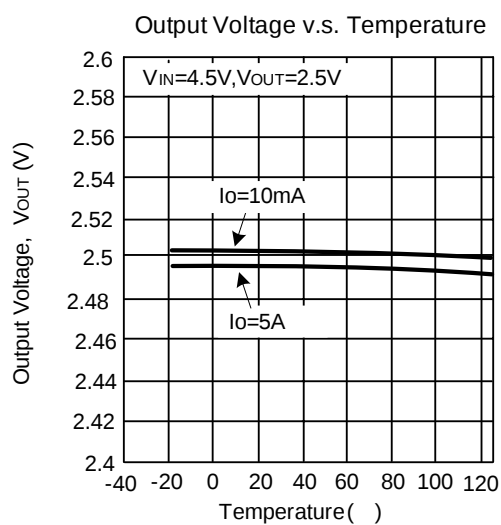
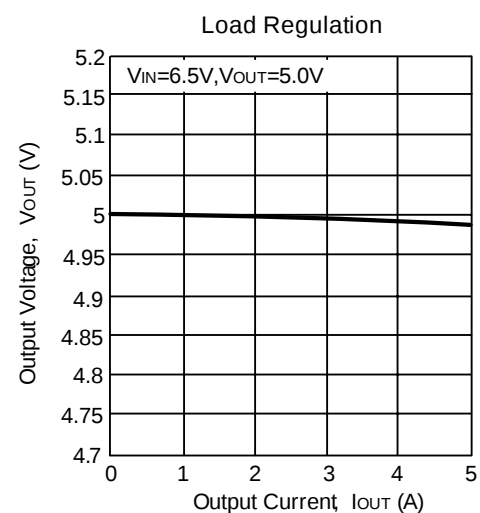
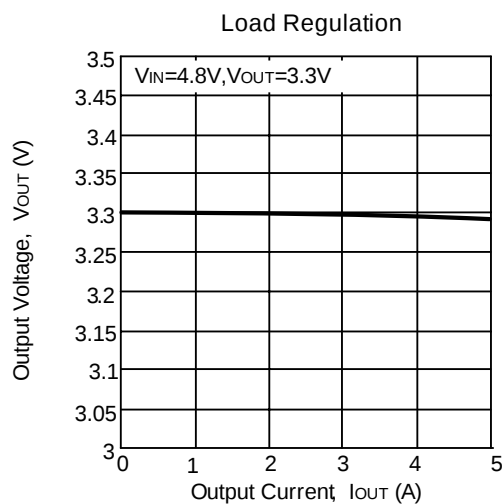
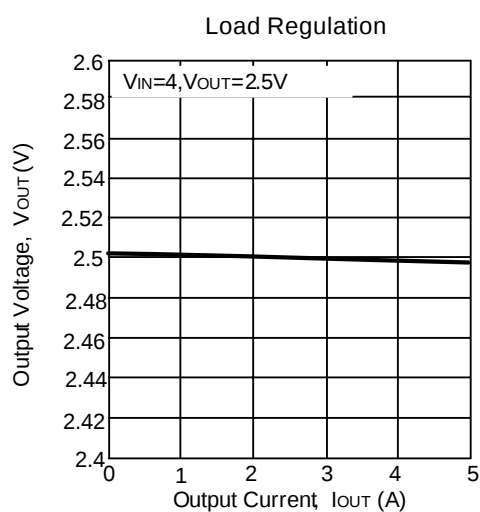
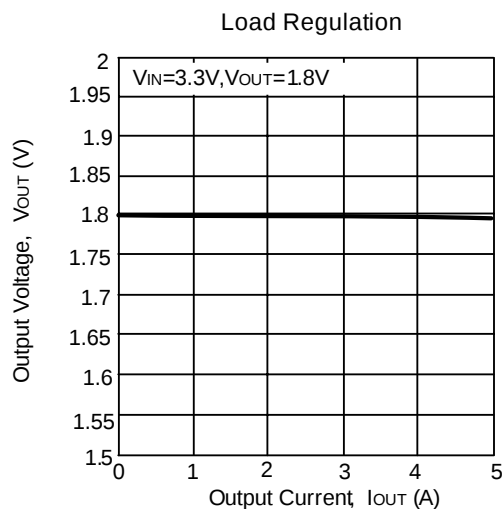
Adjustable Voltage Regulator



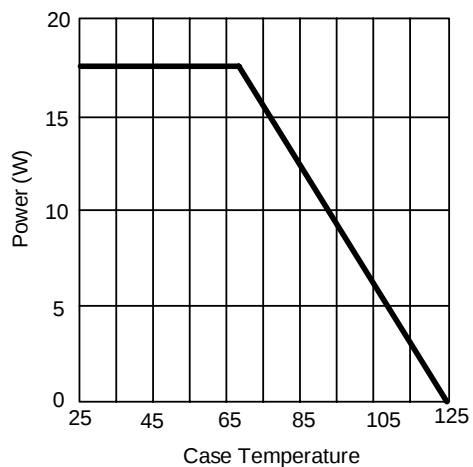
Fixed Voltage Regulator



■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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