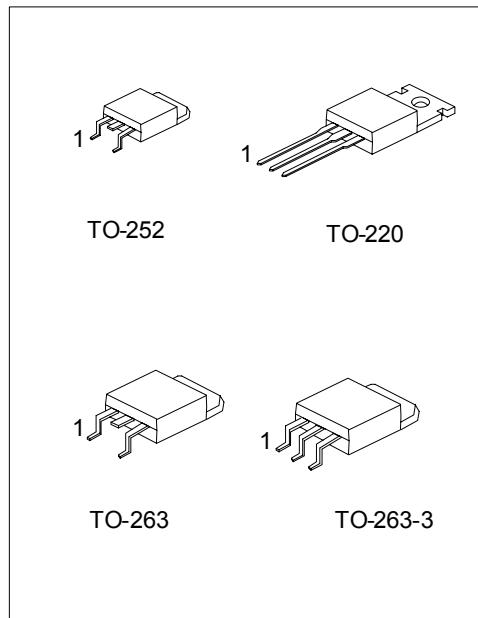


3A ADJUSTABLE/FIXED LOW DROPOUT LINEAR REGULATOR

■ DESCRIPTION

The UZ1085-xx series are low dropout three-terminal regulators with 3A 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.

Current limit is trimmed to ensure specified output current and controlled short-circuit current. On-chip thermal limiting provides protection against any combination of overload and ambient temperature that would create excessive junction temperatures.



*Pb-free plating product number: UZ1085L-xx

- *Fast transient response
- *Low dropout voltage at up to 3A
- *Load regulation: 0.05% typical
- *Trimmed current limit
- *On-chip thermal limiting

■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
UZ1085-xx-TA3-A-T	UZ1085L-xx-TA3-A-T	TO-220	A/G	O	I	Tube
UZ1085-xx-TN3-A-R	UZ1085L-xx-TN3-A-R	TO-252	A/G	O	I	Tape Reel
UZ1085-xx-TN3-A-T	UZ1085L-xx-TN3-A-T	TO-252	A/G	O	I	Tube
UZ1085-xx-TQ2-A-R	UZ1085L-xx-TQ2-A-R	TO-263	A/G	O	I	Tape Reel
UZ1085-xx-TQ2-A-T	UZ1085L-xx-TQ2-A-T	TO-263	A/G	O	I	Tube
UZ1085-xx-TQ3-A-R	UZ1085L-xx-TQ3-A-R	TO-263-3	A/G	O	I	Tape Reel
UZ1085-xx-TQ3-A-T	UZ1085L-xx-TQ3-A-T	TO-263-3	A/G	O	I	Tube

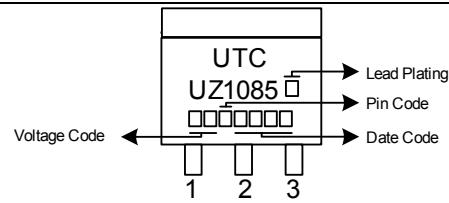
Note: 1. xx: Output Voltage, refer to Marking Information.

2. A: ADJ (for adjustable regulator), G: GND (for fixed regulator)

 UZ1085L-xx-TA3-A-T	(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, TN3: TO-252, TQ2: TO-263, TQ3: TO-263-3 (4) xx: refer to Marking Information (5) L: Lead Free Plating Blank: Pb/Sn
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■ MARKING INFORMATION

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



■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Thermal Resistance Junction-Case	Θ_{JC}	TO-252	°C/W
		TO-220	
		TO-263	

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V _{IN}	18	V
(V _{IN} – V _{OUT}) * I _{OUT}		See Figure 1	
Junction Temperature	T _J	+125	°C
Operating Temperature	T _{OPR}	-20 ~ +85	°C
Storage Temperature	T _{STG}	-40 ~ +150	°C

Note 1. 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.

2. The device is guaranteed to meet performance specification within 0°C~+70°C operating temperature range and assured by design from -20°C~+85°C.

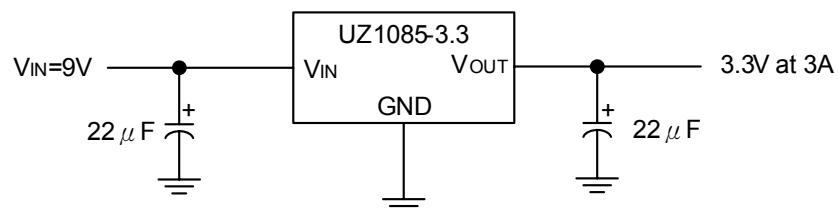
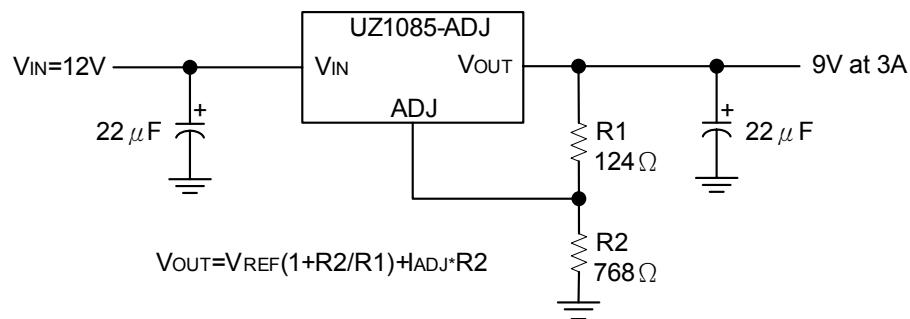
■ ELECTRICAL CHARACTERISTICS (Ta=25°C, C_{OUT}=22 μF, unless otherwise specified.)**For UZ1085-ADJ(Adjustable)**

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Reference Voltage	V _{REF}	1.5V ≤ (V _{IN} – V _{OUT}) ≤ 8.25V 10mA ≤ I _{OUT} ≤ 3A	1.225	1.25	1.275	V
Line Regulation	ΔV _{OUT}	(V _{OUT} + 1.5V) ≤ V _{IN} ≤ 12V, I _{OUT} = 10mA		0.005	0.2	%
Load Regulation	ΔV _{OUT}	(V _{IN} – V _{OUT}) = 3V, 10mA ≤ I _{OUT} ≤ 3A		0.05	0.5	%
Dropout Voltage	V _D	△V _{REF} % = 1%, I _{OUT} = 3A		1.30	1.40	V
Current Limit	I _{LIMIT}	(V _{IN} – V _{OUT}) = 2V	3.1	4		A
Adjust Pin Current	I _{adj}			35	120	μA
Adjust Pin Current Change	ΔI _{adj}	1.5V ≤ (V _{IN} – V _{OUT}) ≤ 12V, 10mA ≤ I _{OUT} ≤ 3A		0.2	5	μA
Minimum Load Current	I _{O(MIN)}	1.5V ≤ (V _{IN} – V _{OUT}) ≤ 12V			10	mA
Quiescent Current	I _Q	V _{IN} = 12V		4	13	mA
Ripple Rejection	RR	f = 120Hz, Tantalum, (V _{IN} – V _{OUT}) = 3V I _{OUT} = 3A	60	72		dB
Thermal Regulation		Ta = 25°C, 30ms pulse		0.004	0.02	%/W
Temperature Stability	ΔV _{OUT}			0.5		%
Long-Term Stability	ΔV _{OUT}	Ta = 125°C, 1000hr		0.03	1.0	%
Output Noise(% of V _{OUT})	eN	Ta = 25°C, 10Hz ≤ f ≤ 10kHz		0.003		%
Thermal Shutdown				150		°C

For UZ1085-xx(Fixed Voltage)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	UZ1085-15	V _{OUT}	3.0V ≤ V _{IN} ≤ 8.5V, 10mA ≤ I _{OUT} ≤ 3A	1.470	1.5	1.530
	UZ1085-18		3.3V ≤ V _{IN} ≤ 8.8V, 10mA ≤ I _{OUT} ≤ 3A	1.764	1.8	1.830
	UZ1085-25		4.0V ≤ V _{IN} ≤ 9.5V, 10mA ≤ I _{OUT} ≤ 3A	2.450	2.5	2.550
	UZ1085-33		4.8V ≤ V _{IN} ≤ 10.3V, 10mA ≤ I _{OUT} ≤ 3A	3.234	3.3	3.366
	UZ1085-50		6.5V ≤ V _{IN} ≤ 12V, 10mA ≤ I _{OUT} ≤ 3A	4.900	5.0	5.100
Line Regulation	ΔV _{OUT}	(V _{OUT} + 1.5V) ≤ V _{IN} ≤ 12V, I _{OUT} = 10mA		0.005	0.2	%
Load Regulation	ΔV _{OUT}	(V _{IN} – V _{OUT}) = 3V, 10mA ≤ I _{OUT} ≤ 3A		0.05	0.5	%
Dropout Voltage	V _D	△V _{REF} % = 1%, I _{OUT} = 3A		1.30	1.40	V
Current Limit	I _{LIMIT}	(V _{IN} – V _{OUT}) = 2V	3.1	4		A
Minimum Load Current	ΔI _{adj}	1.5V ≤ (V _{IN} – V _{OUT}) ≤ 12V			10	mA
Quiescent Current	I _Q	V _{IN} = 12V		4	13	mA
Ripple Rejection	RR	f = 120Hz, Tantalum, (V _{IN} – V _{OUT}) = 3V, I _{OUT} = 3A	60	72		dB
Thermal Regulation		Ta = 25°C, 30ms pulse		0.004	0.02	%/W
Temperature Stability	ΔV _{OUT}	Ta = 125°C, 1000hr		0.5		%
Long-Term Stability	ΔV _{OUT}			0.03	1.0	%
Output Noise(% of V _{OUT})	eN	Ta = 25°C, 10Hz ≤ f ≤ 10kHz		0.003		%
Thermal shutdown				150		°C

■ TYPICAL APPLICATION CIRCUIT



■ TYPICAL CHARACTERISTICS

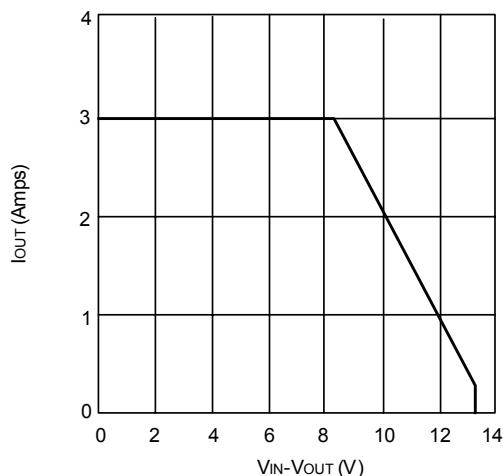


Figure 1. Absolute Maximum Safe Operating Area

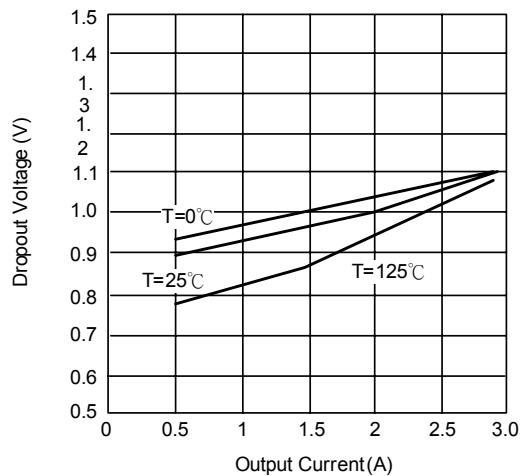


Figure 2. Dropout Voltage vs. Output Current

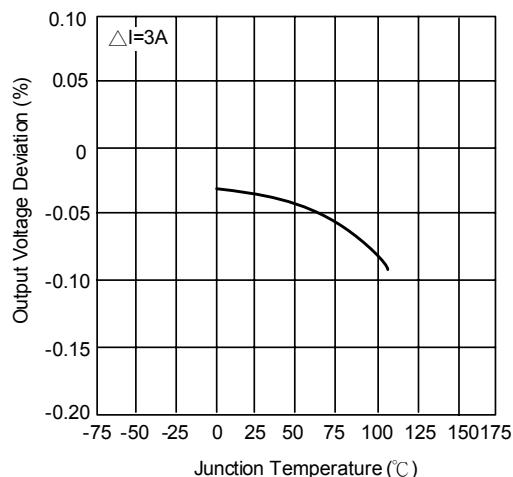


Figure 3. Load Regulation vs. Temperature

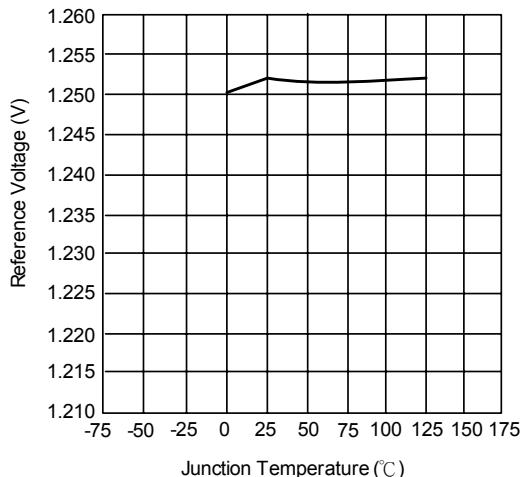


Figure 4. Reference Voltage vs. Temperature

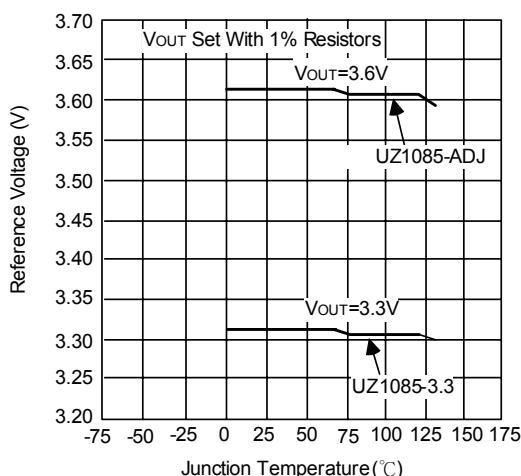


Figure 5. Output Voltage vs. Temperature

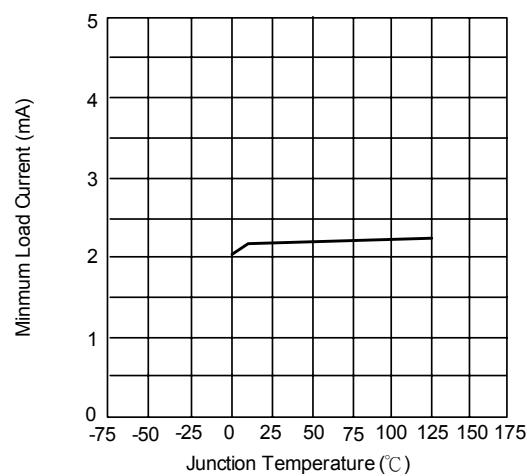


Figure 6. Minimum Load Current vs. Temperature

■ TYPICAL CHARACTERISTICS(Cont.)

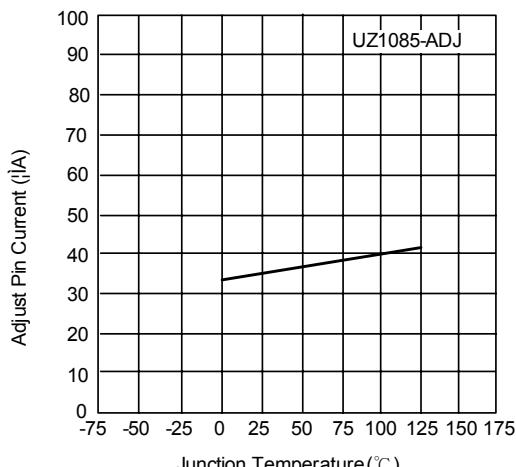


Figure 7. Adjust Pin Current vs.Temperature

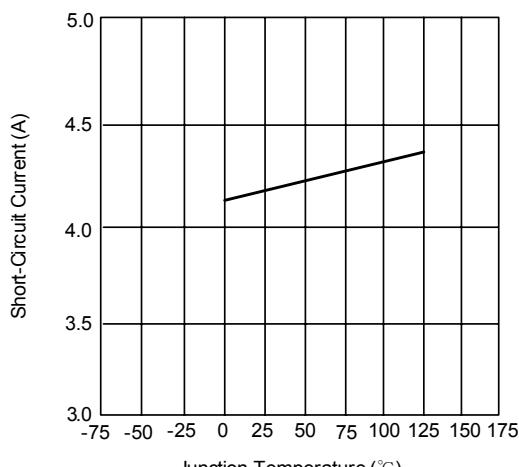


Figure 8. Short-Circuit Current vs.Temperature

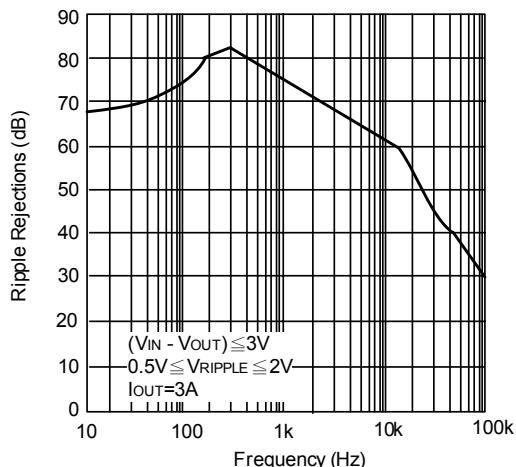


Figure 9. Ripple Rejection vs.Frequency

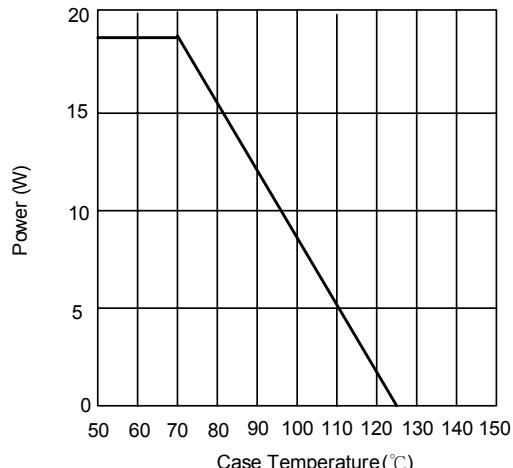


Figure 10. Maximum Power Dissipation

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