Replacement of

LT1086-3.3/2.9/2.5
LT1085-3.3/2.9/2.5

MIK1086-3.3/2.9/2.5
MIK1085-3.3/2.9/2.5

1.5 A/3.0 A Low Dropout Positive Regulator

August 1995-revised September 2002

Description

The MIK1086/MIK1085 Series 1.5/3.0A fixed voltage regulators are monolithic integrated circuits designed to power the new generation of microprocessors for use applications requiring a well regulated positive output voltage with low input-output differential voltage requirements and output voltage 3.3V, 2.9V or 2.5V. Output voltage may be selecting using a jumper on the circuit board. Outstanding features include full power usage up to 1.5/3.0A of load current, internal current limiting and thermal shutdown. Other fixed versions are also available Vout = 2.0V to 4.0V.

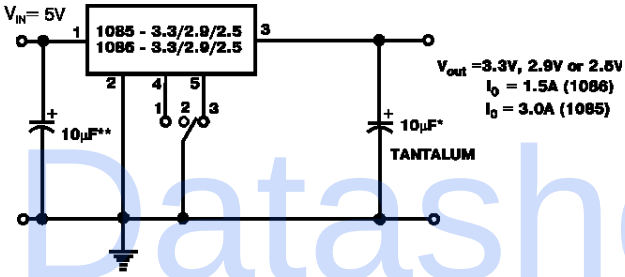
Features

- Low Dropout Performance 1V at full Load
- Jumper Selected Output Voltage 3.3V, 2.9V, 2.5V
- Line Regulation Typically 0.015%
- Load Regulation Typically 0.1%
- Fast Transient Response
- 5 Lead TO-220 Packages

Applications

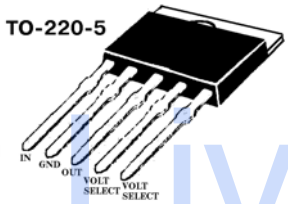
- Microprocessor Supplies
- Post Regulators for Switching Supplies
- High Current Regulators
- 5V to 3.XXV for Pentium Processors
- 3.3V to 2.5V for Portable Pentium Processors
- Power PC Series Power Supplies

Typical application data fixed regulator



* REQUIRED FOR STABILITY
** NEEDED IF DEVICE IS FAR FROM FILTER CAPACITORS

Package information



Absolute Maximum Ratings

Symbol	Parameter	Maximum	Units
V_{IN}	Input Voltage	6	V
P_o	Power Dissipation	Internally Limited	W
θ_{JC}	Thermal Resistance Junction to Case TO-220-5	3	°C/W
θ_{JA}	Thermal Resistance Junction to Ambient TO-220-5	50	
T_J	Operating Junction Temperature Range		°C
	Control Section	0 to 125	
	Power Transistor	0 to 150	
T_{STG}	Storage Temperature Range	-65 to 150	
T_{LEAD}	Lead Temperature (Soldering 10 Sec.)	260	

Device Selection Guide

Device	Vout, V	Iout, A
MIK1086	3.3, 2.9, 2.5	1.5
MIK1085	3.3, 2.9, 2.5	3.0

Output voltage selecting

Jumper	V_{OUT}, V
1	2.9
2	3.3
3	2.5

Replacement of
LT1086-3.3/2.9/2.5
LT1085-3.3/2.9/2.5

1.5 A/3.0 A Low Dropout Positive Regulator

MIK1086-3.3/2.9/2.5
MIK1085-3.3/2.9/2.5

August 1995-revised September 2002

Electrical Characteristics

(V_{IN} = 4.75V to 5.25V; I_O = 10mA to 3.0A(MIK1085); I_O = 10mA to 1.5A(MIK1086), Unless otherwise specified)

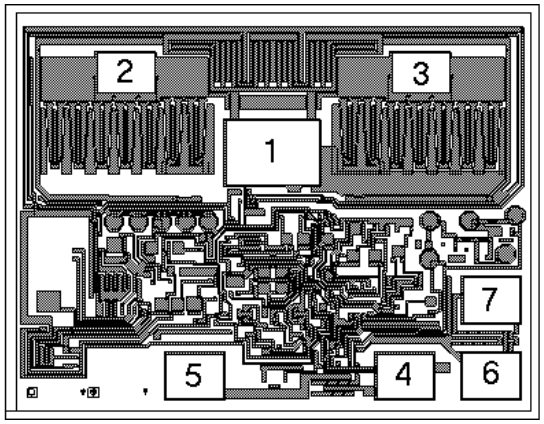
Parameter	Symbol	Test Conditions			Test Limits			Units
		V_{IN}	I_O	T_J (Note 3)	Min	Typ	Max	
Output Voltage	V_0 (3.3V)	5V	10mA	25ºC	3.267	3.3	3.333	V
				Over Temp.	3.234		3.366	
	V_0 (2.9V)	5V	10mA	25ºC	2.871	2.9	2.929	
				Over Temp.	2.842		2.958	
	V_0 (2.5V)	5V	10mA	25ºC	2.475	2.5	2.525	
				Over Temp.	2.450		2.550	
Line Regulation (Note 1)	$REG_{(LINE)}$		10mA	25ºC		0.015	0.2	%
				Over Temp.		0.035		
Load Regulation (Note 1)	$REG_{(LOAD)}$	5V		25ºC		0.1	0.3	
				Over Temp.		0.2	0.4	
Dropout Voltage ΔV_{OUT} = 2%	V_D			25ºC		1.0		V
				Over Temp.		1.1	1.3	
Current Surge Limit MIK1085 MIK1086	I_S					 4.5 2.5		A
Quiescent current	I_Q	5V				10	16	mA
Temperature Coefficient	T_C					0.005		%/ºC
Temperature Stability	T_S	5V	0.5A			0.5		%
RMS Output Noise (Note2)	V_N			25ºC		0.003		$\%V_o$
Ripple Rejection Ratio MIK1085 MIK1086	R_A	5V	 3.0A 1.5A	Over Temp.	60	72		dB

Note 1: Low duty cycle pulse testing.

Note 2: Bandwidth of 10Hz to 10kHz.

Note 3: Over Temp. = over specified operating junction temperature range.

Pad Location LT1085-3.3/2.9/2.5; LT1086-3.3/2.9/2.5



Pad location coordinates

N	Pad name	Coordinates µm	
		X	Y
1	Input	1275	1360
2	Output	520	1890
3	Output	2245	1890
4	Output	2155	120
5	GND	930	120
6	Select 2.9V	2655	120
7	Select 2.5V	2660	560