

500mA 3-Terminal Positive Linear Regulator

Description

The ZM78M05 of regulators is complete with internal current limiting, thermal shutdown protection, and safe-area compensation which make them virtually immune from output overload. If adequate heat sinking is provided, these regulators can deliver output currents up to 0.5A.

Applications

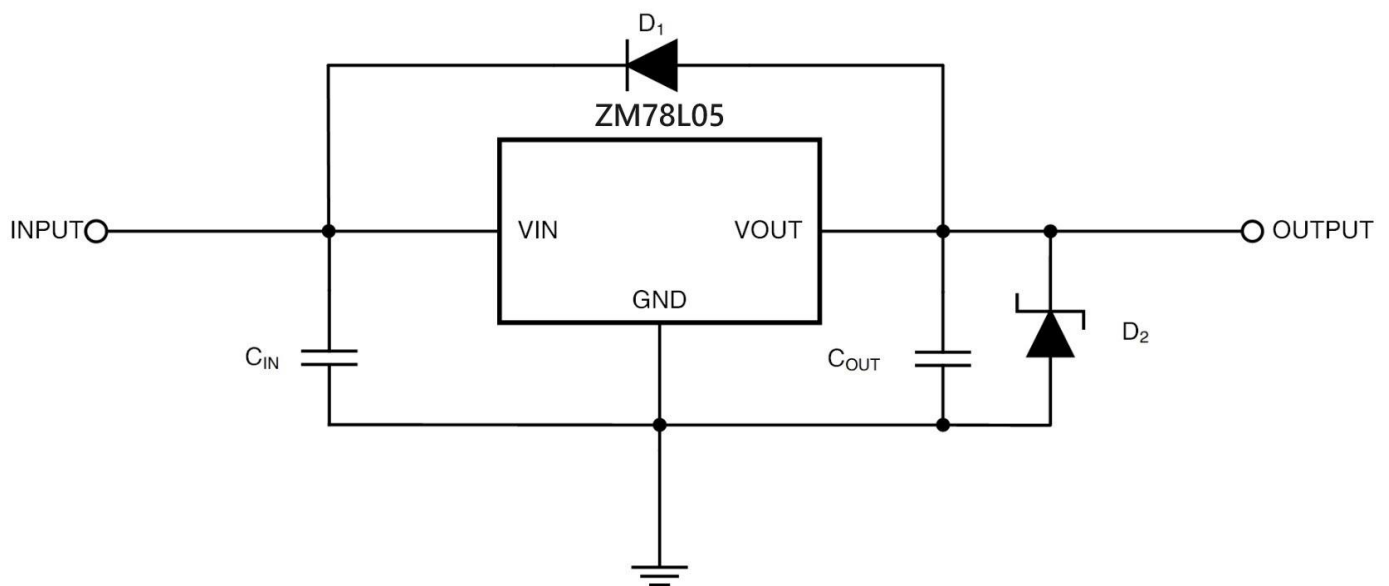
- Consumer Electronics

Typical Application

- Microprocessor Power Supply
- Mother Board I/O Power Supply

Features

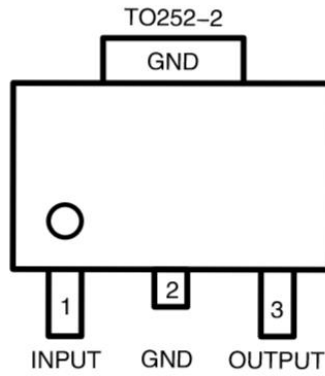
- Output Current up to 0.5A
- Fixed Output Voltages of 5V
- Output Voltage Tolerances of $\pm 1\%$
- Internal Short Circuit Current-limiting
- Internal Thermal Overload Protection



Ordering Information

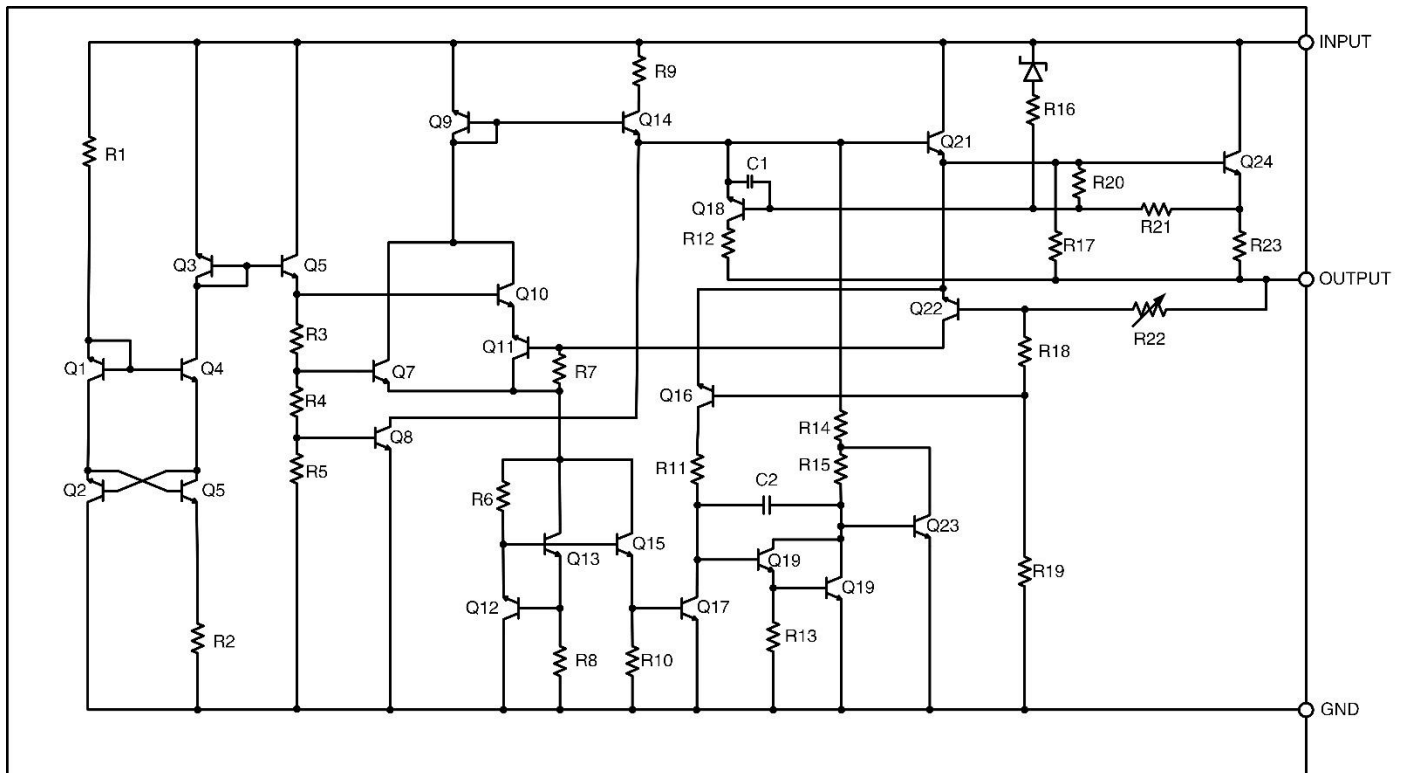
Tube	Tape and reel	Form factor	Packing
ZM78M05	ZM78M05	T0252-2	Tape

Pin Functions



Pin	Name	Description
1	INPUT	Voltage Input
2	GND	Ground
3	OUTPUT	Voltage Output

Block Diagram



Absolute Maximum Ratings ⁽¹⁾

Input Voltage.....35V

Storage Temperature Range.....-55°C~150°C

Junction Temperature.....150°C

ESD (Human Body Model).....±2.5KV

(1) Stress exceeding the absolute maximum rated value may cause permanent damage to the equipment. These are only stress ratings and do not mean that the equipment operates beyond the recommended operating conditions under these conditions. Long term exposure to absolute maximum rated conditions may affect the reliability of the equipment.

Operating Ratings ⁽¹⁾

parameter	Min	Max	Units
Input Voltage		35	V
Operating Junction Temperature Range	-40	125	°C

(1) Recommended working conditions refer to the conditions under which the chip operates normally. For accurate specifications and testing conditions, please refer to the electrical characteristics

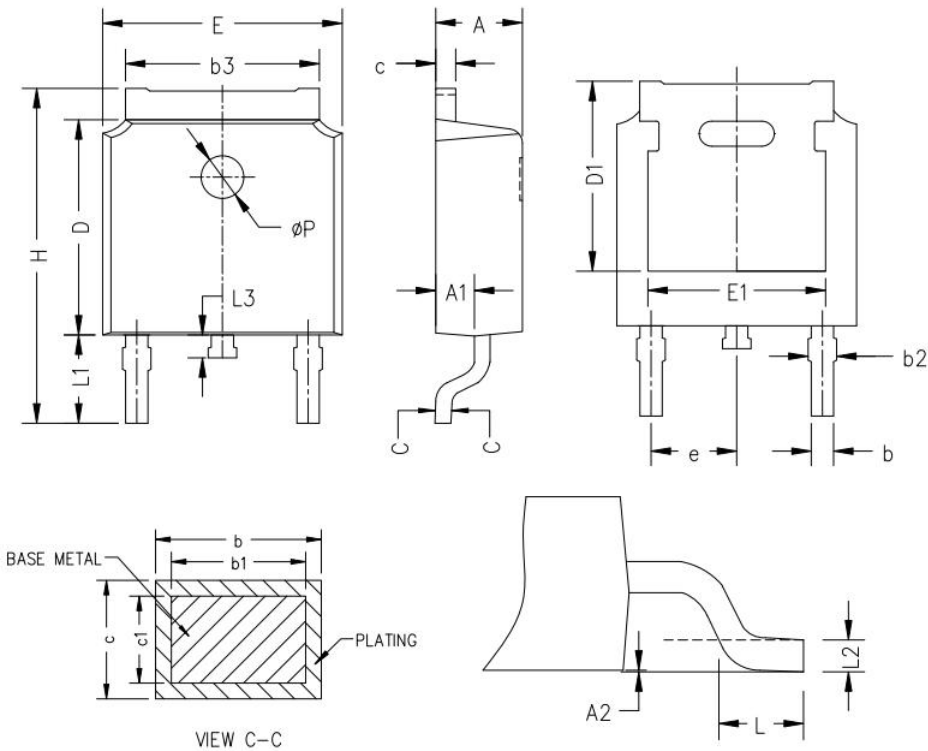
Dynamic Parameter

Unless otherwise specified, VIN=10V, IOU=350mA, T=25°C

Symbol	parameter	Test conditions	Min	Typ	Max	Units
VOUT	Output Voltage	T=25°C	4.8	5	5.2	V
		VIN=7V to 20V, IOU=5mA to 350mA	4.75	5	5.25	
Regline	Line Regulation	T=25°C, VIN=7V to 25V, IOU=200mA		3	100	mV
Regload	Load Regulation	T=25°C, IOU=5mA to 500mA		20	100	mV
IQ	Quiescent Current	T=25°C		3.2	6	mA
Δ IQ	Quiescent Current Change	VIN=8V to 25V, IOU=200mA			0.8	mA
		IOU=5mA to 350mA			0.5	mA
Δ VIN/ Δ VOU	Ripple Rejection	VIN=8V to 18V, f=120Hz, IOU=200mA	62	73		dB
VIN-VOUT	Dropout Voltage	Δ VOUT =1%, T=25°C		2		V
NO	Output Noise Voltage	T=25°C, f=10Hz to 100KHz		45		μV
ISC	Short Circuit Current	T=25°C, VIN =35V		50		mA
IPK	Peak Output Current	T=25°C		700		mA
Δ VOUT/ Δ T	Output Voltage Drift	IOU=5mA		0.2		mV/°C

Pod Diagram

TO252-2



SYMBOLS	MILLIMETERS	
	MIN	MAX
A	2.15	2.45
A1	0.90	1.12
A2	0	0.20
b	0.66	0.87
b1	0.71	0.81
b2	0.72	1.23
b3	5.12	5.52
c	0.40	0.61
c1	0.46	0.56
D	5.95	6.25
D1	5.25	6.25
e	2.286BSC	
E	6.45	6.75
E1	4.70	--
H	9.77	10.40
L	1.40	1.70
L1	2.90REF	
L2	0.508REF	
L3	0.60	1.00
ϕP	1.10	1.40