KA78RH33

Semi Low Dropout Voltage Regulator

Features

- Fixed Output Voltage of +3.3V
- Space Saving SMD types of DPAK
- 1V(Typ) Dropout at Io=800mA
- Output Current of 800mA
- Thermal Shutdown Protection
- Over Current Protection
- Output trimmed to +/-1% Tolerance
- No minimum Load Requirement

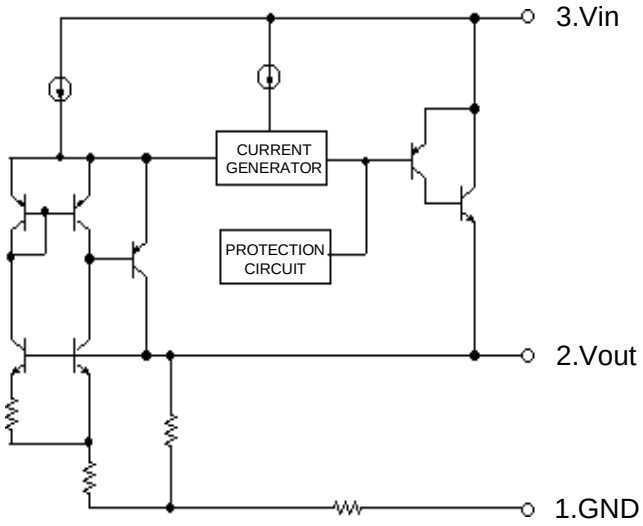
Description

The KA78RH33 is a +3.3V fixed Low Dropout Voltage Regulator specifically designed for use in low voltage operation. The maximum load current is 0.8A and the dropout voltage is guaranteed to be 1V(Typ). The Dropout Voltage varies with load current. The regulator consists of composite PNP-NPN pass transistors.

D-PAK

1. GND 2. Vout 3.Vin

Internal Block Diagram



Rev. 5.0

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Power Supply Input Voltage	Vin	15	V
Output Load Current	Io	800	mA
Junction Temperature	Tj	150	°C
Operating Junction Temperature	Topr	-25 ~ 125	°C
Storage Temperature	Tstg	-55 ~ 150	°C

Temperature Characteristics

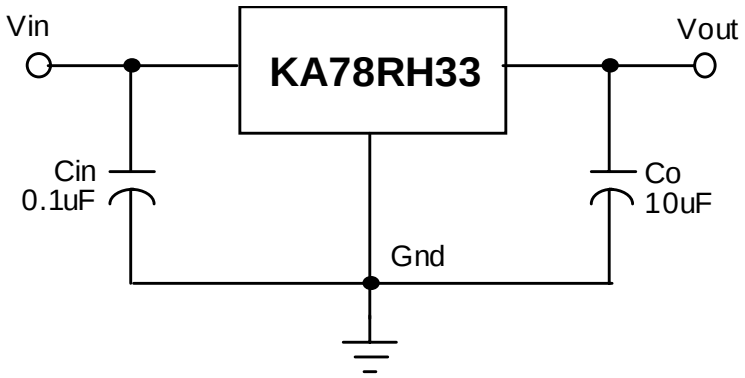
Parameter	Symbol	Value	Unit
Temperature Coefficient of Output Voltage	△ Vo/ △ T	+ / -0.02	% / °C

Electrical Characteristics

(Refer to the test circuit. Vin= 5V, Co=10uF, Ta = 25°C, unless otherwise specified.)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	Vout	Io=10mA, Tj=25°C	3.27	3.3	3.33	V
Output Voltage	Vout	Vin = 4.8V to 12V Io = 10mA to 800mA Tj = -25°C to 125°C	3.23	3.3	3.37	V
Line Regulation	Rline	Vin=4.8V to 12V, Io=10mA	-	1	10	mV
Load Regulation	Rload	Io = 10mA to 800mA	-	1	20	mV
Ripple Rejection	RR	f=120Hz, Io=500mA Vin = 6.3 +/- 1Vrms	55	-	-	dB
Dropout Voltage	Vdrop	Io = 100mA Io = 500mA Io = 800mA	- - -	1 1.05 1.1	1.2 1.25 1.4	V
Quiescent Current	Iq	Vin <= 12V	-	5	10	mA
Temperature Coefficient of Output Voltage	△ Vo/ △ T	Tj = -25°C to 125°C Io = 10mA	-	0.2	-	mV/°C
Peak Output Current	Ipk	Vin = 6.3V	800	-	-	mA
Output Noise Voltage	Vn	f = 10Hz to 10KHz	-	100	-	μVrms

Typical Application



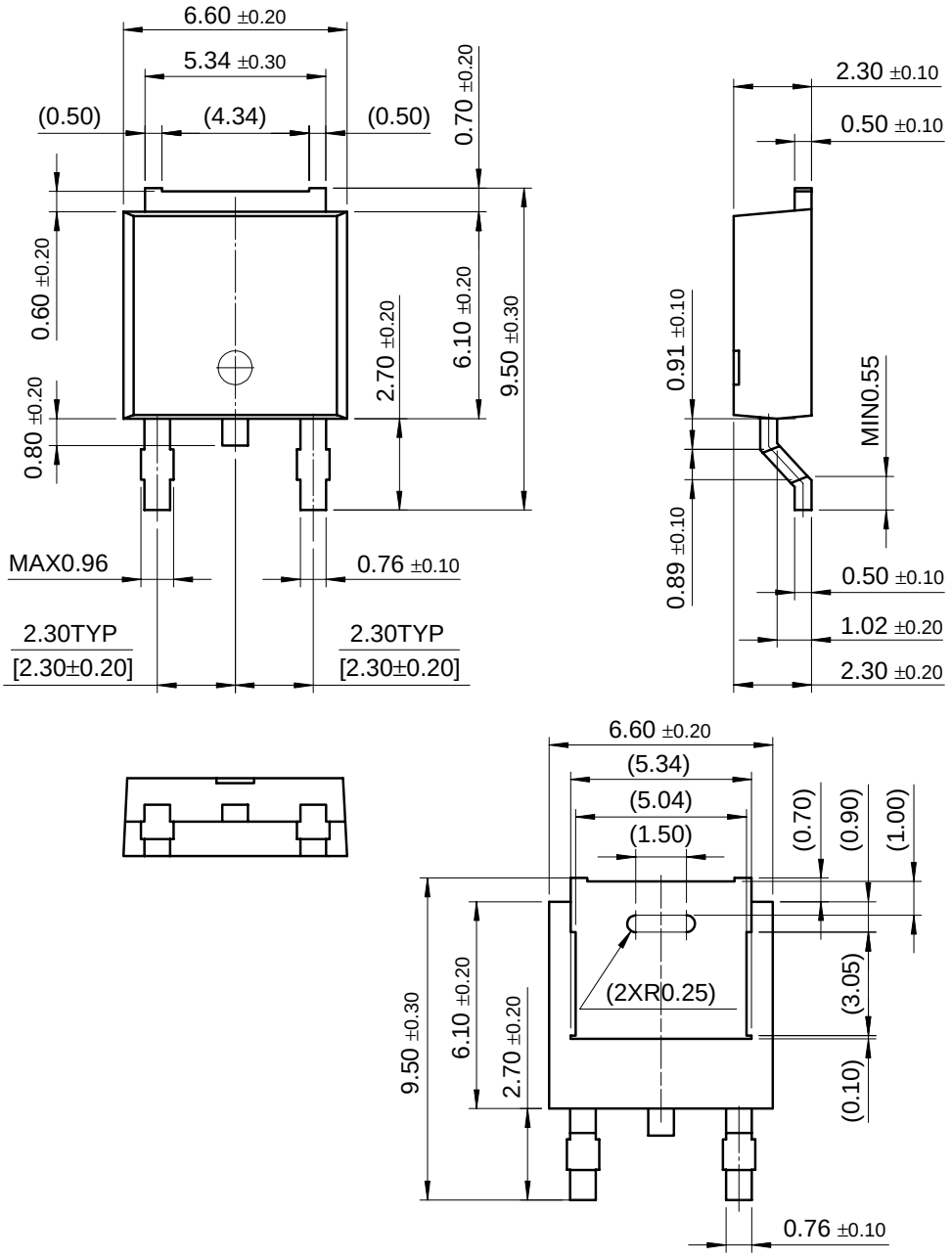
An input capacitor, Cin is not necessary for stability, but it will improve the overall performance

Mechanical Dimensions

Package

Dimensions in millimeters

D-PAK



Ordering Information

Product Number	Package	Operating Temperature
KA78RH33D	D-PAK	-25°C to + 125°C