

# AN6541

## 3-pin Positive Voltage Regulator

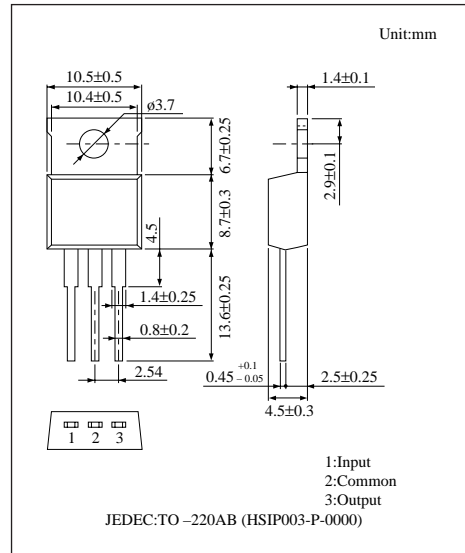
### ■ Overview

The AN6541 is a 3-pin 9V voltage regulator which performs stable operations up to the minimum input/output voltage difference 0.3V (typ.). Stabilized fixed output voltage is obtained from unstable DC input voltage.

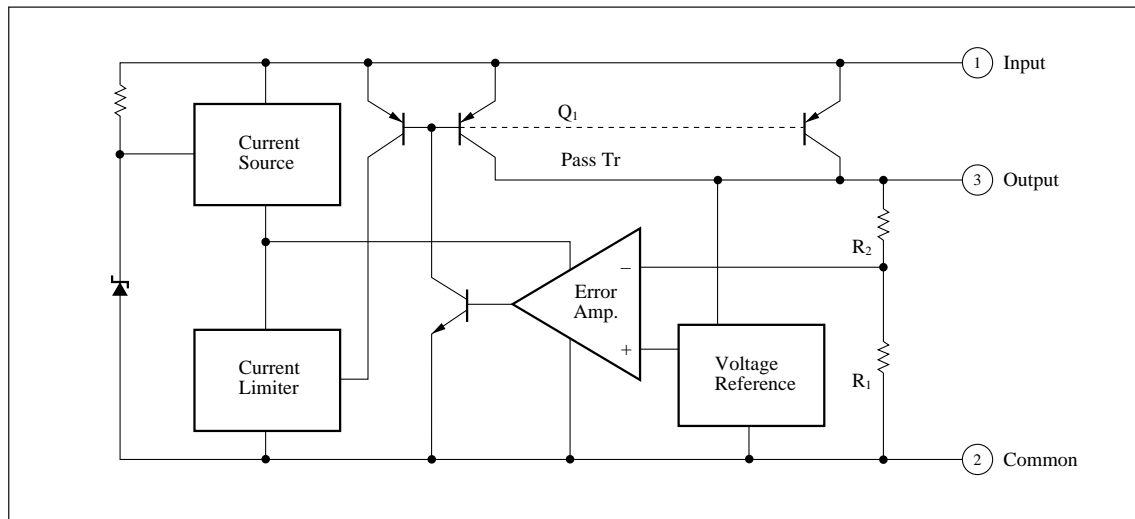
The AN6541 can be used in power circuits with current capacitance up to 300mA.

### ■ Features

- Low drop-out voltage:0.3V (typ.)
- Internal short-circuit current protection
- Low temperature coefficient of output voltage



### ■ Block Diagram



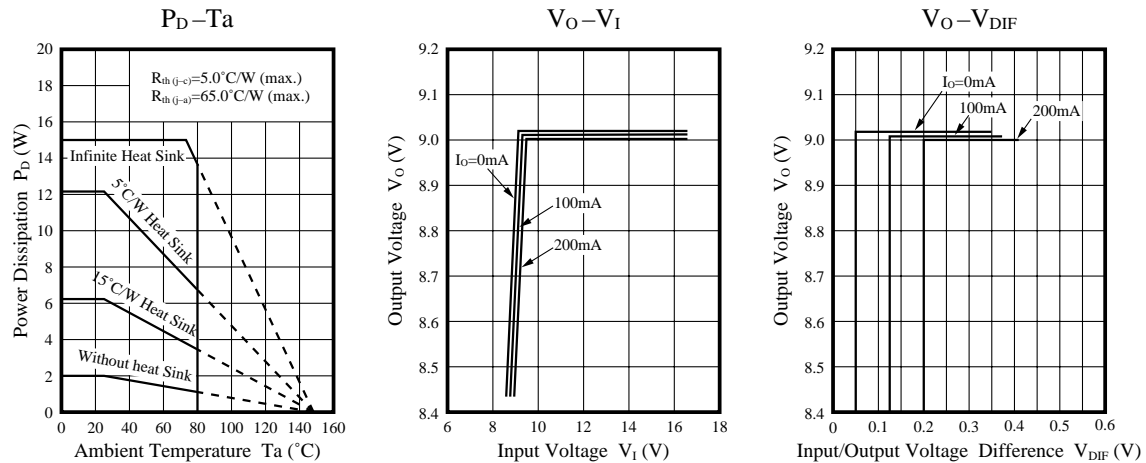
## ■ Absolute Maximum Ratings (Ta=25°C)

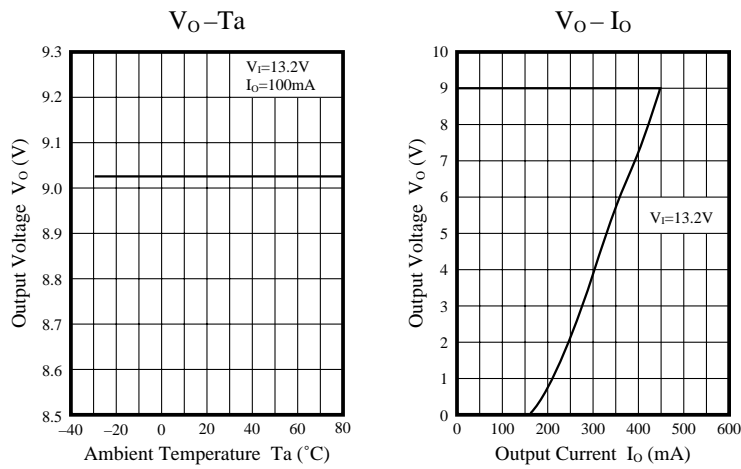
Parameter	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub>	20	V
Power dissipation	P <sub>D</sub>	15	W
Operating ambient temperature	T <sub>opr</sub>	-30 to+80	°C
Storage temperature	T <sub>stg</sub>	-40 to+150	°C

## ■ Electrical Characteristics (Ta=25°C)

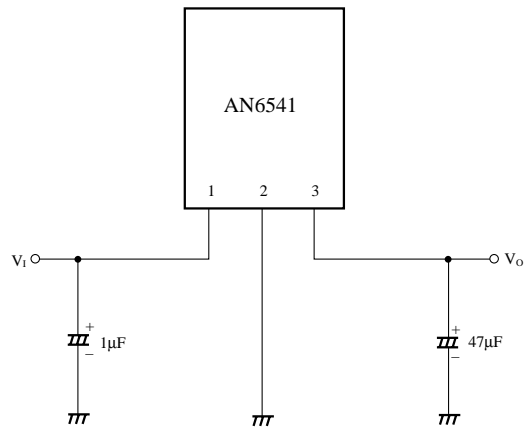
Parameter	Symbol	Condition	min	typ	max	Unit
Output voltage	V <sub>O</sub>	V <sub>I</sub> =13.2V, I <sub>O</sub> =200mA	8.6	9.0	9.4	V
Bias current	I <sub>bias</sub>	V <sub>I</sub> =13.2V, I <sub>O</sub> =200mA	—	25	50	mA
Load regulation	REG <sub>L</sub>	V <sub>I</sub> =13.2V, I <sub>O</sub> =0 to 200mA	—	—	±50	mV
Line regulation	REG <sub>IN</sub>	V <sub>I</sub> =10 to 16V, I <sub>O</sub> =100mA	—	—	±50	mV
Output voltage temperature coefficient	ΔV <sub>O</sub> /Ta	V <sub>I</sub> =13.2V, I <sub>O</sub> =100mA, T <sub>opr</sub> =-30 to+80°C	—	±0.01	—	%/°C
Minimum input output voltage difference	V <sub>DIF(min.)</sub>	V <sub>I</sub> =8.5V, I <sub>O</sub> =100mA	—	0.4	0.6	V
Ripple rejection ratio	Regin	V <sub>I</sub> =13.2V, I <sub>O</sub> =100mA, f=100Hz, e <sub>in</sub> =1V <sub>P-P</sub>	45	—	—	dB
Maximum output current	I <sub>O(max.)</sub>	V <sub>I</sub> =13.2V	300	—	600	mA
Output short current	I <sub>OS</sub>	V <sub>I</sub> =13.2V	50	—	250	mA

## ■ Characteristics Curve





■ Block Diagram



Note) Choose the oscillation control capacitor 47µF which has a small capacitance reduction even at a low temperature. For example, use a tantalum capacitor.