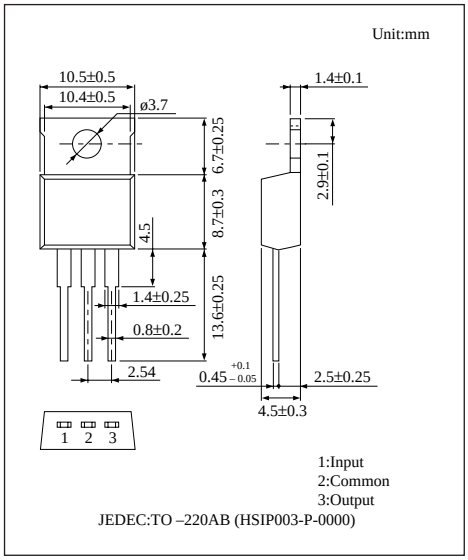
AN6541

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.

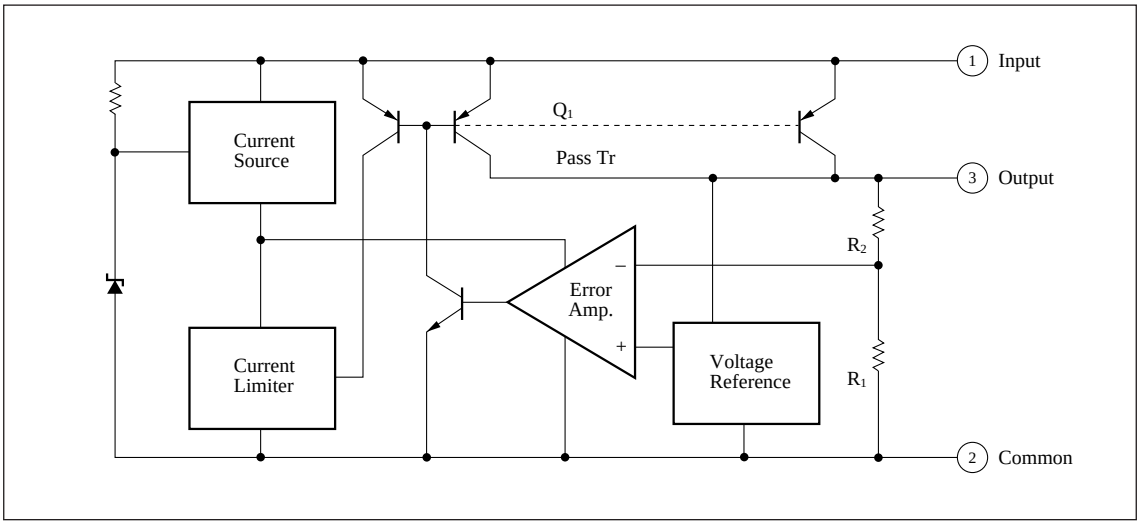
The AN6541 can be used in power circuits with current capacitance up to 300mA.



■ 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)

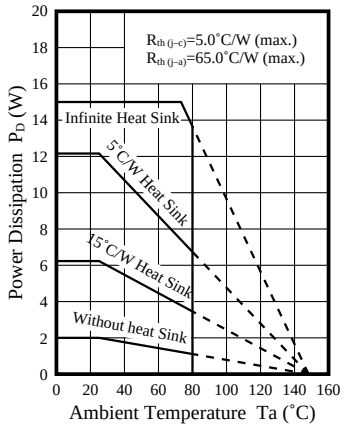
Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	20	V
Power dissipation	P_D	15	W
Operating ambient temperature	T_{opr}	–30 to+80	˚C
Storage temperature	T_{stg}	–40 to+150	˚C

■ Electrical Characteristics (Ta=25˚C)

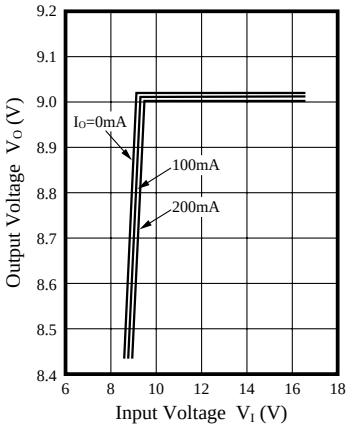
Parameter	Symbol	Condition	min	typ	max	Unit
Output voltage	V_O	V_I=13.2V, I_O=200mA	8.6	9.0	9.4	V
Bias current	I_{bias}	V_I=13.2V, I_O=200mA	—	25	50	mA
Load regulation	REG_L	V_I=13.2V, I_O=0 to 200mA	—	—	±50	mV
Line regulation	REG_{IN}	V_I=10 to 16V, I_O=100mA	—	—	±50	mV
Output voltage temperature coefficient	$\Delta V_O/Ta$	V_I=13.2V, I_O=100mA, T_{opr}=–30 to+80˚C	—	±0.01	—	%/˚C
Minimum input output voltage difference	$V_{DIF\ (min.)}$	V_I=8.5V, I_O=100mA	—	0.4	0.6	V
Ripple rejection ratio	Regin	V_I=13.2V, I_O=100mA, f=100Hz, e_{in}=1V_{P-P}	45	—	—	dB
Maximum output current	$I_{O\ (max.)}$	V_I=13.2V	300	—	600	mA
Output short current	I_{OS}	V_I=13.2V	50	—	250	mA

■ Characteristics Curve

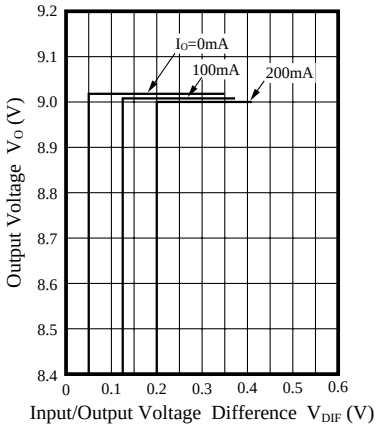
P_D–Ta



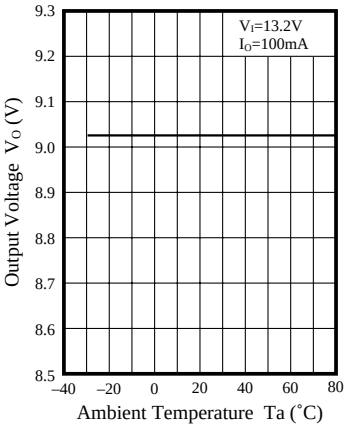
V_O–V_I



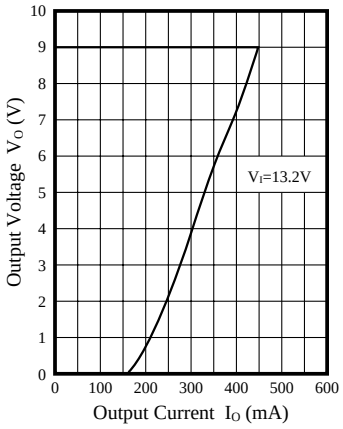
V_O–V_{DIF}



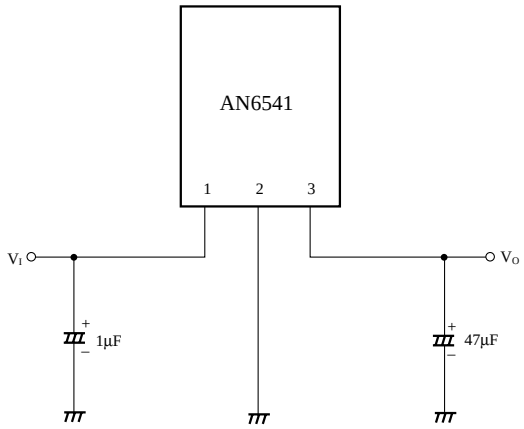
V_O – Ta



V_O – I_O



■ 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.