



### DESCRIPTION

The A7809 is available in TO-220 and TO220F Packages.

### FEATURE

- Output current up to 1.0A
- Input Voltage: 35V
- Output Voltage: 9V
- Thermal overload protection
- Short circuit protection

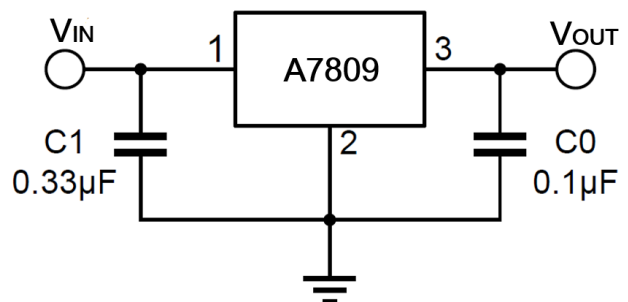
### ORDERING INFORMATION

Package Type	Part Number	
TO-220 SPQ: 50pcs/Tube	T3	A7809T3U
		A7809T3VU
TO-220F SPQ: 50pcs/Tube	T3F	A7809T3FU
		A7809T3FVU
Note	V: Halogen free Package U: Tube	
AiT provides all RoHS products		

### APPLICATION

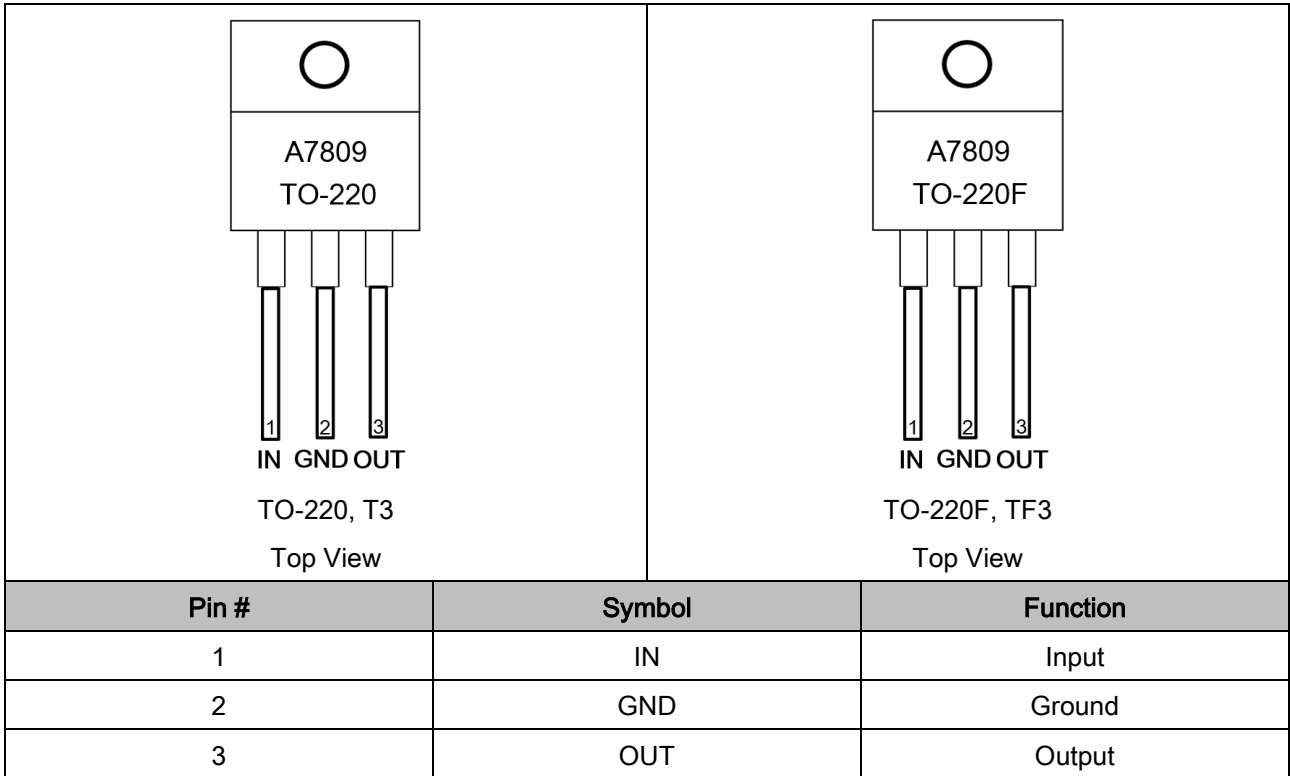
- DVB
- Computer, Mother Board, Graphic Card
- LCD Monitor and LCD TV
- DVD Decode Board
- ADSL Modem
- Post Regulators for Switching Supplies

### TYPICAL APPLICATION





**PIN DESCRIPTION**





## ABSOLUTE MAXIMUM RATINGS

T<sub>A</sub> = 25°C, unless otherwise specified.

Parameter	Symbol	Value	Unit
Input voltage	V <sub>IN</sub>	35	V
Thermal resistance junction-air	R <sub>(JA)</sub>	65	°C/W
Thermal resistance junction-cases	R <sub>θJC</sub>	5	°C /W
Operating Temperature	T <sub>OPR</sub>	-40~+125	°C
Storage Temperature	T <sub>STG</sub>	-65~+150	°C

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

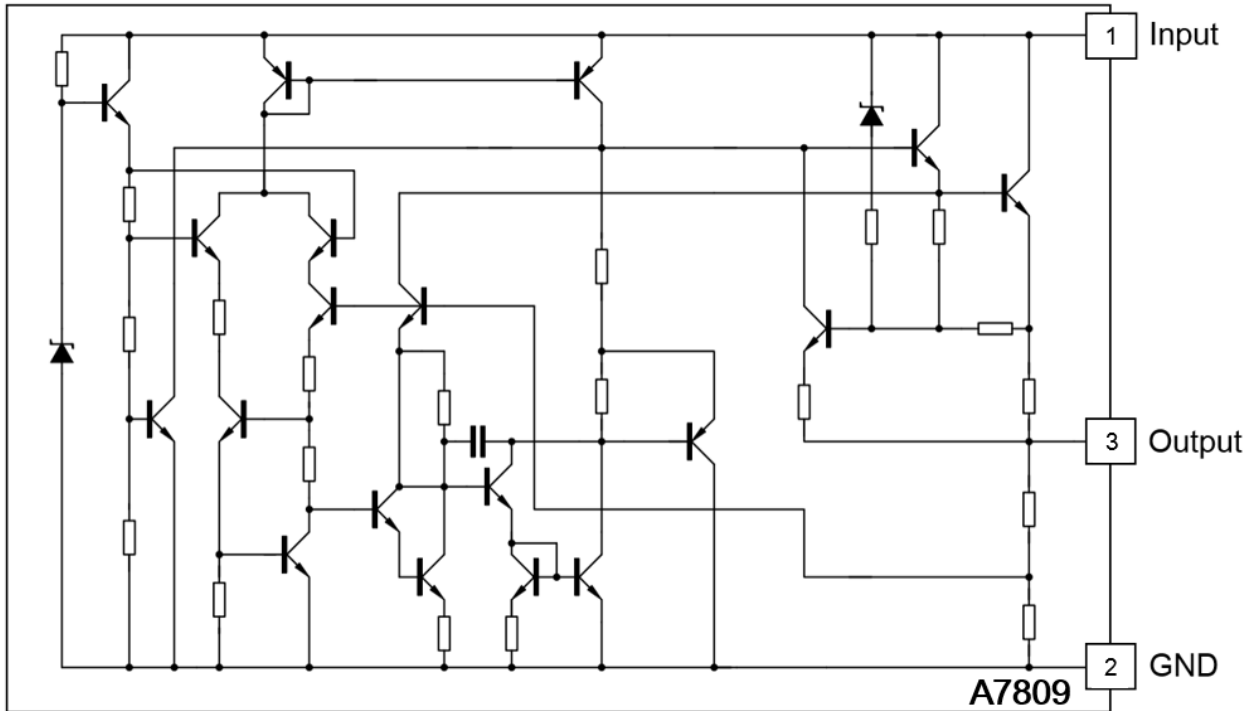
## ELECTRICAL CHARACTERISTICS

T<sub>A</sub>=25°C, I<sub>OUT</sub>=500mA, V<sub>IN</sub>=15V, C1=0.33μF, C0=0.1μF, unless otherwise specified

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output voltage	V <sub>OUT</sub>	T <sub>A</sub> =25°C	8.82	9	9.18	V
		5.0mA<I <sub>OUT</sub> <1.0A, P <sub>O</sub> <15W V <sub>IN</sub> =12.5V to 24V	8.65	9	9.35	V
Line regulation	ΔV <sub>LINE</sub>	V <sub>IN</sub> =11.5V to 26V	-	-	180	mV
		V <sub>IN</sub> =12V to 18V	-	-	90	
Load regulation	ΔV <sub>LOAD</sub>	I <sub>OUT</sub> =5.0mA to 1.0A	-	-	180	mV
		I <sub>OUT</sub> =250mA to 750mA	-	-	90	
Quiescent current	I <sub>Q</sub>	T <sub>A</sub> =25°C	-	4.3	8	mA
Quiescent current change	ΔV <sub>Q</sub>	I <sub>O</sub> =5mA to 1.0A	-	-	0.5	mA
		V <sub>IN</sub> =12.5V to 25V, I <sub>OUT</sub> =500mA	-	-	0.8	
Output voltage drift	ΔV <sub>OUT</sub> /ΔT	I <sub>OUT</sub> =5mA	-	1.2	-	mV/°C
Output noise voltage	V <sub>N</sub>	f=10Hz to 100kHz	-	42	-	μV/V <sub>OUT</sub>
Ripple rejection	RR	f=120Hz, V <sub>IN</sub> =12.5V to 22.5V	-	61	-	dB
Dropout voltage	V <sub>DROP</sub>	I <sub>OUT</sub> =1.0A	-	2	-	V
Output resistance	R <sub>O</sub>	f=1kHz	-	18	-	mΩ
Short circuit current	I <sub>SC</sub>	V <sub>IN</sub> =35V	-	200	-	mA



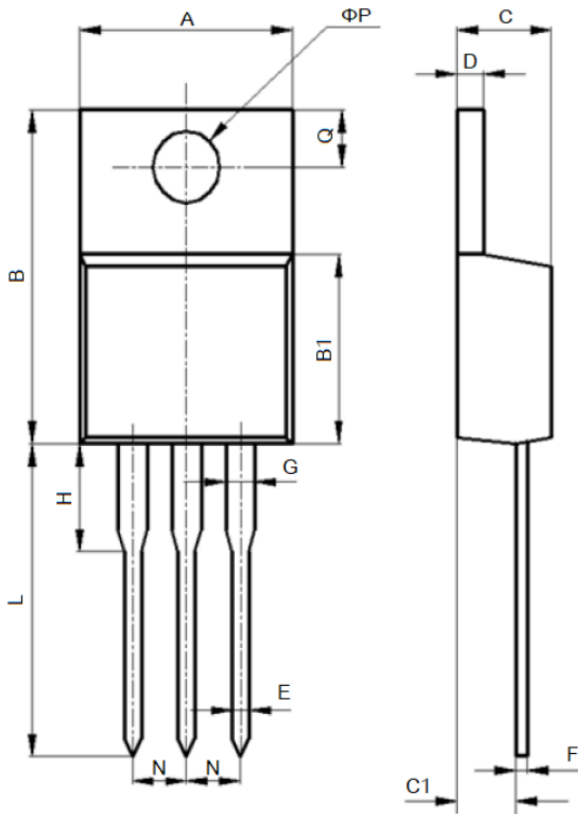
**BLOCK DIAGRAM**





**PACKAGE INFORMATION**

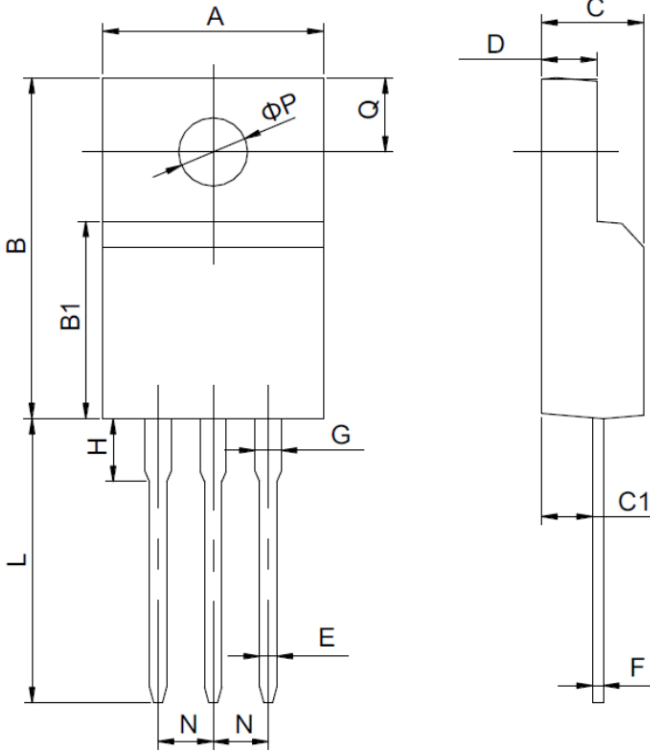
Dimension in TO-220 (Unit: mm)



Symbol	Min.	Max.
A	10.100	10.500
B	15.200	15.600
B1	9.000	9.400
C	4.400	4.600
C1	2.400	3.000
D	1.200	1.400
E	0.700	0.900
F	0.400	0.600
G	1.170	1.370
H	3.300	3.800
L	13.100	13.700
N	2.340	2.740
Q	2.400	3.000
$\Phi P$	3.700	3.900



Dimension in TO-220F (Unit: mm)



Symbol	Min.	Max.
A	9.700	10.300
B	15.500	16.100
B1	8.990	9.390
C	4.400	4.800
C1	2.150	2.550
D	2.500	2.900
E	0.700	0.900
F	0.400	0.600
G	1.120	1.420
H	3.400	3.800
L	12.600	13.600
N	2.340	2.740
Q	3.150	3.550
$\Phi P$	3.000	3.300



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