



DESCRIPTION

The A7810 is available in TO-220 and TO220F Packages.

FEATURE

- Output current up to 1.0A
- Input Voltage: 35V
- Output Voltage: 10V
- Thermal overload protection
- Short circuit protection

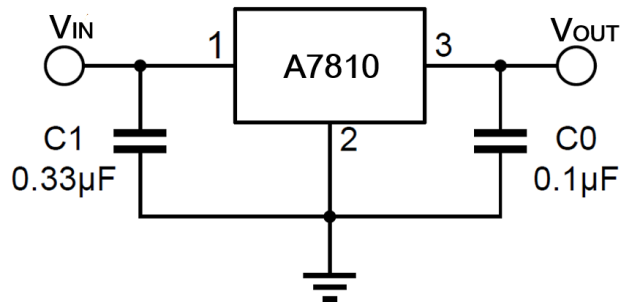
ORDERING INFORMATION

Package Type	Part Number	
TO-220 SPQ: 50pcs/Tube	T3	A7810T3U
		A7810T3VU
TO-220F SPQ: 50pcs/Tube	T3F	A7810T3FU
		A7810T3FVU
Note	V: Halogen free Package U: Tube	
AiT provides all RoHS products		

APPLICATION

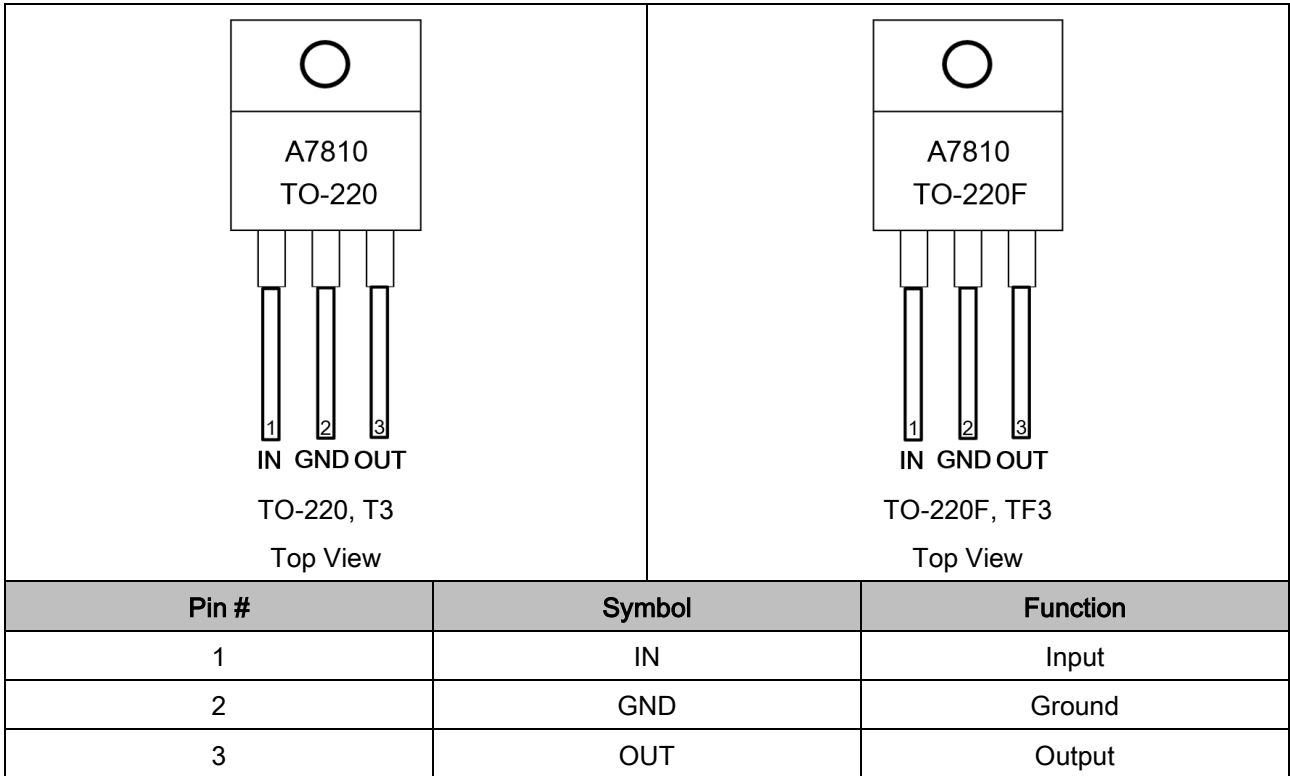
- DVB
- Computer, Mother Board, Graphic Card
- LCD Monitor and LCD TV
- DVD Decode Board
- ADSL Modem
- Post Regulators for Switching Supplies

TYPICAL APPLICATION





PIN DESCRIPTION



**ABSOLUTE MAXIMUM RATINGS**

$T_A = 25^\circ\text{C}$, unless otherwise specified.

Parameter	Symbol	Value	Unit
Input voltage	V_{IN}	35	V
Thermal resistance junction-air	$R_{(JA)}$	65	$^\circ\text{C}/\text{W}$
Thermal resistance junction-cases	$R_{\theta JC}$	5	$^\circ\text{C} / \text{W}$
Operating Temperature	T_{OPR}	-40~+125	$^\circ\text{C}$
Storage Temperature	T_{STG}	-65~+150	$^\circ\text{C}$

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.

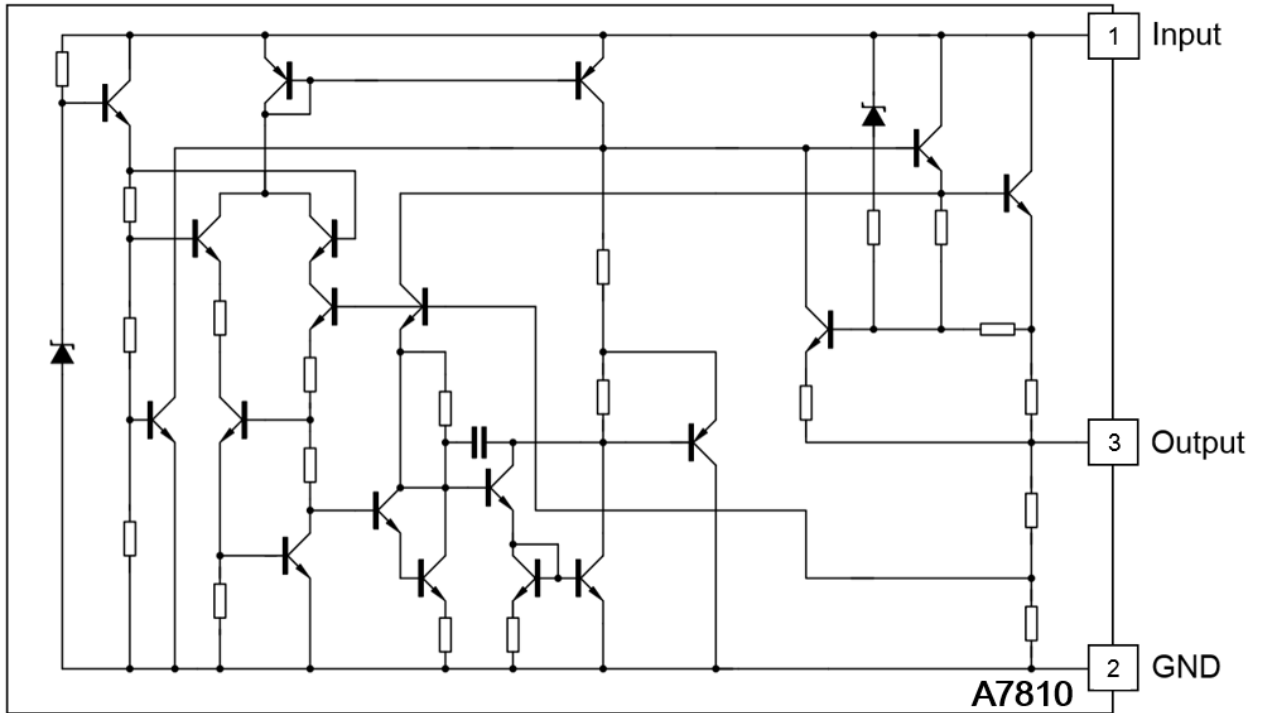
ELECTRICAL CHARACTERISTICS

$T_A = 25^\circ\text{C}$, $I_{OUT} = 500\text{mA}$, $V_{IN} = 16\text{V}$, $C_1 = 0.33\mu\text{F}$, $C_0 = 0.1\mu\text{F}$, unless otherwise specified

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output voltage	V_{OUT}	$T_A = 25^\circ\text{C}$	9.7	10	10.3	V
		$5.0\text{mA} < I_{OUT} < 1.0\text{A}$, $P_O < 15\text{W}$ $V_{IN} = 13.5\text{V to } 25\text{V}$	9.6	10	10.4	V
Line regulation	ΔV_{LINE}	$V_{IN} = 12.5\text{V to } 28\text{V}$	-	8	200	mV
		$V_{IN} = 14\text{V to } 20\text{V}$	-	4	100	
Load regulation	ΔV_{LOAD}	$I_{OUT} = 5.0\text{mA to } 1.0\text{A}$	-	18	200	mV
		$I_{OUT} = 250\text{mA to } 750\text{mA}$	-	8	100	
Quiescent current	I_Q	$T_A = 25^\circ\text{C}$	-	4.3	8	mA
Quiescent current change	ΔV_Q	$I_O = 5\text{mA to } 1.0\text{A}$	-	-	0.5	mA
		$V_{IN} = 13\text{V to } 28\text{V}$, $I_{OUT} = 500\text{mA}$	-	-	0.8	
Output voltage drift	$\Delta V_{OUT}/\Delta T$	$I_{OUT} = 5\text{mA}$	-	1.3	-	mV/ $^\circ\text{C}$
Output noise voltage	V_N	$f = 10\text{Hz to } 100\text{kHz}$	-	42	-	$\mu\text{V}/V_{OUT}$
Ripple rejection	RR	$f = 120\text{Hz}$, $V_{IN} = 13\text{V to } 23\text{V}$	-	61	-	dB
Dropout voltage	V_{DROP}	$I_{OUT} = 1.0\text{A}$	-	2	-	V
Output resistance	R_O	$f = 1\text{kHz}$	-	18	-	$\text{m}\Omega$
Short circuit current	I_{SC}	$V_{IN} = 35\text{V}$	-	200	-	mA



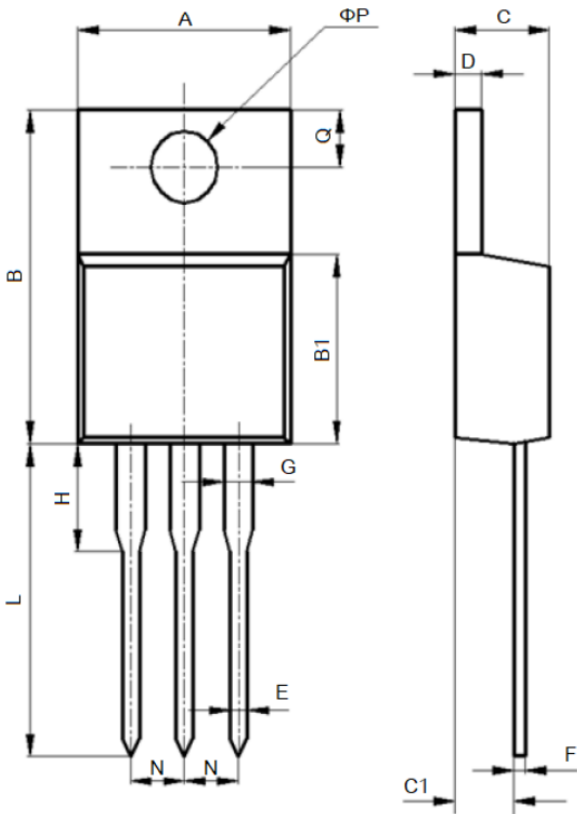
BLOCK DIAGRAM





PACKAGE INFORMATION

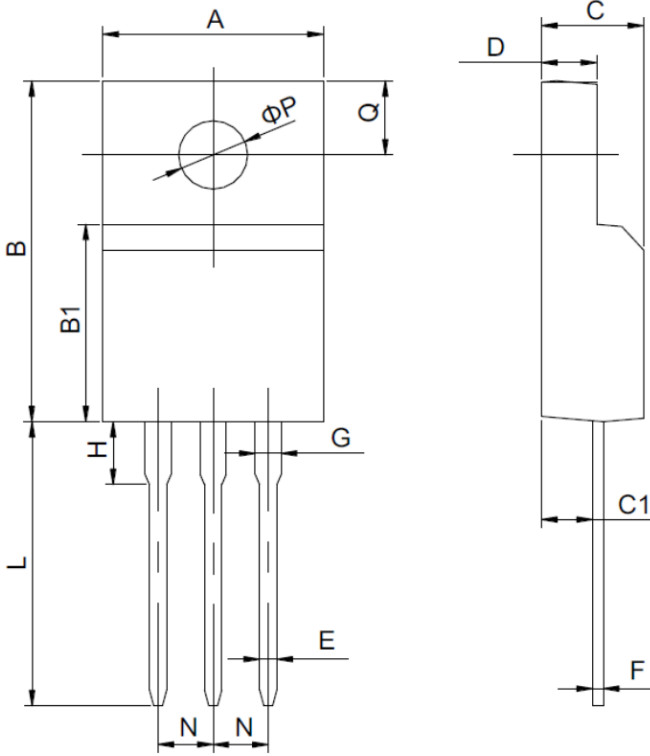
Dimension in TO-220 (Unit: mm)



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
ΦP	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
ΦP	3.000	3.300



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