DESCRIPTION

The A7805 is available in TO-252, TO-220 and TO220F Packages.

FEATURE

- Output current up to 1.0A
- Input Voltage: 35V
- Output Voltage: 5V
- Thermal overload protection
- Short circuit protection

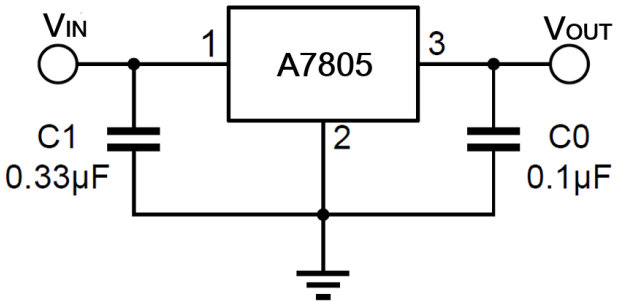
ORDERING INFORMATION

Package Type	Part Number	
TO-220 SPQ: 50pcs/Tube	T3	A7805T3U
		A7805T3VU
TO-220F SPQ: 50pcs/Tube	T3F	A7805T3FU
		A7805T3FVU
TO-252 SPQ: 2500pcs/Reel	D	A7805DR
		A7805DVR
Note	V: Halogen free Package R: Tape & Reel U: Tube	
AiT provides all RoHS products		

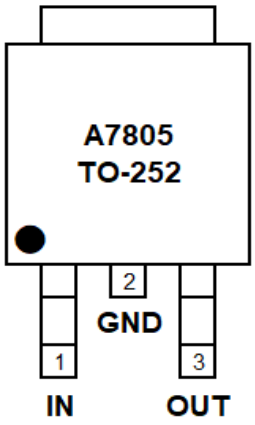
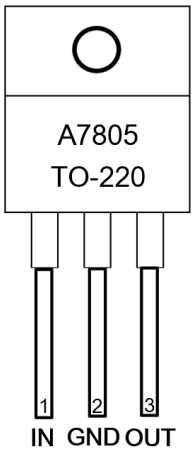
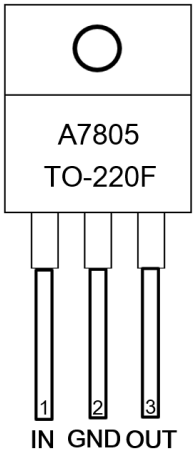
APPLICATION

- 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

		
TO-252, D Top View	TO-220, T3 Top View	TO-220F, TF3 Top View

Pin #	Symbol	Function
1	IN	Input
2	GND	Ground
3	OUT	Output

ABSOLUTE MAXIMUM RATINGS

T_A = 25℃, unless otherwise specified.

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

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

TO-220/TO220F

T_A=25℃ ,I_{OUT}=500mA,V_{IN}=10V,C1=0.33μF , C0=0.1μF, unless otherwise specified

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output voltage	V_{OUT}	T_A=25℃	4.8	5.0	5.2	V
		5.0mA<I_{OUT}<1.0A, P_O<15W V_{IN}=8V to 20V	4.75	5.00	5.25	V
Line regulation	ΔV_{LINE}	V_{IN}=7.5V to 20V	-	4	100	mV
		V_{IN}=8V to 12V	-	2	50	
Load regulation	ΔV_{LOAD}	I_{OUT}=5.0mA to 1.0A	-	9	100	mV
		I_{OUT} =250mA to 750mA	-	4	50	
Quiescent current	I_Q	T_A=25℃	-	4.2	8	mA
Quiescent current change	ΔV_Q	I_O=5mA to 1.0A	-	0.03	0.5	mA
		V_{IN} =8V to 25V, I_{OUT} =500mA	-	0.3	0.8	
Output voltage drift	$\Delta V_{OUT}/\Delta T$	I_{OUT} =5mA	-	0.8	-	mV/℃
Output noise voltage	V_N	f=10Hz to 100kHz	-	42	-	μV/V_{OUT}
Ripple rejection	RR	f=120Hz, V_{IN}=8V to 18V	-	73	-	dB
Dropout voltage	V_{DROP}	I_{OUT} =1.0A	-	2	-	V
Output resistance	R_O	f=1kHz	-	15	-	mΩ
Short circuit current	I_{SC}	V_{IN} =35V	-	200	-	mA

TO-252

T_A=25℃, unless otherwise specified

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
Output Voltage	V_{OUT}		25℃	4.8	5.0	5.2	V
		7V≤V_{IN}≤20V, I_{OUT} = 5mA ~ 350mA, P_O ≤ 15W	0~125℃	4.75	5.0	5.25	
Load Regulation	ΔV_{LOAD}	I_{OUT} = 1mA ~ 0.5A	25℃	-	15	100	mV
		I_{OUT} = 5mA ~ 200mA	25℃	-	5	100	
Line Regulation	ΔV_{LINE}	7V≤V_{IN}≤25V, I_{OUT} =200mA		-	3	100	mV
		8V≤V_{IN}≤25V, I_{OUT} =200mA	25℃	-	1	50	
Quiescent Current	I_Q		25℃	-	4.2	6	mA
Quiescent Current Change	ΔI_Q	8V≤V_{IN}≤25V, I_{OUT} =200mA	0~125℃	-	-	0.8	mA
		5mA≤ I_{OUT} ≤350mA	0~125℃	-	-	0.5	
Output Noise Voltage	V_N	10Hz≤ f ≤100kHz	25℃	-	40	200	uV
Ripple Rejection	RR	8V≤V_{IN}≤18V, f=120Hz, I_{OUT}=300mA	0~125℃	62	80	-	dB
Dropout Voltage	V_{DROP}	I_{OUT}=350mA	25℃	-	2	2.5	V

TYPICAL PERFORMANCE CHARACTERISTICS

T_A=25℃, unless otherwise specified.

Fig.1 Ambient Temperature vs. Output Voltage

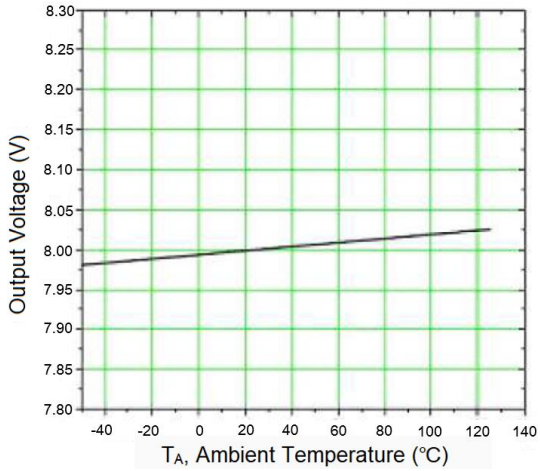


Fig.2 Input Voltage vs. Quiescent Current

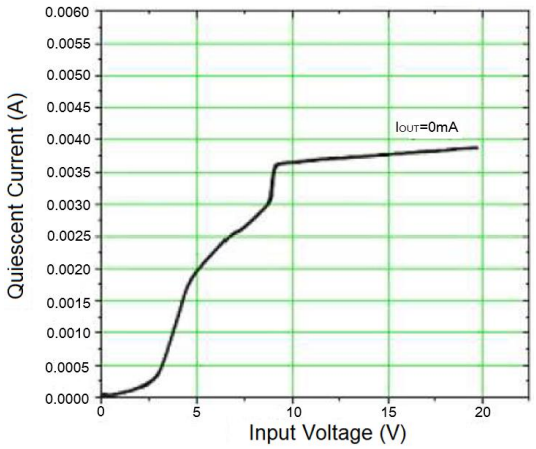


Fig.3 Input Voltage vs. Output Voltage

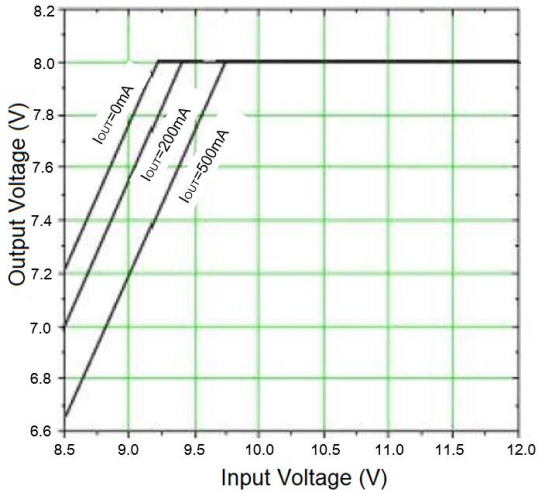
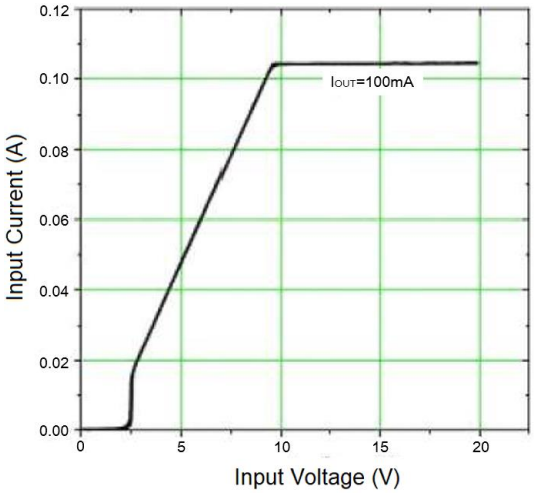
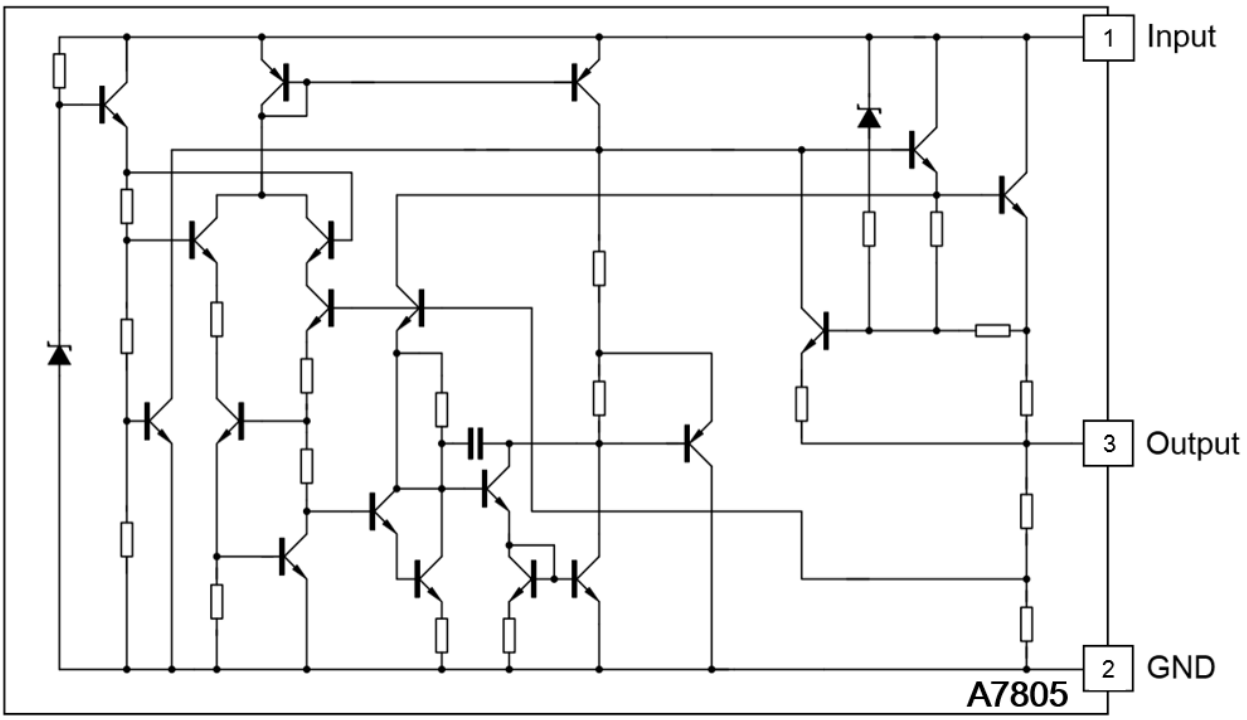


Fig.4 Input Voltage vs. Input Current

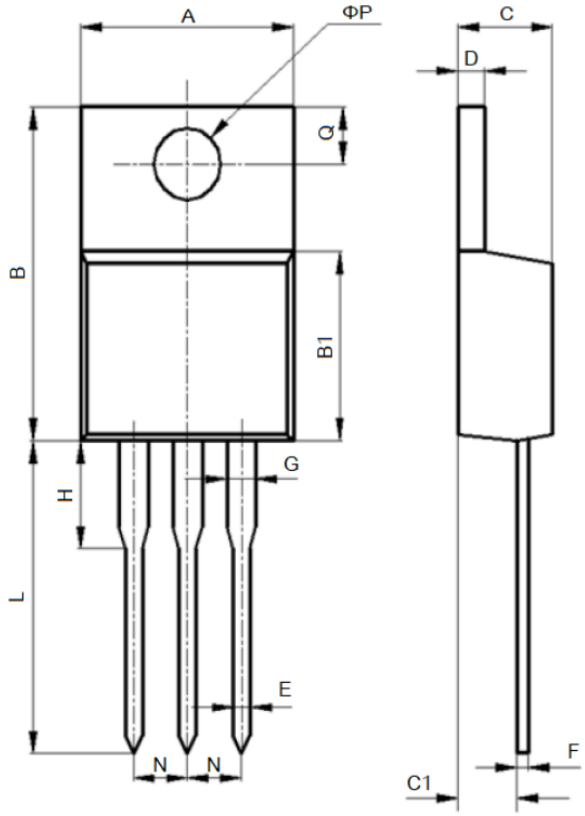


BLOCK DIAGRAM



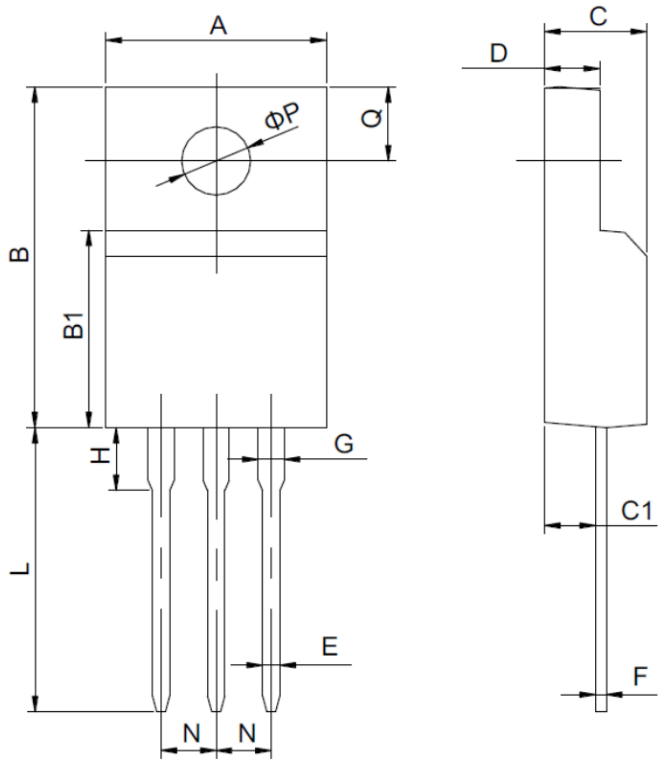
PACKAGE INFORMATION

Dimension in TO-220 (Unit: mm)



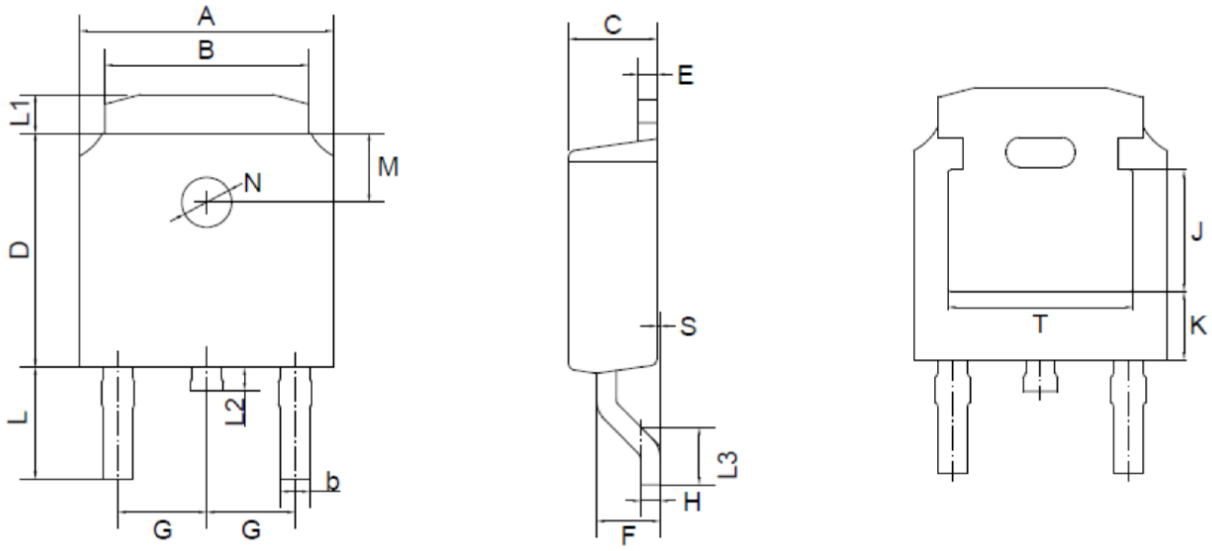
Symbol	Min.	Max.
A	10.100	10.500
B	15.200	15.600
B1	9.000	9.400
C	4.400	4.600
C1	2.400	3.000
D	1.200	1.400
E	0.700	0.900
F	0.400	0.600
G	1.170	1.370
H	3.300	3.800
L	13.100	13.700
N	2.340	2.740
Q	2.400	3.000
ΦP	3.700	3.900

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

Dimension in TO-252 (Unit: mm)



Symbol	Min.	Max.
A	6.300	6.700
B	5.100	5.500
b	0.300	0.800
C	2.100	2.500
D	5.900	6.300
E	0.400	0.600
F	1.300	1.800
G	2.290 Typ.	
H	0.450	0.550
L	2.700	3.100
L1	0.800	1.200
L2	0.600	1.000
L3	1.400	1.750
S	0.000	0.100
M	1.800 Typ.	
N	1.300 Typ.	
J	3.160 Ref.	
K	1.800 Ref.	
T	4.830 Ref.	

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