

3 TERMINAL 1.5A POSITIVE VOLTAGE REGULATORS

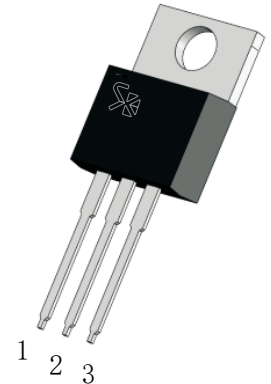
DESCRIPTION

The SK78XX series of three-terminal positive regulators are available in TO-220 package and with several fixed output voltage, making them useful in a wide range of application. Each type employs internal current limiting, thermal shut-down and safe area protection, making it essentially indestructible. If adequate heat sinking is provided, they can deliver over 1.5A output current. Although designed as fixed voltage regulators, these devices can be used with external components to obtain adjustable voltage and currents.

FEATURES

- *Output current up to 1.5A
- *5V;6V;8V;9V;10V;12V;15V output voltage available
- *Thermal overload protection
- *Short circuit protection
- *Output transistor SOA protection

Symbol	Parameter	Value	UNIT
VI	Input Voltage	35	V
TOPR	Operating Temperature Range	-40~ +125	°C
TSTG	Storage Temperature Range	-65~ +150	°C



1 2 3
1 Input 2 Gnd 3 Out

1、Electrical Characteristics (Tc=25°C) Of SK7812AU(refer to the test circuits , TJ = 0 to 120 °C VI = 10V, IO = 500 mA , CI = 0.33 μF, CO = 0.1 μF unless otherwise

Parameter	Symbol	Test Condition	MIN	TYP	MAX	UNIT
Output Voltage	VO	TJ = 25°C	11.5	12	12.5	V
		IO = 5mA to 1A, PO ≤ 15W VI = 14.5V to 27V	11.4	12	12.6	
Line Regulation (Notel)	Δ VO	TJ = 25°C	VI = 14.5V to 30V		240	mV
			VI = 16V to 22V		120	
Load Regulation (Notel)	Δ VO	TJ = 25°C			240	mV
		TJ = 25°C IO = 250mA to 750mA			120	
Quiescent Current	IQ	TJ = 25°C			8	mA
Quiescent Current Change	Δ IQ	IO = 5mA to 1A			0.6	mA
		VI = 15V to 30V			0.8	
Quiescent Current Change	Δ VO/Δ T	IO = 5mA		1.7		mV/°C
Short Circuit Current	ISC	TJ = 25° C, VI = 35V		0.23	1.2	A

SK78XX

TEST CIRCUITS

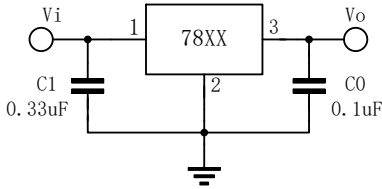


FIG.1 DC PARAMETERS

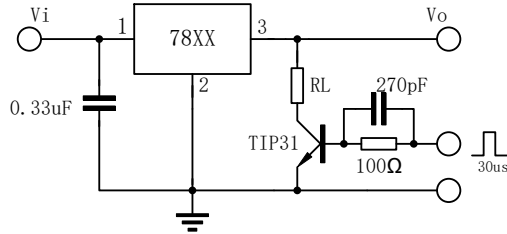


FIG.2 LOAD REGULATION

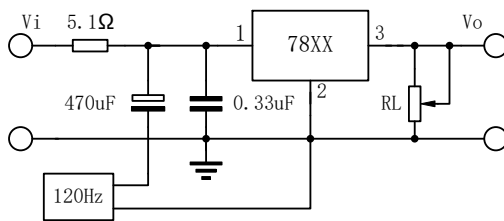


FIG.3 RIPPLE REJECTION

APPLICATION CIRCUITS

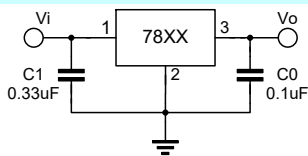


Fig.4 Fixed output regulator

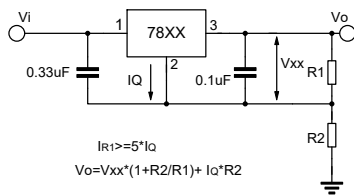


Fig.5 Constant current regulator

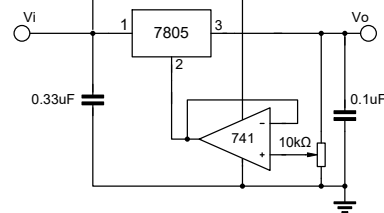


Fig.6 Circuit for increasing Regulator output voltage

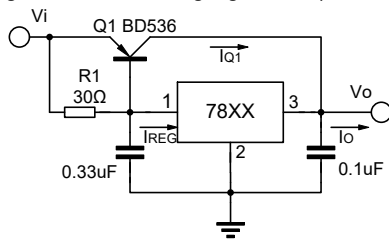
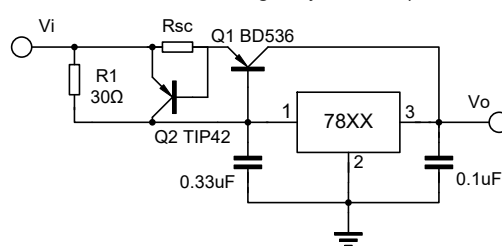


Fig.7 Adjustable output



$$I_o = I_{REG} * (I_{REG} - V_{BEQ1} / R_1)$$

$$R_1 = V_{BEQ1} / (I_{REG} - I_{Q1} * Q_1)$$

Fig.8 High current with voltage regulator

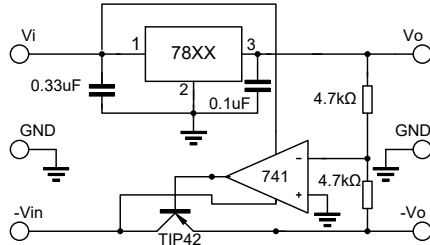


Fig.10 Tracking voltage regulator

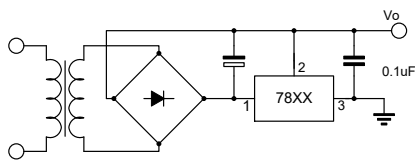


Fig.12 Negative output voltage circuit

$$R_{sc} = V_{BEQ2} / I_{sc}$$

Fig.9 High output current short circuit protection

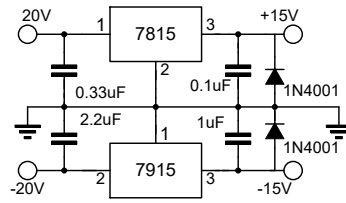


Fig.11 Split power supply (±15V,1A)

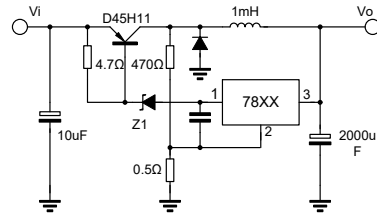


Fig.13 switching regulator

TYPICAL PERFORMANCE CHARACTERISTICS

Fig.14 Quiescent current

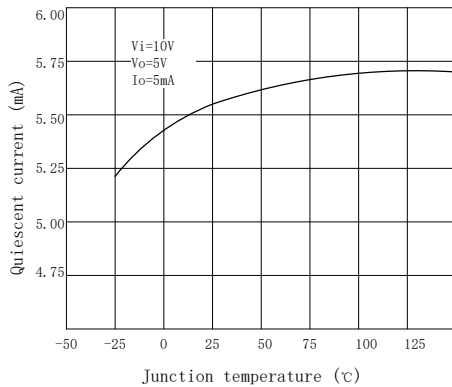


Fig.15 Output voltage

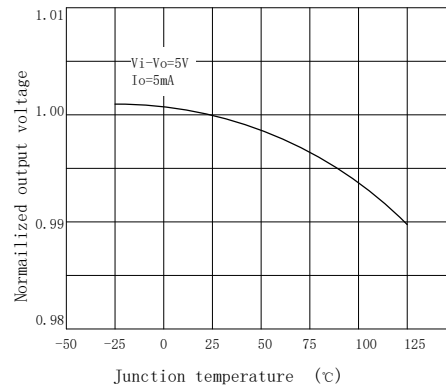


Fig.16 Peak output current

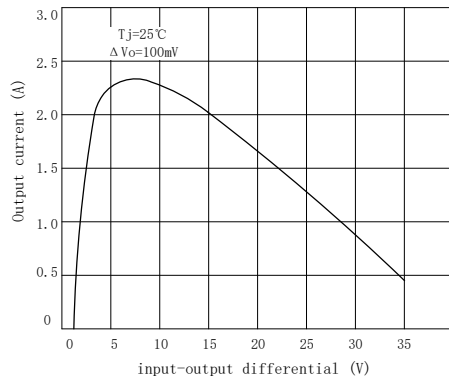
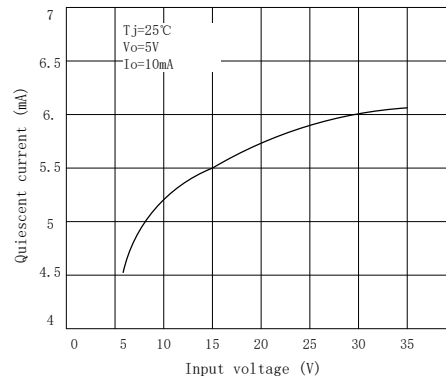
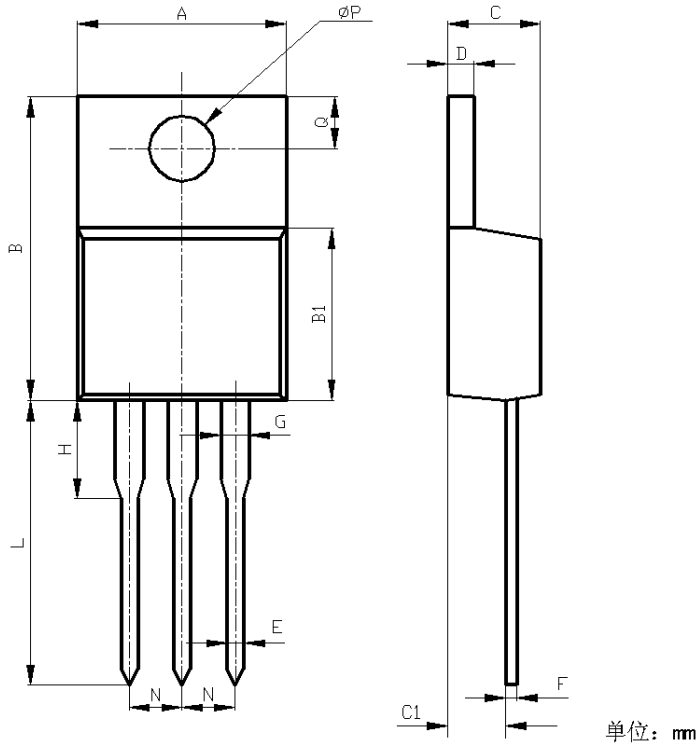


Fig.17 Quiescent current



PACKAGE OUTLINE

TO-220



	Unit (mm)	
	MIN	MAX
A	10.1	10.5
B	15.2	15.6
B1	9.00	9.40
C	4.40	4.60
C1	2.40	3.00
D	1.20	1.40
E	0.70	0.90
F	0.40	0.60
G	1.17	1.37
H	3.30	3.80
L	13.1	13.7
N	2.34	2.74
Q	2.40	3.00
ϕP	3.70	3.90

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