SK7815A

3 TERMINAL 1.0 A POSITIVE VOLTAGE REGULATORS

DESCRIPTION

The SK78XXA series of three-terminal positive regulators are available in TO-220 packages.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 1.0A output current, Although designed as fixed voltage regulators, these devices can be used with external components to obtain adjustable voltage and currents.

FEATURES

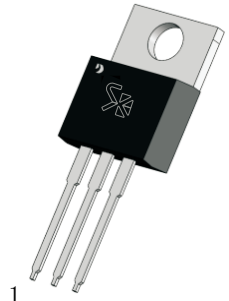
*Output current up to 1.0A

*Thermal overload protection

*Short circuit protection

*Output transistor SOA protection

Symbol	Parameter	Value	UNIT
VI	Input Voltage	35	V
TOPR	OperatingTemperature Range	-40～+125	℃
TSTG	Storage Temperature Range	-65～+150	℃
R(JA)	Thermal resistance junction-air	65	℃/W
RθJC	Thermal resistance junction-cases	5	℃/W



1 Input 2 Gnd 3 Out

ELECTRICAL CHARACTERISTICS

Refer to test circuits,0<Tj<125℃,Io=500mA,Vi=21V,Ci=0.33μF, Co=0.1μF, unless otherwise specified

Parameter	Symbol	Test Condition		MIN	TYP	MAX	UNIT
Output Voltage	VO	TJ = 25℃		14.4	15	15.6	V
		IO = 5mA to 1A, PO <15W VI = 17.5V to 30V		14.25	15	15.75	
Line Regulation	Δ VO	TJ = 25℃	VI = 17.5V to 30V		15	300	mV
			VI = 20V to 26V		7	150	
Load Regulation	Δ VO	TJ = 25℃ IO = 5mA to 1.0A			25	300	mV
		TJ = 25℃ IO = 250mA to 750mA			10	150	
Quiescent Current	IQ	TJ = 25℃			4	8	mA
Quiescent Current Change	Δ IQ	IO = 5mA to 1A				0.5	mA
		VI = 15V to 30V, Io=500mA				0.8	
Output voltage drift	Δ Vo/Δ T	IO = 5mA			1.8		mV/℃
Output noise voltage	VN	f=10Hz to 100kHz,Ta=25℃			42		uV/Vo
Ripple rejection	RR	f=120Hz, Vi=18V to 28V			60		dB
Dropout voltage	Vo	Io=1.0A,Tj=25℃			2		V
Output resistance	Ro	f=1kHz			18		mΩ
Short Circuit Current	ISC	TJ = 25° C, VI = 35V			200		mA

TEST CIRCUITS

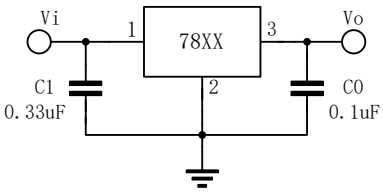


FIG.1 DC PARAMETERS

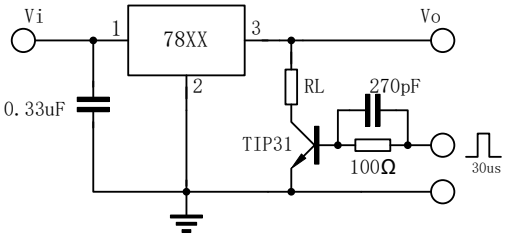


FIG.2 LOAD REGULATION

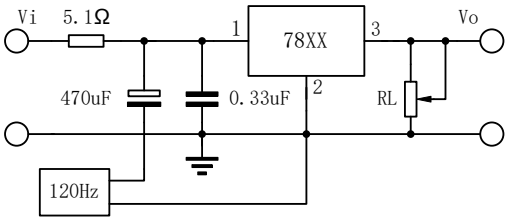


FIG.3 RIPPLE REJECTION

APPLICATION CIRCUITS

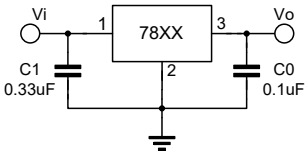


Fig.4 Fixed output regulator

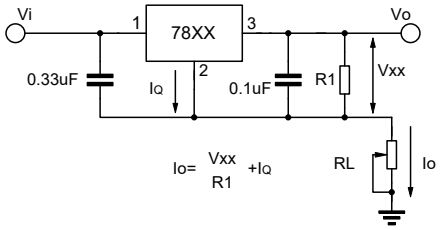


Fig.5 Constant current regulator

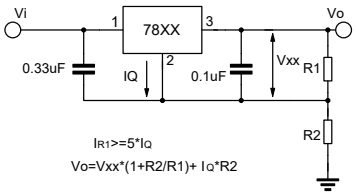


Fig.6 Circuit for increasing Regulator output voltage

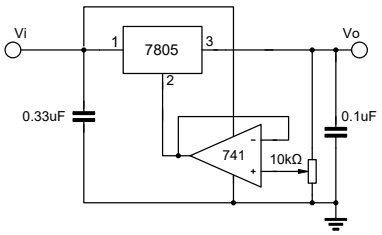
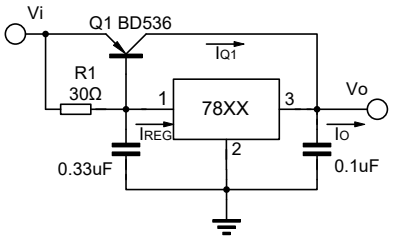
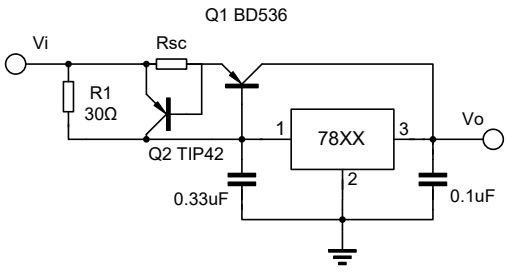


Fig.7 Adjustable output



Io=IREG*(IREG-VBEQ1/R1)
R1=VBEQ1/IREQ-IQ1*Q1

Fig.8 High current with voltage regulator



Rsc=VBEQ2/ Isc

Fig.9 High output 7urrent short circuit protection

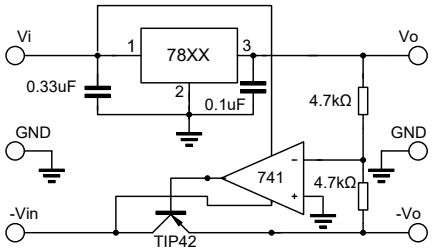


Fig.10 Tracking voltage regulator

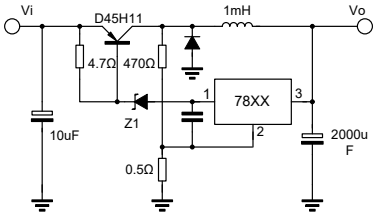


Fig.11 switching regulator

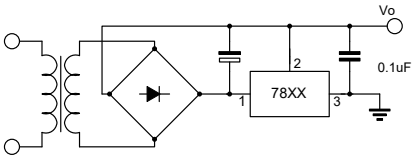
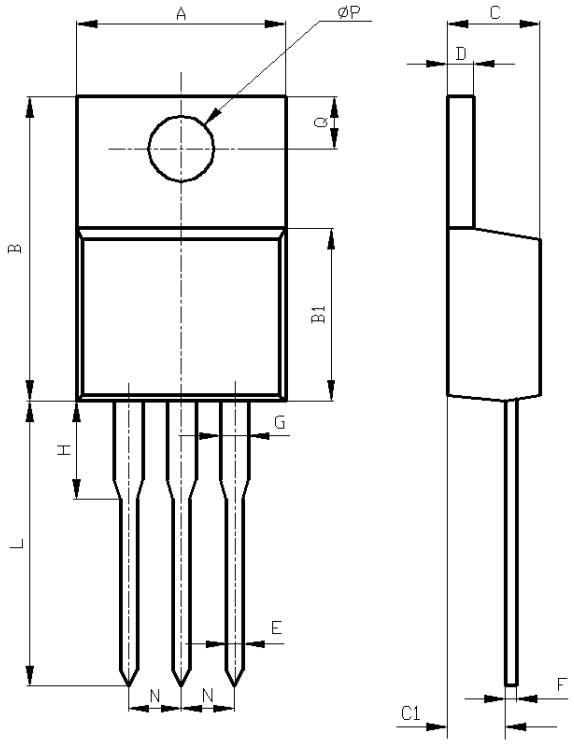


Fig.12 Negative output voltage ciruit

PACKAGE OUTLINE

TO-220



: mm

	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