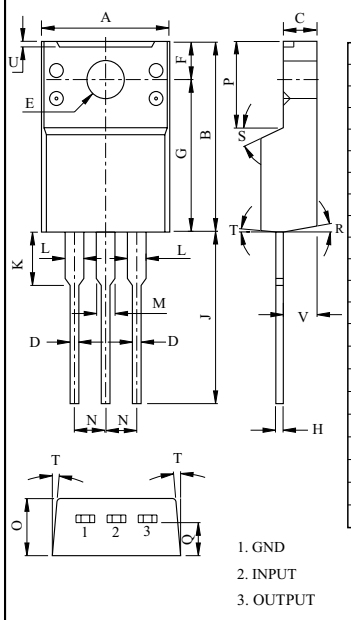
1A THREE TERMINAL NEGATIVE VOLTAGE REGULATORS -12V.



DIM	MILLIMETERS
A	10.30 MAX
B	15.30 MAX
C	2.70±0.30
D	0.85 MAX
E	Φ3.20±0.20
F	3.00±0.30
G	12.30 MAX
H	0.75 MAX
J	13.60±0.50
K	3.90 MAX
L	1.20
M	1.30
N	2.54
O	4.50±0.20
P	6.80
Q	2.60±0.20
R	10°
S	25°
T	5°
U	0.5
V	2.60±0.15

TO-220IS

FEATURES

- Suitable for C-MOS, TTL, and the other digital IC power supply.
- Internal thermal overload protecting.
- Internal short circuit current limiting.
- Output current in excess of 1.0A.

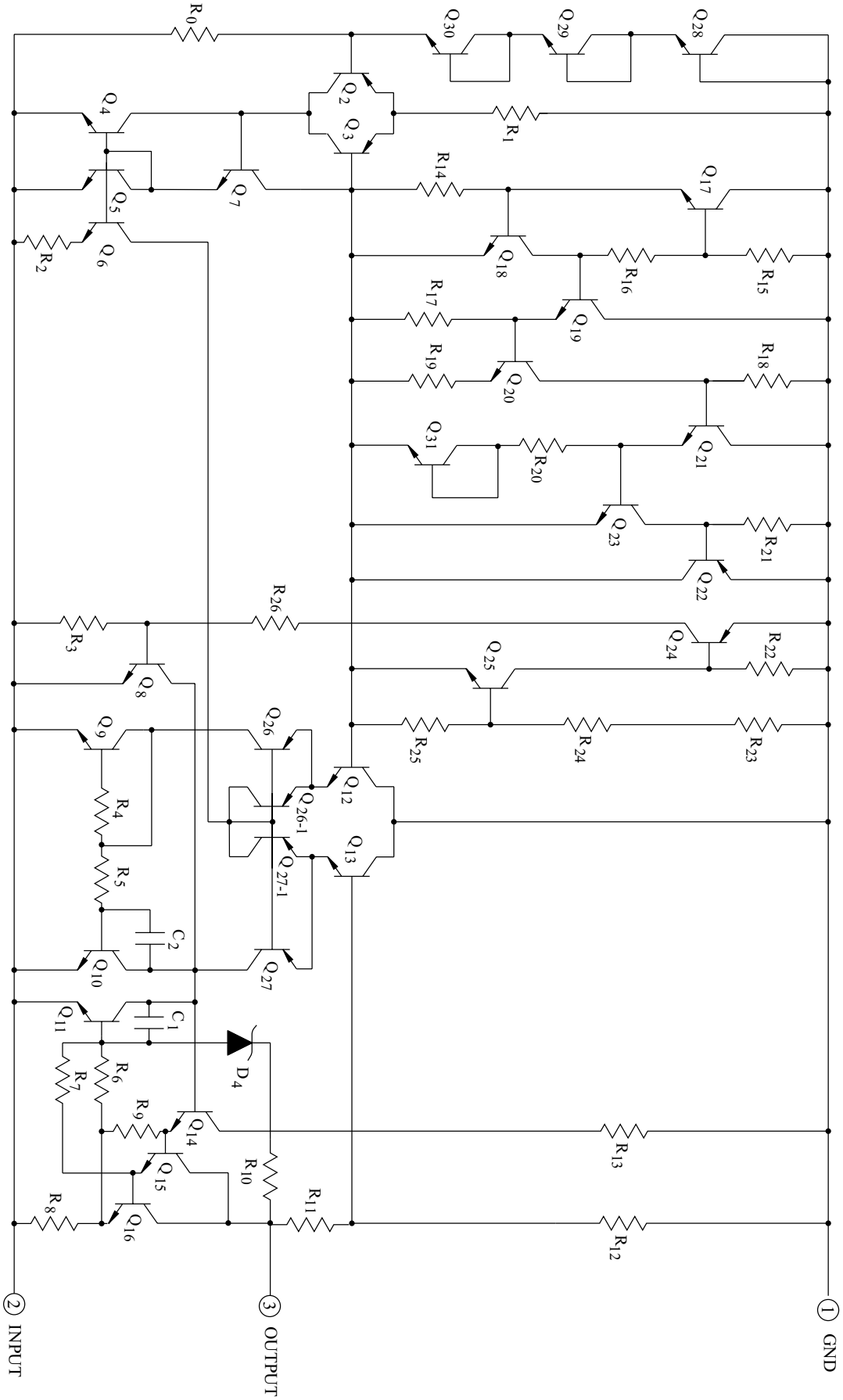
LINE-UP

ITEM	OUTPUT VOLTAGE (Typ.)	UNIT
KIA7912F/PI	-12	

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Input Voltage		V_{IN}	-35	V
Power Dissipation-1 (No Heatsink)	PI	P_{D1}	2.0	W
Power Dissipation-2 (Infinite Heatsink)	PI	P_{D2}	20.8	W
Operating Junction Temperature		T_j	-30 150	℃
Operating Temperature		T_{opr}	-30 75	℃
Storage Temperature		T_{stg}	-55 150	℃

EQUIVALENT CIRCUIT



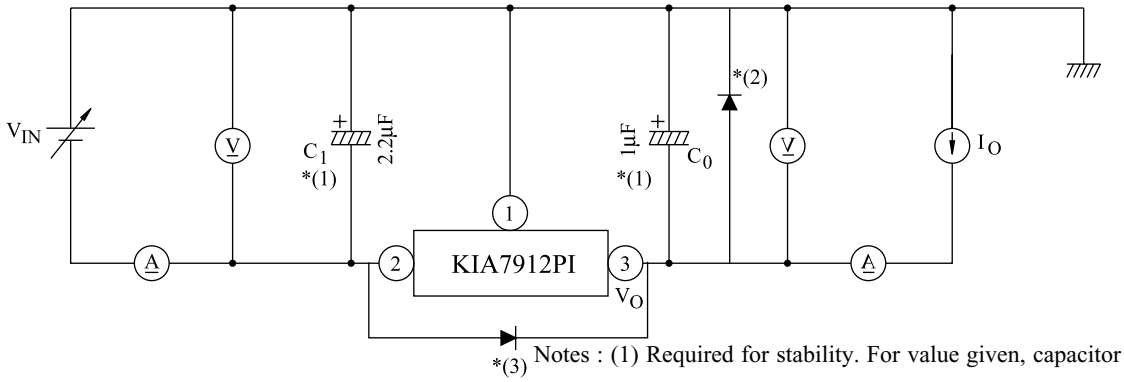
ELECTRICAL CHARACTERISTICS

KIA7912F/PI

(Unless otherwise specified, V_{IN}=-18V, I_{OUT}=500mA, 0℃≦T_j≦125℃, C_{IN}=2.2 μF, C_{OUT}=1 μF)

CHARACTERISTIC		SYMBOL	TEST CIRCUIT	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Output Voltage		V_{OUT}	Fig.1	T_j=25℃		-12.5	-12	-11.5	V
Input Regulation		Reg line	Fig.1	T_j=25℃	-22V≦V_{IN}≦-16V	-	6	120	mV
					-30V≦V_{IN}≦-14.5V	-	12	240	
Load Regulation		Reg load	Fig.1	T_j=25℃	5mA≦I_{OUT}≦1.5A	-	12	240	mV
					250mA≦I_{OUT}≦750mA	-	4	120	
Output Voltage		V_{OUT}	Fig.1	-27V≦V_{IN}≦-15.5V 5mA≦I_{OUT}≦1.0A		-12.6	-12	-11.4	V
Quiescent Current		I_B	Fig.1	T_j=25℃		-	3	6	mA
Quiescent Current Change	Line	ΔI_{BI}	Fig.1	-30V≦V_{IN}≦-15V		-	0.1	1.0	mA
	Load	ΔI_{BO}		5mA≦I_{OUT}≦1.0A		-	0.05	0.5	
Output Noise Voltage		V_{NO}	Fig.2	Ta=25℃, 10Hz≦f≦100kHz		-	200	-	μV_{rms}
Ripple Rejection Ratio		RR	Fig.3	f=120Hz, I_{OUT}=20mA,		54	60	-	dB
Short Circuit Current Limit		I_{SC}	Fig.1	T_j=25℃		-	1.9	-	A
Average Temperature Coefficient of Output Voltage		T_{CVO}	Fig.1	I_{OUT}=5mA		-	-0.8	-	mV/℃
Dropout Voltage		V_D	Fig.1	T_j=25℃, I_{OUT}=1A		-	2.0	-	V

Fig.1 Standard Application Circuit & Protection Circuit



Notes : (1) Required for stability. For value given, capacitor must be solid tantalum. If aluminum electrolitics are used, at least ten times value shown should be selected. C_I is required if regulator is located an appreciable distance from power supply filter.

(2) This diode is used to protect the regulator from output polarity reversals before input voltage is supplied.

(3) To improve transient response. If large output capacitors are used, a high current diode from input to output

Fig.2 V_{NO} Test Circuit

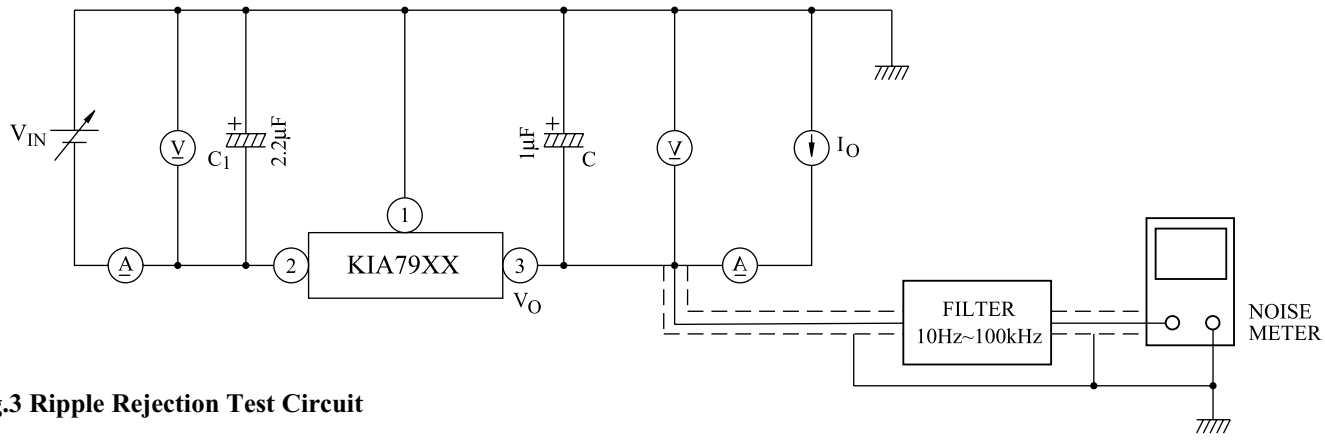
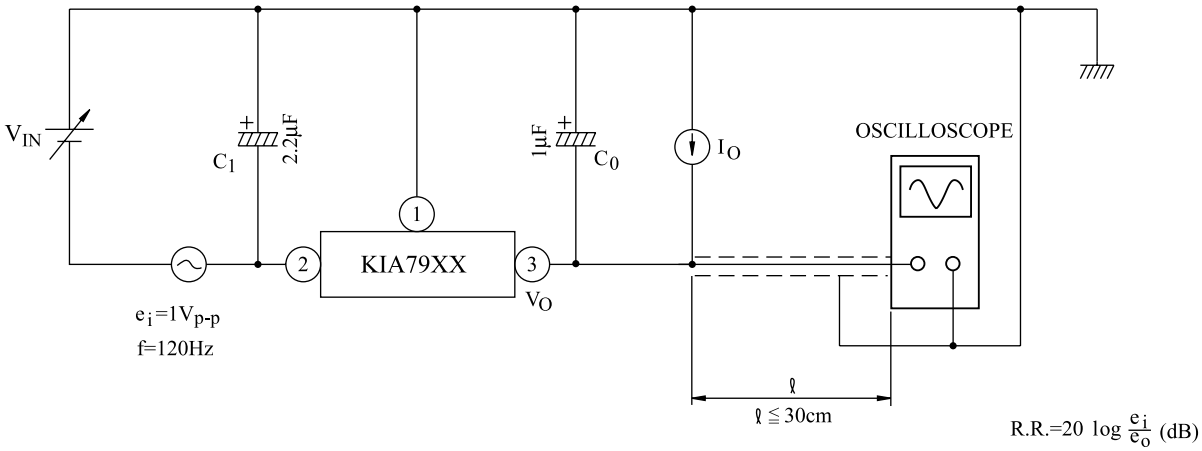


Fig.3 Ripple Rejection Test Circuit



R.R.=20 log $\frac{e_i}{e_o}$ (dB)

Fig. 4

I_B - T_j

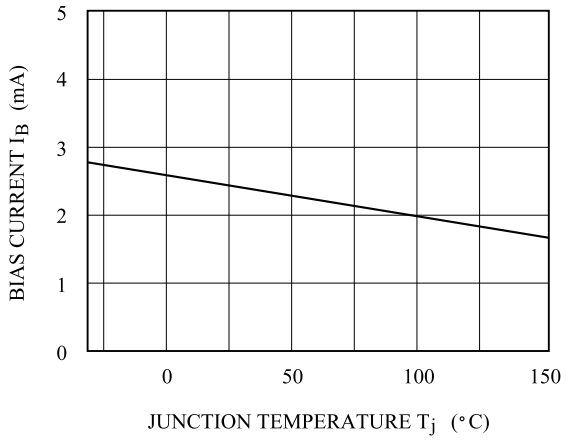


Fig. 5

V_{OUT} - T_j

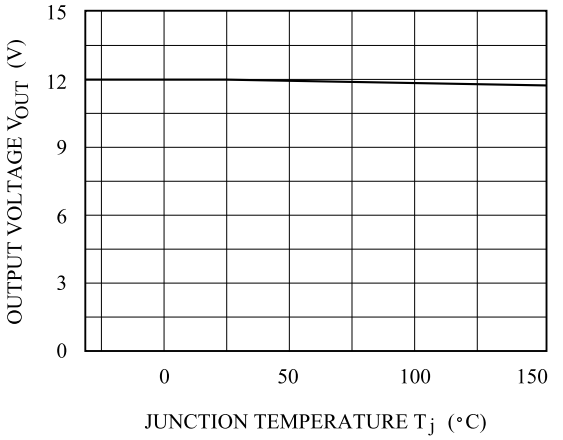


Fig. 6

RR - I_{OUT}

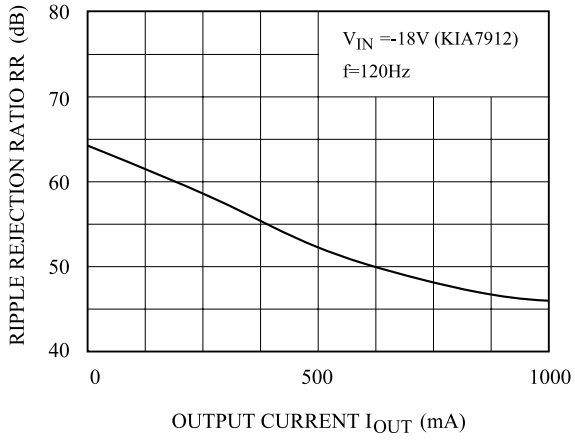


Fig. 7

I_{SC} - V_{IN}

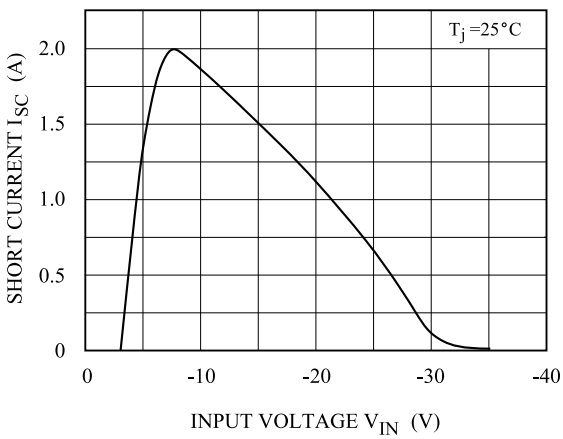


Fig. 8

V_D - T_j

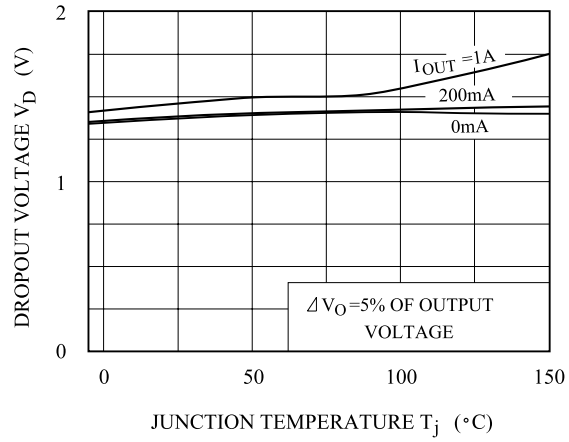


Fig. 9

P_D - Ta (PI-Type : TO-220IS)