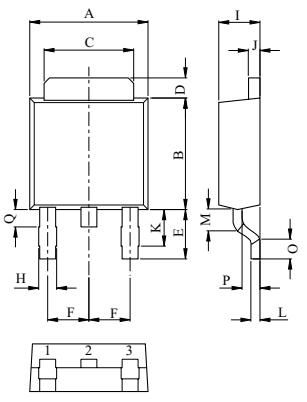
3 TERMINAL LOW DROP OUTPUT VOLTAGE REGULATOR

The KIA78D××F Series are fixed positive output low dropout type, 3-pin voltage regulators with positive outout.
These regulators are used to provide a stabilized output voltage from a fluctuating DC input voltage.
These are 12 fixed output voltage, as follows ; 2.5V, 3.3V, 3.5V, 5V, 6V, 8V, 9V, 10V, 12V, and 15V.
The maximum current capacity is 1A for each of the above voltage.



DIM	MILLIMETERS
A	6.60±0.2
B	6.10±0.2
C	5.0±0.2
D	1.10±0.2
E	2.70±0.2
F	2.30±0.1
H	1.00 MAX
I	2.30±0.2
J	0.50±0.1
K	2.00±0.20
L	0.50±0.10
M	0.91±0.10
O	0.90±0.1
P	1.00±0.10
Q	0.95 MAX

1. INPUT
2. GND
3. OUTPUT

DPAK

FEATURES

- Built in over voltage protection circuit, over current protection circuit and thermal shut down circuit.
- Compatible with the KIA78DXXF Series.
- Richly diverse Lineup.
- Low minimum I/O voltage differential.

LINE UP

ITEM	OUTPUT VOLTAGE (Typ.)	UNIT
KIA78D25F	2.5	V
KIA78D33F	3.3	
KIA78D35F	3.5	
KIA78D05F	5	
KIA78D06F	6	
KIA78D08F	8	
KIA78D09F	9	
KIA78D10F	10	
KIA78D12F	12	
KIA78D15F	15	

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT	Remark
Input Voltage	V_{IN}	35	V	-
Output Current	I_O	1	A	-
Power Dissipation	P_d	1.3	W	(No heatsink)
Junction Temperature	T_j	150	℃	-
Operating Temperature	T_{opr}	-40～85	℃	-
Storage Temperature	T_{stg}	-50～150	℃	-
Soldering Temperature (10sec)	T_{sol}	260	℃	-

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, I_O=0.5A, Ta=25℃, Note1.)

CHARACTERISTIC		SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	KIA78D25F	V_O	-	2.438	2.50	2.562	V
	KIA78D33F		-	3.220	3.30	3.380	
	KIA78D35F		-	3.413	3.50	3.587	
	KIA78D05F		-	4.88	5.0	5.12	
	KIA78D06F		-	5.85	6.0	6.15	
	KIA78D08F		-	7.80	8.0	8.2	
	KIA78D09F		-	8.78	9.0	9.22	
	KIA78D10F		-	9.75	10.0	10.25	
	KIA78D12F		-	11.70	12.0	12.30	
	KIA78D15F		-	14.70	15.0	15.30	
Load Regulation		Reg Load	5mA ≦I_{OUT}≦1A	-	-	0.5	%
Line Regulation		Reg Line	(Note 2)	-	-	0.5	%
Ripple Rejection		R · R	-	45	55	-	dB
Dropout Voltage		V_D	(Note 3)	-	-	0.5	V
Quiescent Current		I_Q	I_{OUT}=0A	-	-	10	mA

Note1) V_{IN} of KIA78D25F=4.2V, V_{IN} of KIA78D33F=5.0V, V_{IN} of KIA78D35F=5.2V, V_{IN} of KIA78D05F=7V, V_{IN} of KIA78D06F=8V, V_{IN} of KIA78D08F=10V, V_{IN} of KIA78D09F=15V, V_{IN} of KIA78D10F=16V, V_{IN} of KIA78D12F=18V V_{IN} of KIA78D15F=21V

Note2) V_{IN} of KIA78D25F=3.2～10V, V_{IN} of KIA78D33F=4.0～10V, V_{IN} of KIA78D35F=4.2～10V, V_{IN} of KIA78D05F=6～12V, V_{IN} of KIA78D06F=7～15V, V_{IN} of KIA78D08F=9～25V, V_{IN} of KIA78D09F=10～25V V_{IN} of KIA78D10F=11～26V, V_{IN} of KIA78D12F=13～29V V_{IN} of KIA78D15F=16～32V

Note3) At V_{IN}=0.95V_O

BLOCK DIAGRAM

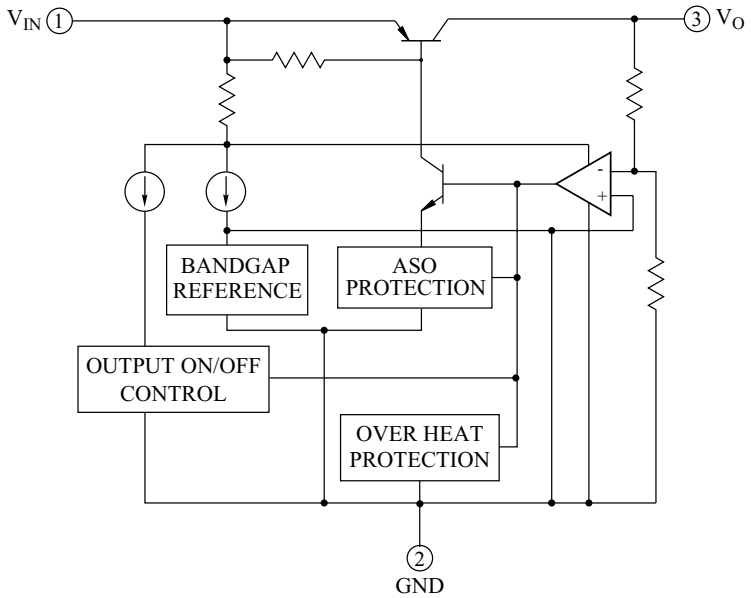


Fig. 1 Standard Test Circuit

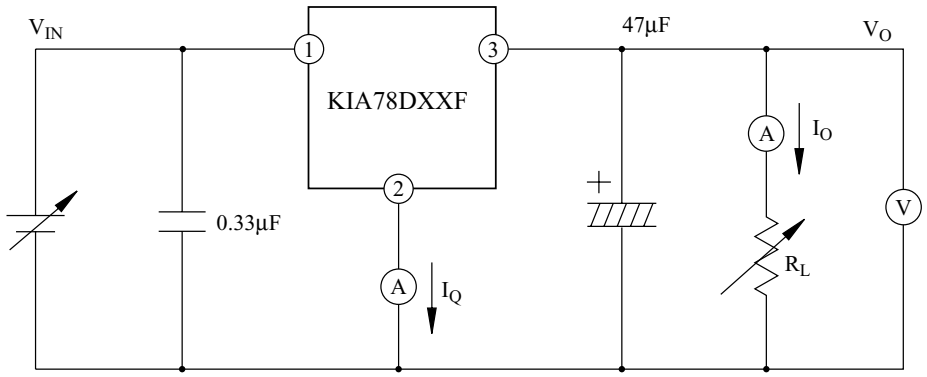
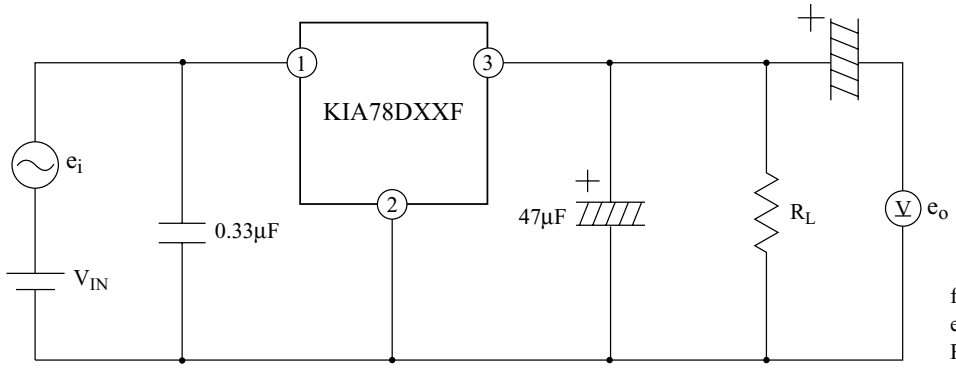


Fig. 2 Ripple Rejection Test Circuit



f=120Hz(sine wave)
ei=0.5Vrms
RR=20log(ei/eo)

Fig. 3 Application Circuit for Standard

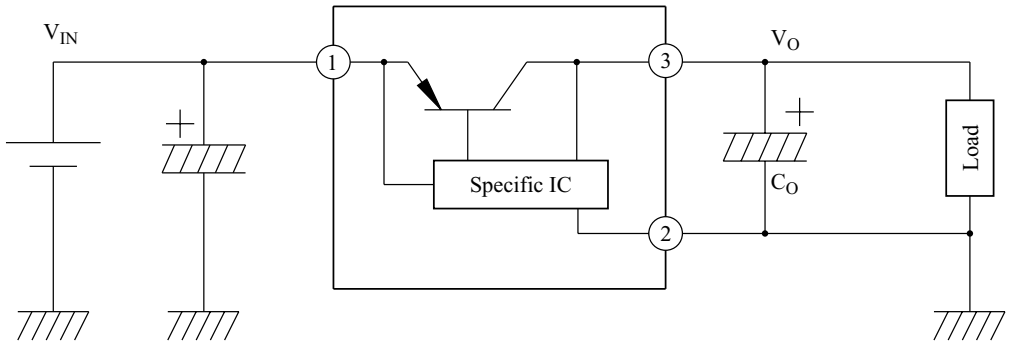


Fig.3 P_D - Ta (F-Type : DPAK)

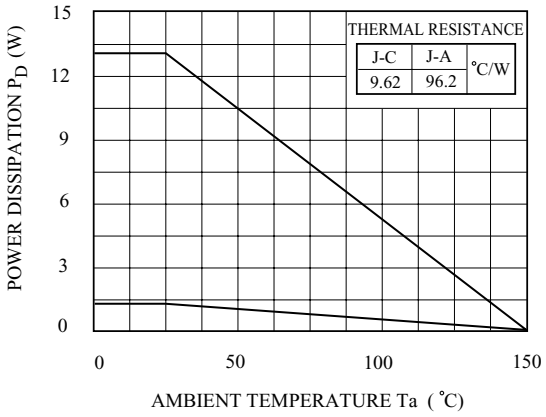


Fig. 4 I_O - V_O

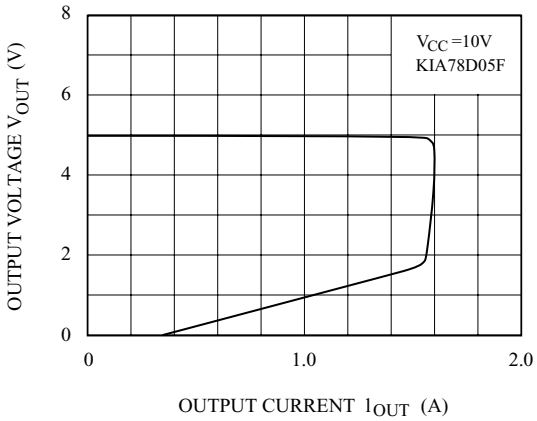


Fig.5-1 T_j - ΔV_O (KIA78D25F)

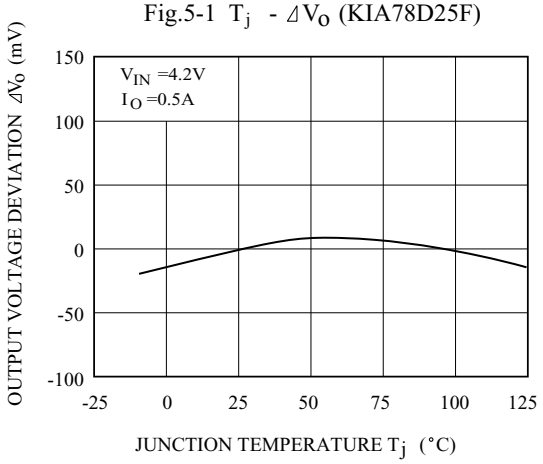


Fig.5-2 T_j - ΔV_O (KIA78D33F)

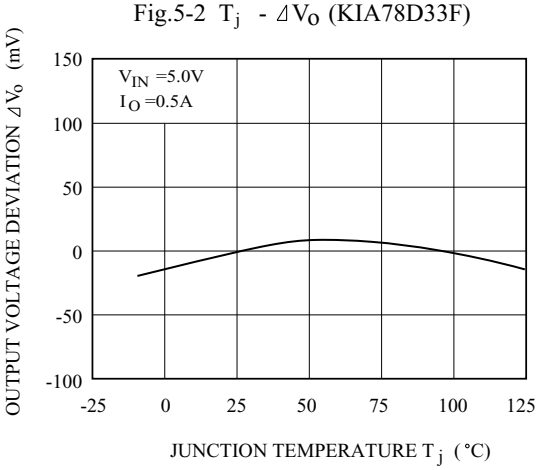


Fig.5-3 T_j - ΔV_O (KIA78D25F)

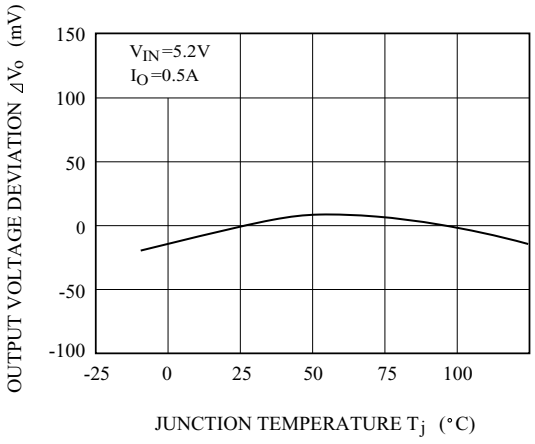


Fig.6 T_j - V_D

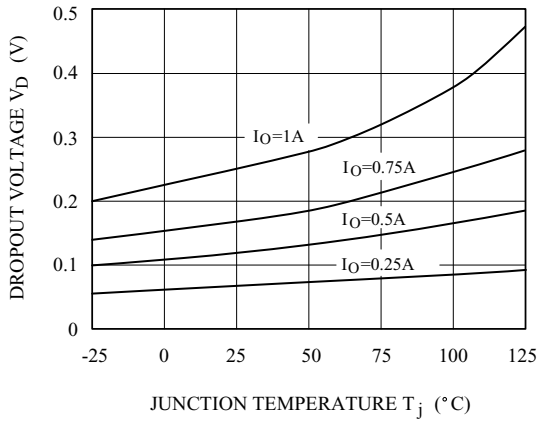


Fig.7 T_j - I_q

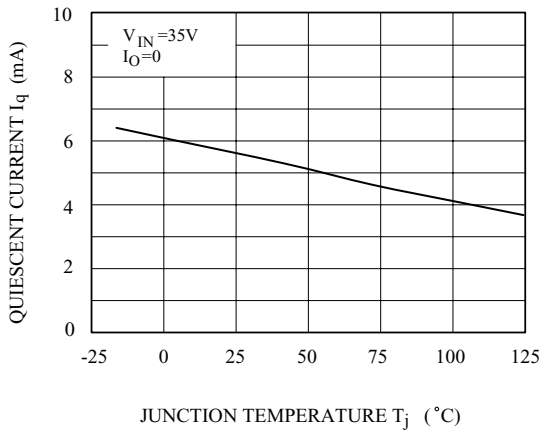


Fig.8 f - R·R

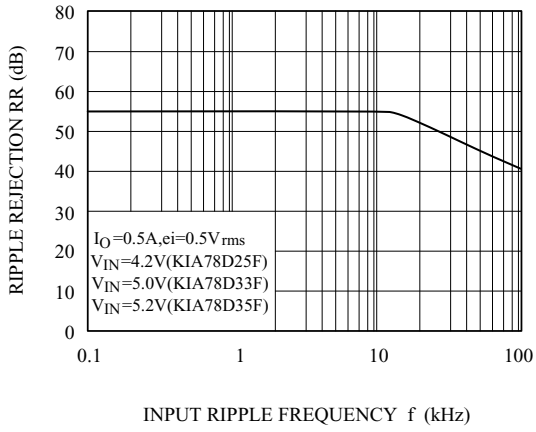


Fig.9 I_O - R·R

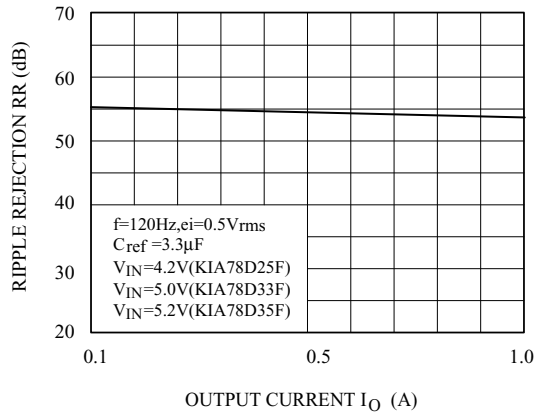


Fig. 10 V_{OUT} - V_{CC}