

3 TERMINAL LOW DROP OUTPUT VOLTAGE REGULATOR

The KIA78D × × F Series are fixed positive output low dropout type, 3-pin voltage regulators with positive output.

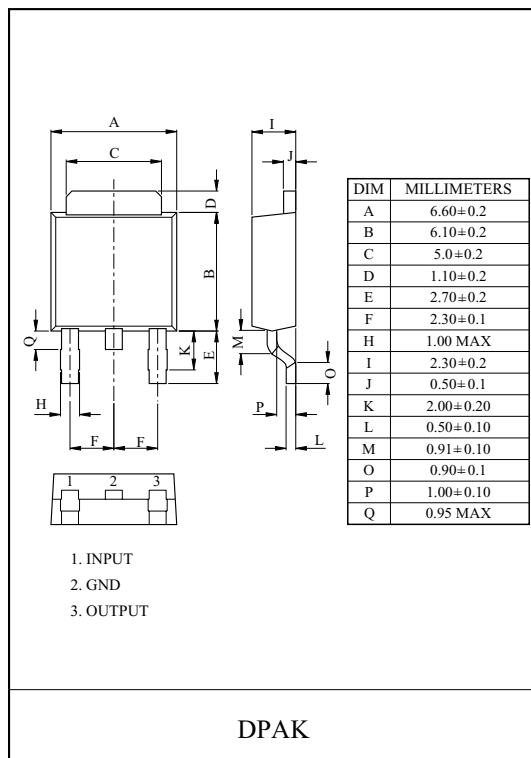
These regulators are used to provide a stabilized output voltage from a fluctuating DC input voltage.

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.

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 °C)

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	°C	-
Operating Temperature	T _{opr}	-40~85	°C	-
Storage Temperature	T _{stg}	-50~150	°C	-
Soldering Temperature (10sec)	T _{sol}	260	°C	-

KIA78D25F~78D15F

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, $I_O=0.5A$, $T_a=25^\circ C$, Note1.)

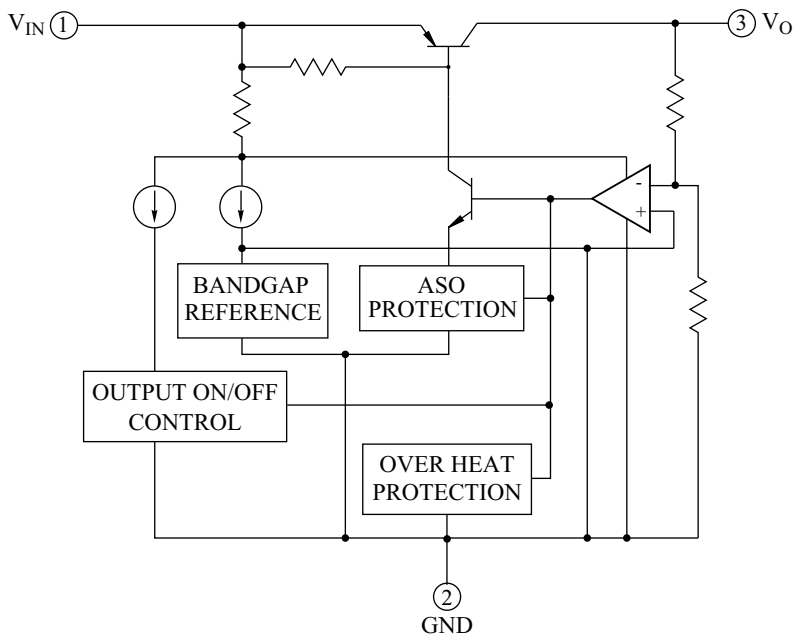
CHARACTERISTIC		SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	KIA78D25F	V_O	-	2.438	2.50	2.562	V
	KIA78D33F		-	3.220	3.30	3.380	
	KIA78D35F		-	3.413	3.50	3.587	
	KIA78D05F		-	4.88	5.0	5.12	
	KIA78D06F		-	5.85	6.0	6.15	
	KIA78D08F		-	7.80	8.0	8.2	
	KIA78D09F		-	8.78	9.0	9.22	
	KIA78D10F		-	9.75	10.0	10.25	
	KIA78D12F		-	11.70	12.0	12.30	
	KIA78D15F		-	14.70	15.0	15.30	
Load Regulation		Reg Load	$5mA \leq I_{OUT} \leq 1A$	-	-	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



KIA78D25F~78D15F

Fig. 1 Standard Test Circuit

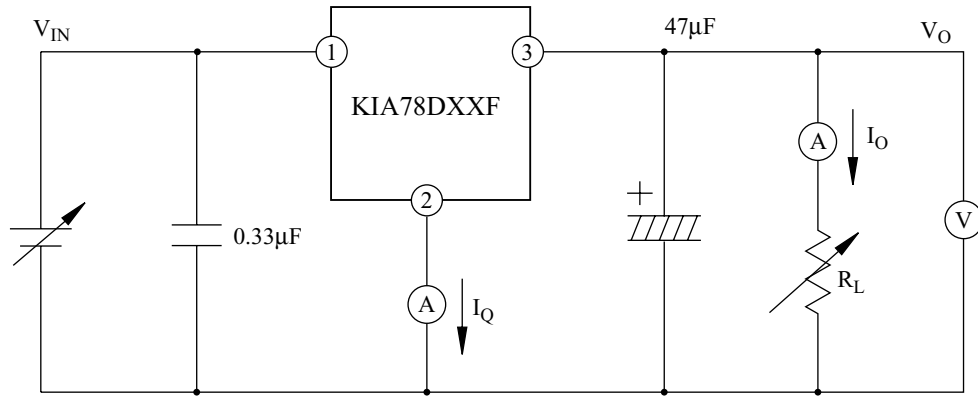


Fig. 2 Ripple Rejection Test Circuit

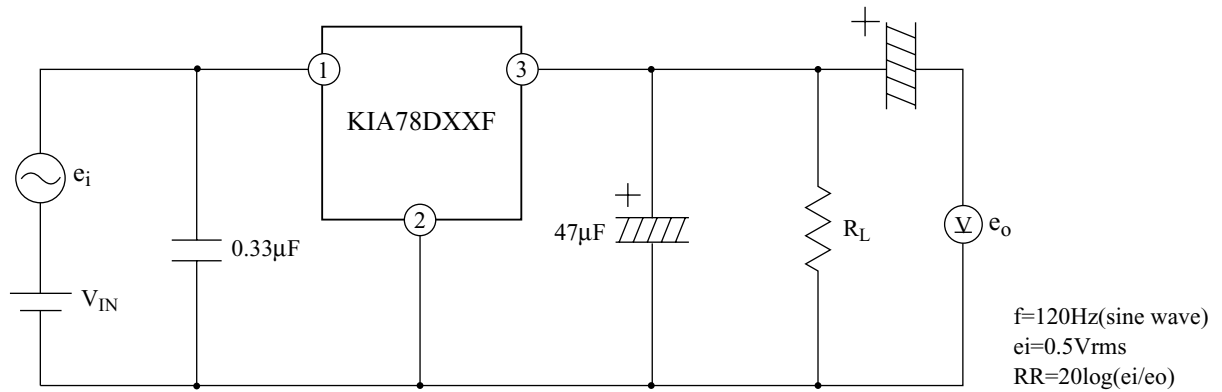
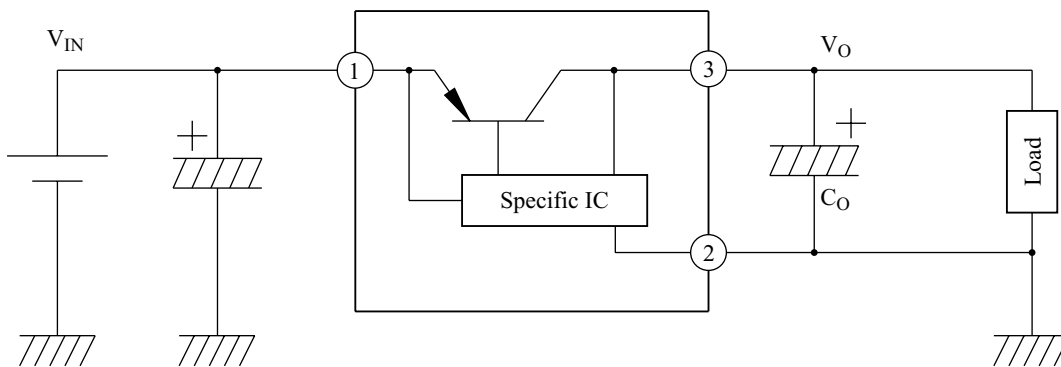


Fig. 3 Application Circuit for Standard



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Fig.3 $P_D - T_a$ (F-Type : DPAK)

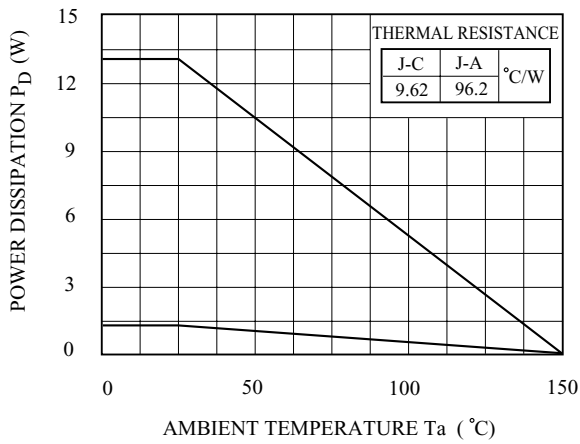


Fig. 4 $I_O - V_O$

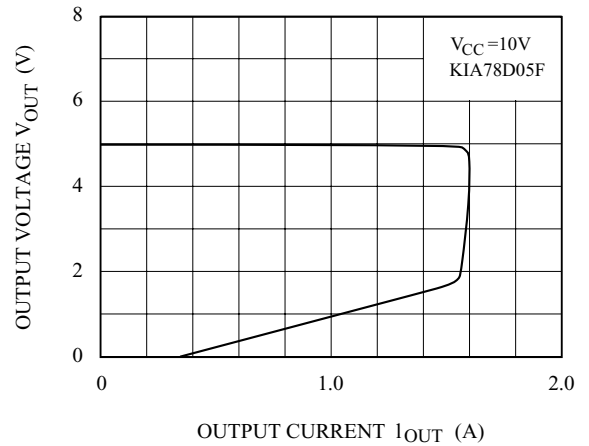


Fig.5-1 $T_j - \Delta V_O$ (KIA78D25F)

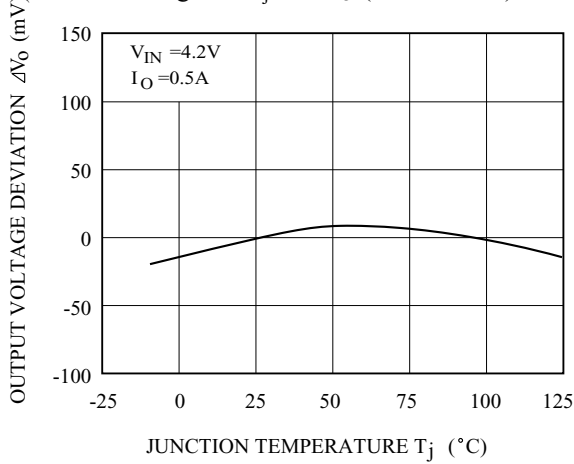


Fig.5-2 $T_j - \Delta V_O$ (KIA78D33F)

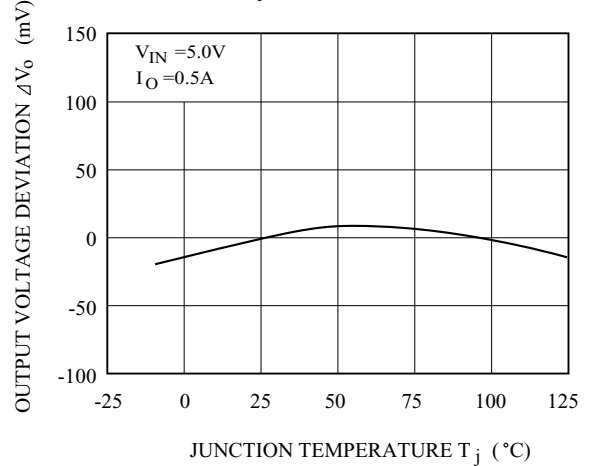


Fig.5-3 $T_j - \Delta V_O$ (KIA78D25F)

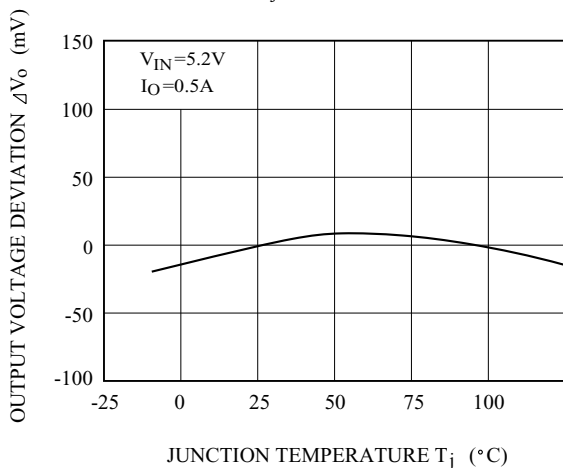
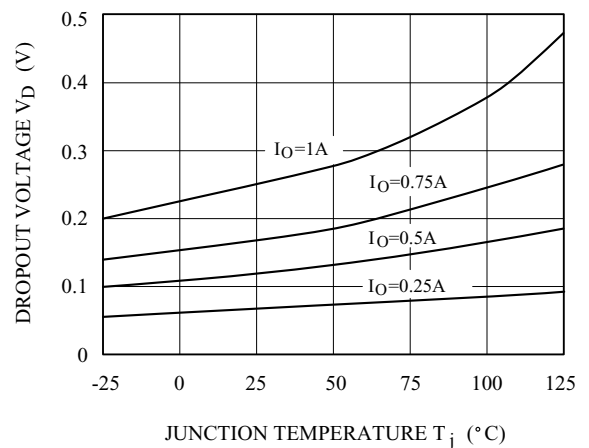


Fig.6 $T_j - V_D$



KIA78D25F~78D15F

Fig.7 $T_j - I_q$

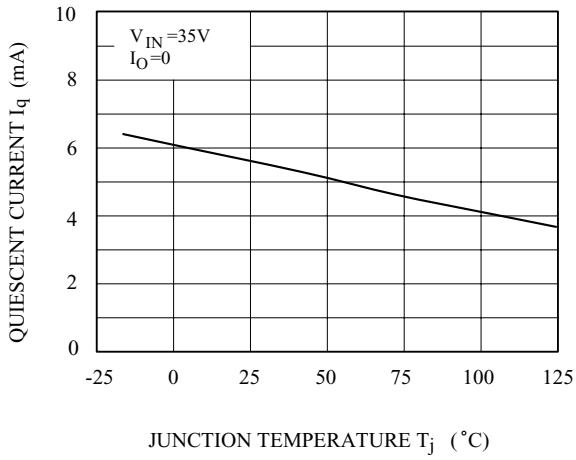


Fig.8 $f - R\cdot R$

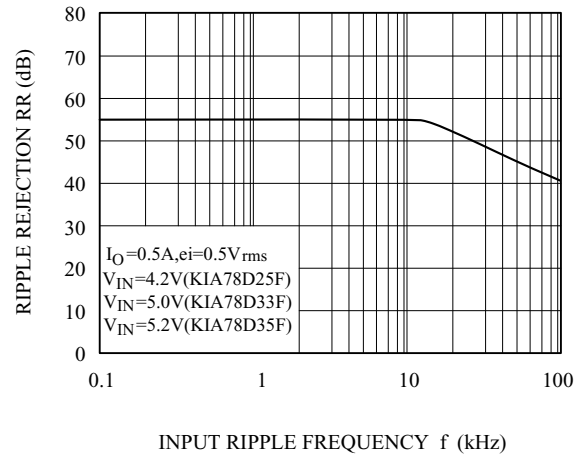


Fig.9 $I_O - R\cdot R$

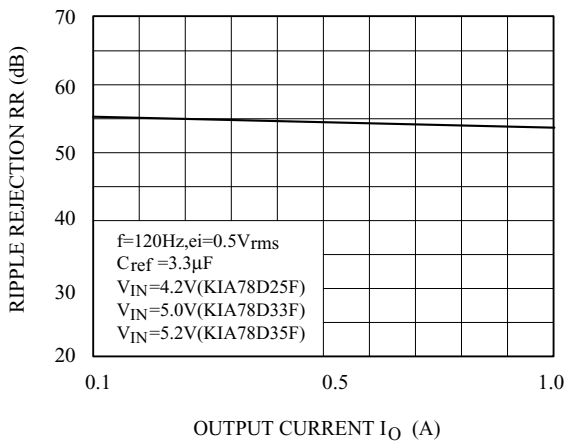


Fig. 10 $V_{OUT} - V_{CC}$

