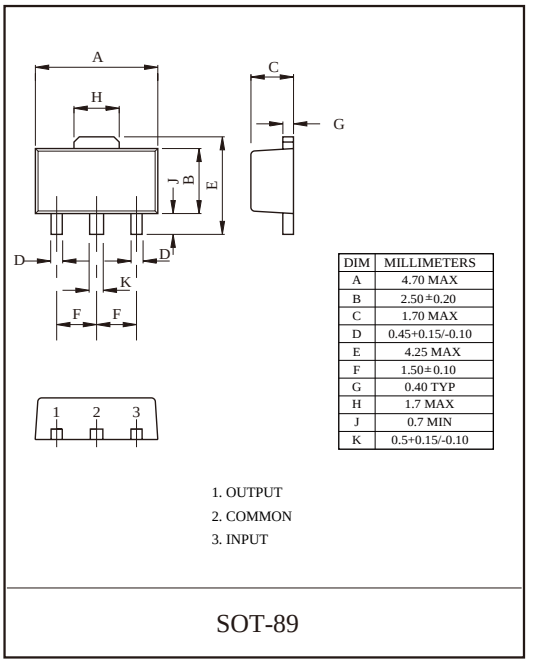
Three Terminal Positive Voltage Regulators
(Vout=3.3V)



DIM	MILLIMETERS
A	4.70 MAX
B	2.50±0.20
C	1.70 MAX
D	0.45+0.15/-0.10
E	4.25 MAX
F	1.50±0.10
G	0.40 TYP
H	1.7 MAX
J	0.7 MIN
K	0.5+0.15/-0.10

SOT-89

Features

· Best Suited to Power Supply for TTL, C^2-MOS.
· No External Part Needed.
· Built-in Thermal Protective Circuit.
· Max. Output Current 100mA (T_j=25℃).

CHARACTERISTIC	SYMBOL	RATING	UNIT
Input Voltage	V_{IN}	25	V
Power Dissipation	P_D	500	mW
Operating Junction Temperature	T_j	- 40 ~ 150	℃
Storage Temperature	T_{stg}	- 65 ~ 150	℃

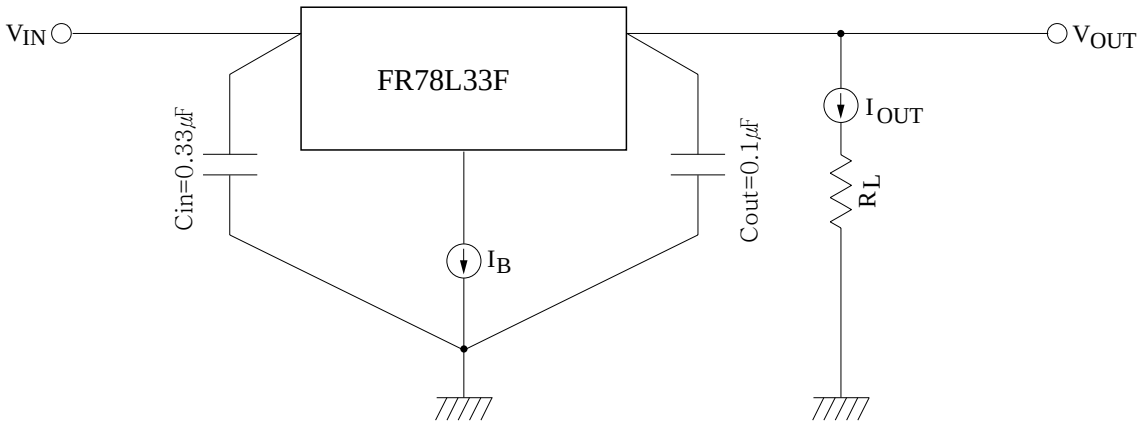
Electrical Characteristics

FR78L33F

(Unless otherwise specified, V_{IN}=8.3V, I_{OUT}=40mA, C_{IN}=0.33μF, C_{OUT}=0.1μF, 0℃≤T_j≤125℃)

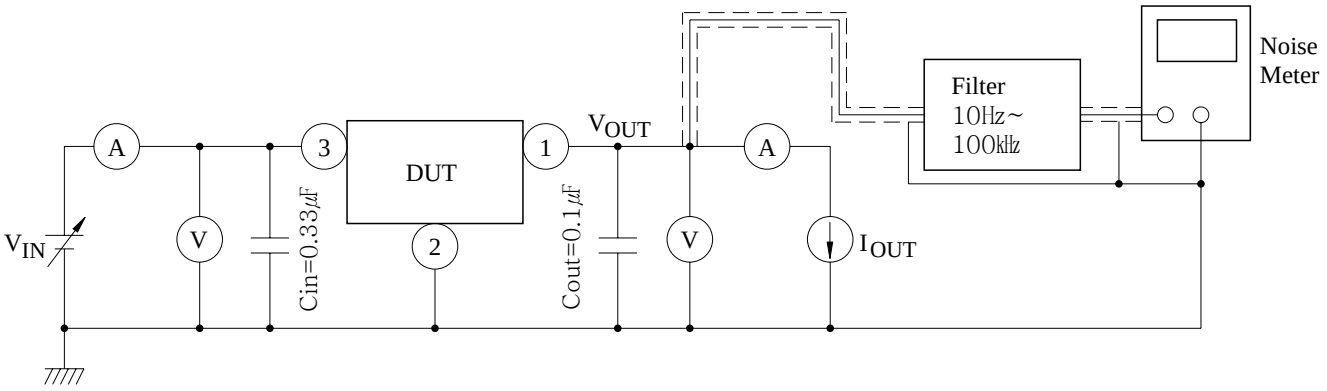
Characteristics	Symbol	Test Circuit	Test Condition		Min.	Typ.	Max.	Unit
Output Voltage	V_{OUT}	1	T_j=25℃		3.168	3.3	3.432	V
			5.8V≤ V_{IN}≤20V, 1.0mA≤ I_{OUT}≤40mA		3.135	3.3	3.465	V
			1.0mA≤ I_{OUT} ≤70mA		3.135	3.3	3.465	
Line Regulation	Reg line	1	T_j=25℃	5.8V≤ V_{IN}≤20V	-	32	150	mV
				6.3V≤ V_{IN}≤20V	-	26	100	
Load Regulation	Reg load	1	T_j=25℃	1.0mA≤ I_{OUT} ≤150mA	-	25	100	mV
				1.0mA≤ I_{OUT}≤40mA	-	8	30	
Quiescent Current	I_B	1	T_j=25℃		-	3.8	6.0	mA
			T_j=125℃		-	-	5.5	
Quiescent Current Change	ΔI_B	1	6.3V≤ V_{IN}≤20V		-	-	1.5	mA
			1.0mA≤ I_{OUT}≤40mA		-	-	0.1	
Output Noise Voltage	V_{NO}	1	Ta=25℃, 10Hz≤ f ≤100kHz		-	42	-	μV_{rms}
Ripple Rejection Ratio	RR	2	f=120Hz, 6.3V≤ V_{IN}≤16.3V, T_j=25℃		41	49	-	dB
Dropout Voltage	V_D	1	T_j=25℃, I_{OUT}=100mA		-	2.5	-	V

Test Circuit / Standard Application Circuit



Test Circuit

1. V_{OUT} , Reg - line , Reg - load , I_B , $\triangle I_B$, V_{NO} , V_D



2. RR

e_i = 1V p-p
f = 120Hz
ℓ ≦ 30cm

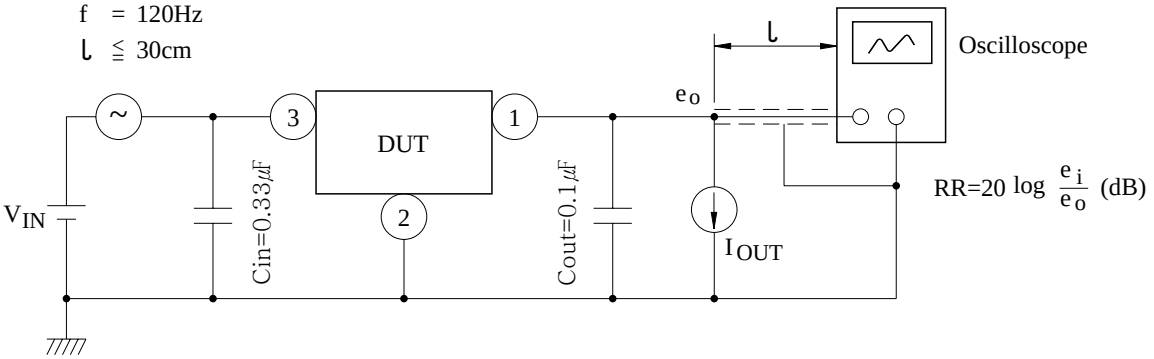


Fig. 4

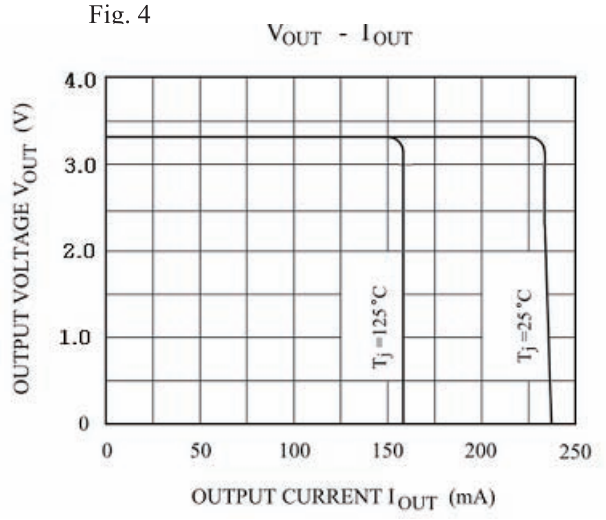


Fig. 5

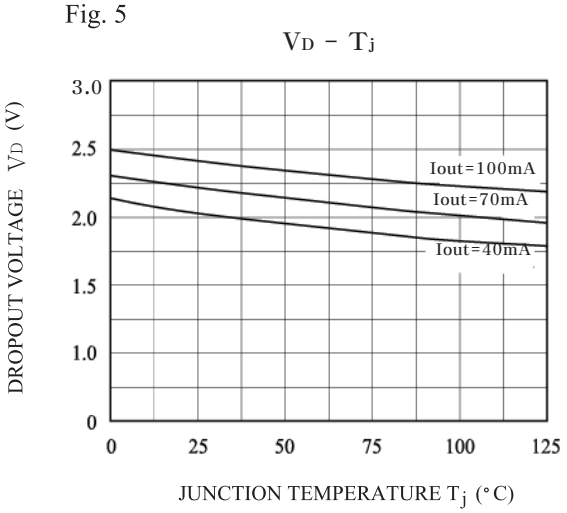


Fig. 6

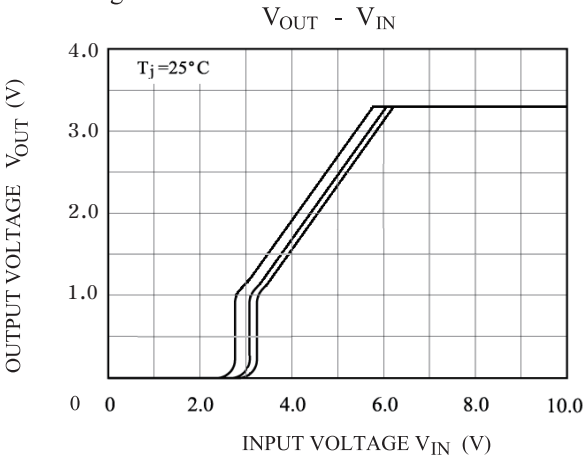


Fig. 7

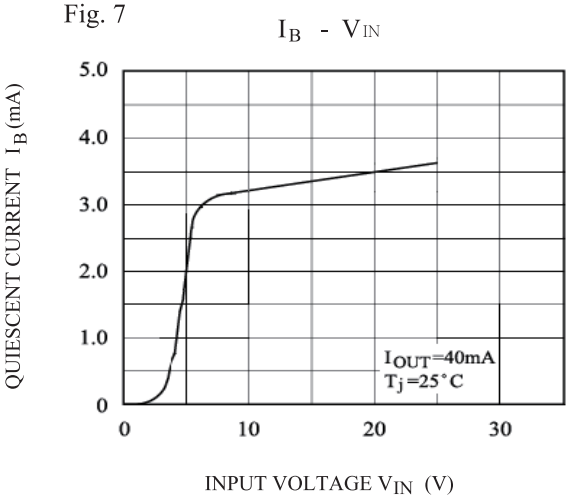


Fig. 8