

3-Terminal Fixed Voltage Positive Regulators

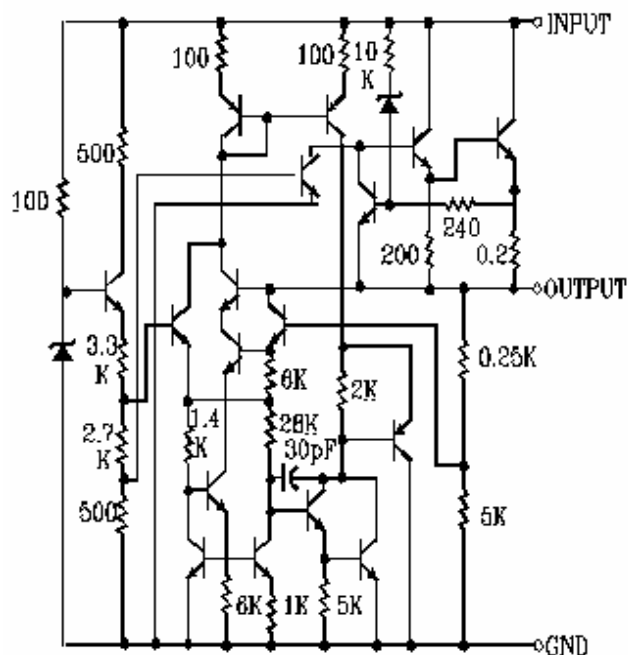
These voltage regulators are monolithic integrated circuits designed as fixed-voltage regulators for a wide variety of applications including local, on-card regulation. These regulators employ internal current limiting, thermal shutdown, and safe-area compensation.

FEATURES

- Output Current up to 1 Ampere
- No External Components Required
- Internal Thermal Overload Protection
- Internal Short-Circuit Current Limiting
- Output Transistor Safe-Area Compensation
- Output Voltage Offered in 4% Tolerance

CIRCUIT SCHEMATIC

Representative Schematic Diagram



With adequate heatsinking they can deliver output currents up to 1 ampere.

Although designed primarily as a fixed voltage regulator, these devices can be used with external components to obtain adjustable voltages and currents.

PIN ARRANGEMENT

TO-220



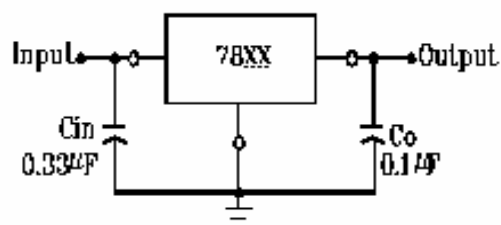
TO-220F



Pin: 1.Input
2.Ground
3.Output

(Heatsink surface connected to Pin 2.)

Standard Application



A common ground is required between the input and the output voltages. The input voltage must remain typically 2.0V above the output voltage even during the low point on the Input ripple voltage.

XX = these two digits of the type number indicate voltage.

* = Cin is required if regulator is located an appreciable distance from power supply filter.

** = Co is not needed for stability; however, it does improve transient response.

3-Terminal Fixed Voltage Positive Regulators

• ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

RATING	SYMBOL	PJ7800 Series	UNIT
Input Voltage	Vin *	35	V
Input Voltage	Vin **	40	V
Power Dissipation TO-220	Without heatsink	2	°C / W
TO-220	Pt ***	15	
TO-220F	With heatsink	10	
Operating Ambient Temperature	Topr	-20 to +85	°C
Operating Junction Temperature	Tj	0 to +125	°C
Storage Temperature	Tstg	-25 to +150	°C

Note: * PJ7805 to PJ7818

** PJ7824

*** Follow the derating curve

• ORDERING INFORMATION

DEVICE	OPERATING TEMPERATURE (AMBIENT)	PACKAGE
PJ78xxCZ	-20°C to +85°C	TO-220
PJ78xxCI		TO-220F

• PJ7805 ELECTRICAL CHARACTERISTICS

(Vin=10V, Iout=500mA, 0°C≤Tj≤125°C, Cin=0.33 μF, Cout=0.1 μF; unless otherwise specified.)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	Vout	Tj=25°C	4.80	5	5.20	V
		7V≤Vin≤20V, 5mA≤Iout≤1.5A, PD≤15W	4.75	5	5.25	
Line Regulation	REGline	Tj=25°C	--	3	100	mV
		7.5V≤Vin≤25V				
Load Regulation	REGload	Tj=25°C	--	15	100	mV
		5mA≤Iout≤1.5A				
Quiescent Current	Iq	Iout=0, Tj=25°C	--	4.2	8	mA
Quiescent Current Change	ΔIq	7V≤Vin≤25V	--	--	1.3	mA
		5mA≤Iout≤1.5A	--	--	0.5	mA
Output Noise Voltage	Vn	10Hz≤f≤100KHz, Tj=25°C	--	40	--	μV
Ripple Rejection Ratio	RR	f=120Hz, 8V≤Vin≤18V	62	78	--	dB
Voltage Drop	Vdrop	Iout=1.0A, Tj=25°C	--	2	--	V
Output Resistance	Rout	f=1KHz	--	17	--	mΩ
Output Short Circuit Current	Ios	Tj=25°C	--	750	--	mA
Peak Output Current	Io peak	Tj=25°C	--	2.2	--	A
Temperature Coefficient of Output Voltage	ΔVout/ΔTj	Iout=5mA, 0°C≤Tj≤125°C	--	-0.6	--	mV/°C

* Pulse testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible, and thermal effects must be taken into account separately.

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3-Terminal Fixed Voltage Positive Regulators

• PJ7806 ELECTRICAL CHARACTERISTICS

($V_{in}=11V$, $I_{out}=500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{in}=0.33 \mu F$, $C_{out}=0.1 \mu F$; unless otherwise specified.)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS		MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{out}	$T_j=25^{\circ}C$		5.75	6	6.25	V
		$8V \leq V_{in} \leq 21V$, $5mA \leq I_{out} \leq 1.5A$, $PD \leq 15W$		6.3	6	6.3	
Line Regulation	REG _{line}	$T_j=25^{\circ}C$	$8V \leq V_{in} \leq 25V$	--	5	120	mV
			$9V \leq V_{in} \leq 13V$	--	1.5	60	mV
Load Regulation	REG _{load}	$T_j=25^{\circ}C$	$5mA \leq I_{out} \leq 1.5A$	--	14	120	mV
			$250mA \leq I_{out} \leq 750mA$	--	4	60	mV
Quiescent Current	I_q	$I_{out}=0$, $T_j=25^{\circ}C$		--	4.3	8	mA
Quiescent Current Change	ΔI_q	$8V \leq V_{in} \leq 25V$		--	--	1.3	mA
		$5mA \leq I_{out} \leq 1.5A$		--	--	0.5	mA
Output Noise Voltage	V_n	$10Hz \leq f \leq 100KHz$, $T_j=25^{\circ}C$		--	45	--	μV
Ripple Rejection Ratio	RR	$f=120Hz$, $9V \leq V_{in} \leq 19V$		59	75	--	dB
Voltage Drop	V_{drop}	$I_{out}=1.0A$, $T_j=25^{\circ}C$		--	2	--	V
Output Resistance	R_{out}	$f=1KHz$		--	19	--	$m\Omega$
Output Short Circuit Current	I_{os}	$T_j=25^{\circ}C$		--	550	--	mA
Peak Output Current	$I_{o peak}$	$T_j=25^{\circ}C$		--	2.2	--	A
Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out}=5mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$		--	-0.7	--	mV/ $^{\circ}C$

• PJ7808 ELECTRICAL CHARACTERISTICS

($V_{in}=14V$, $I_{out}=500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{in}=0.33 \mu F$, $C_{out}=0.1 \mu F$; unless otherwise specified.)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS		MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{out}	$T_j=25^{\circ}C$		7.69	8	8.32	V
		$10.5V \leq V_{in} \leq 23V$, $5mA \leq I_{out} \leq 1.5A$, $PD \leq 15W$		7.61	8	8.40	
Line Regulation	REG _{line}	$T_j=25^{\circ}C$	$10.5V \leq V_{in} \leq 25V$	--	6	160	mV
			$11V \leq V_{in} \leq 17V$	--	2	80	mV
Load Regulation	REG _{load}	$T_j=25^{\circ}C$	$10mA \leq I_{out} \leq 1.5A$	--	12	160	mV
			$250mA \leq I_{out} \leq 750mA$	--	4	80	mV
Quiescent Current	I_q	$I_{out}=0$, $T_j=25^{\circ}C$		--	4.3	8	mA
Quiescent Current Change	ΔI_q	$10.5V \leq V_{in} \leq 25V$		--	--	1	mA
		$5mA \leq I_{out} \leq 1.5A$		--	--	0.5	mA
Output Noise Voltage	V_n	$10Hz \leq f \leq 100KHz$, $T_j=25^{\circ}C$		--	52	--	μV
Ripple Rejection Ratio	RR	$f=120Hz$, $11V \leq V_{in} \leq 21V$		56	72	--	dB
Voltage Drop	V_{drop}	$I_{out}=1.0A$, $T_j=25^{\circ}C$		--	2	--	V
Output Resistance	R_{out}	$f=1KHz$		--	16	--	$m\Omega$
Output Short Circuit Current	I_{os}	$T_j=25^{\circ}C$		--	450	--	mA
Peak Output Current	$I_{o peak}$	$T_j=25^{\circ}C$		--	2.2	--	A
Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out}=5mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$		--	-0.8	--	mV/ $^{\circ}C$

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3-Terminal Fixed Voltage Positive Regulators

• PJ7809 ELECTRICAL CHARACTERISTICS

($V_{in}=15V$, $I_{out}=500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{in}=0.33 \mu F$, $C_{out}=0.1 \mu F$; unless otherwise specified.)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{out}	$T_j=25^{\circ}C$	8.65	9	9.36	V
		$10.5V \leq V_{in} \leq 23V$, $5mA \leq I_{out} \leq 1.5A$, $P_D \leq 15W$	8.57	9	9.45	
Line Regulation	REG _{line}	$T_j=25^{\circ}C$	$11.5V \leq V_{in} \leq 26V$	--	6	mV
			$11.5V \leq V_{in} \leq 17V$	--	2	mV
Load Regulation	REG _{load}	$T_j=25^{\circ}C$	$5mA \leq I_{out} \leq 1.5A$	--	12	mV
			$250mA \leq I_{out} \leq 750mA$	--	4	mV
Quiescent Current	I_q	$I_{out}=0$, $T_j=25^{\circ}C$	--	4.3	8	mA
Quiescent Current Change	ΔI_q	$11.5V \leq V_{in} \leq 26V$	--	--	1	mA
		$5mA \leq I_{out} \leq 1.5A$	--	--	0.5	mA
Output Noise Voltage	V_n	$10Hz \leq f \leq 100KHz$, $T_j=25^{\circ}C$	--	52	--	μV
Ripple Rejection Ratio	RR	$f=120Hz$, $11.5V \leq V_{in} \leq 21.5V$	55	72	--	dB
Voltage Drop	V_{drop}	$I_{out}=1.0A$, $T_j=25^{\circ}C$	--	2	--	V
Output Resistance	R_{out}	$f=1KHz$	--	16	--	$m\Omega$
Output Short Circuit Current	I_{os}	$T_j=25^{\circ}C$	--	450	--	mA
Peak Output Current	$I_{o peak}$	$T_j=25^{\circ}C$	--	2.2	--	A
Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out}=5mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-1	--	$mV/^{\circ}C$

• PJ7810 ELECTRICAL CHARACTERISTICS

($V_{in}=16V$, $I_{out}=500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{in}=0.33 \mu F$, $C_{out}=0.1 \mu F$; unless otherwise specified.)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{out}	$T_j=25^{\circ}C$	9.6	10	10.4	V
		$12.5V \leq V_{in} \leq 25V$, $5mA \leq I_{out} \leq 1.5A$, $P_D \leq 15W$	9.5	10	10.5	
Line Regulation	REG _{line}	$T_j=25^{\circ}C$	$12.5V \leq V_{in} \leq 28V$	--	7	mV
			$13V \leq V_{in} \leq 17V$	--	2	mV
Load Regulation	REG _{load}	$T_j=25^{\circ}C$	$10mA \leq I_{out} \leq 1.5A$	--	12	mV
			$250mA \leq I_{out} \leq 750mA$	--	4	mV
Quiescent Current	I_q	$I_{out}=0$, $T_j=25^{\circ}C$	--	4.3	8	mA
Quiescent Current Change	ΔI_q	$12.5V \leq V_{in} \leq 28V$	--	--	1	mA
		$5mA \leq I_{out} \leq 1.5A$	--	--	0.5	mA
Output Noise Voltage	V_n	$10Hz \leq f \leq 100KHz$, $T_j=25^{\circ}C$	--	70	--	μV
Ripple Rejection Ratio	RR	$f=120Hz$, $13V \leq V_{in} \leq 23V$	55	71	--	dB
Voltage Drop	V_{drop}	$I_{out}=1.0A$, $T_j=25^{\circ}C$	--	2	--	V
Output Resistance	R_{out}	$f=1KHz$	--	18	--	$m\Omega$
Output Short Circuit Current	I_{os}	$T_j=25^{\circ}C$	--	400	--	mA
Peak Output Current	$I_{o peak}$	$T_j=25^{\circ}C$	--	2.2	--	A
Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out}=5mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-1	--	$mV/^{\circ}C$

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3-Terminal Fixed Voltage Positive Regulators

• PJ7812 ELECTRICAL CHARACTERISTICS

$V_{in}=19V$, $I_{out}=500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{in}=0.33 \mu F$, $C_{out}=0.1 \mu F$; unless otherwise specified.)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{out}	$T_j=25^{\circ}C$	11.53	12	12.48	V
		$14.5V \leq V_{in} \leq 27V$, $5mA \leq I_{out} \leq 1.5A$, $PD \leq 15W$	11.42	12	12.60	
Line Regulation	REG _{line}	$T_j=25^{\circ}C$				
		$14V \leq V_{in} \leq 30V$	--	10	240	mV
		$15V \leq V_{in} \leq 19V$	--	3	120	mV
Load Regulation	REG _{load}	$T_j=25^{\circ}C$				
		$10mA \leq I_{out} \leq 1.5A$	--	12	240	mV
		$250mA \leq I_{out} \leq 750mA$	--	4	120	mV
Quiescent Current	I_q	$T_j=25^{\circ}C$, $I_{out}=0$	--	4.3	8	mA
Quiescent Current Change	ΔI_q	$14.5V \leq V_{in} \leq 30V$	--	--	1	mA
		$5mA \leq I_{out} \leq 1.5A$	--	--	0.5	mA
Output Noise Voltage	V_n	$10Hz \leq f \leq 100KHz$, $T_j=25^{\circ}C$	--	75	--	μV
Ripple Rejection Ratio	RR	$f=120Hz$, $15V \leq V_{in} \leq 25V$	55	71	--	dB
Voltage Drop	V_{drop}	$I_{out}=1.0A$, $T_j=25^{\circ}C$	--	2	--	V
Output Resistance	R_{out}	$f=1KHz$	--	18	--	$m\Omega$
Output Short Circuit Current	I_{os}	$T_j=25^{\circ}C$	--	350	--	mA
Peak Output Current	$I_{o peak}$	$T_j=25^{\circ}C$	--	2.2	--	A
Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out}=5mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-1	--	$mV/^{\circ}C$

• PJ7815 ELECTRICAL CHARACTERISTICS

$(V_{in}=23V$, $I_{out}=500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{in}=0.33 \mu F$, $C_{out}=0.1 \mu F$; unless otherwise specified.)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{out}	$T_j=25^{\circ}C$	14.42	15	15.60	V
		$17.5V \leq V_{in} \leq 30V$, $5mA \leq I_{out} \leq 1.5A$, $PD \leq 15W$	14.28	15	15.75	
Line Regulation	REG _{line}	$T_j=25^{\circ}C$				
		$17.5V \leq V_{in} \leq 30V$	--	12	300	mV
		$18V \leq V_{in} \leq 22V$	--	3	150	mV
Load Regulation	REG _{load}	$T_j=25^{\circ}C$				
		$10mA \leq I_{out} \leq 1.5A$	--	12	300	mV
		$250mA \leq I_{out} \leq 750mA$	--	4	150	mV
Quiescent Current	I_q	$T_j=25^{\circ}C$, $I_{out}=0$	--	4.3	8	mA
Quiescent Current Change	ΔI_q	$17.5V \leq V_{in} \leq 30V$	--	--	1	mA
		$5mA \leq I_{out} \leq 1.5A$	--	--	0.5	mA
Output Noise Voltage	V_n	$10Hz \leq f \leq 100KHz$, $T_j=25^{\circ}C$	--	90	--	μV
Ripple Rejection Ratio	RR	$f=120Hz$, $18V \leq V_{in} \leq 28V$	54	70	--	dB
Voltage Drop	V_{drop}	$I_{out}=1.0A$, $T_j=25^{\circ}C$	--	2	--	V
Output Resistance	R_{out}	$f=1KHz$	--	19	--	$m\Omega$
Output Short Circuit Current	I_{os}	$T_j=25^{\circ}C$	--	230	--	mA
Peak Output Current	$I_{o peak}$	$T_j=25^{\circ}C$	--	2.2	--	A
Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out}=5mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-1	--	$mV/^{\circ}C$

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3-Terminal Fixed Voltage Positive Regulators

• PJ7818 ELECTRICAL CHARACTERISTICS

($V_{in}=27V$, $I_{out}=500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{in}=0.33 \mu F$, $C_{out}=0.1 \mu F$; unless otherwise specified.)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{out}	$T_j=25^{\circ}C$	17.30	18	18.72	V
		$21V \leq V_{in} \leq 33V$, $5mA \leq I_{out} \leq 1.5A$, $PD \leq 15W$	17.14	18	18.90	
Line Regulation	REG _{line}	$T_j=25^{\circ}C$				
		$21V \leq V_{in} \leq 33V$	--	15	360	mV
		$22V \leq V_{in} \leq 26V$	--	5	180	mV
Load Regulation	REG _{load}	$T_j=25^{\circ}C$				
		$10mA \leq I_{out} \leq 1.5A$	--	12	360	mV
		$250mA \leq I_{out} \leq 750mA$	--	4	180	mV
Quiescent Current	I_q	$T_j=25^{\circ}C$, $I_{out}=0$	--	4.5	8	mA
Quiescent Current Change	ΔI_q	$21V \leq V_{in} \leq 33V$	--	--	1	mA
		$5mA \leq I_{out} \leq 1.5A$	--	--	0.5	mA
Output Noise Voltage	V_n	$10Hz \leq f \leq 100KHz$, $T_j=25^{\circ}C$	--	110	--	μV
Ripple Rejection Ratio	RR	$f=120Hz$, $21V \leq V_{in} \leq 31V$	54	70	--	dB
Voltage Drop	V_{drop}	$I_{out}=1.0A$, $T_j=25^{\circ}C$	--	2	--	V
Output Resistance	R_{out}	$f=1KHz$	--	22	--	$m\Omega$
Output Short Circuit Current	I_{os}	$T_j=25^{\circ}C$	--	200	--	mA
Peak Output Current	$I_{o peak}$	$T_j=25^{\circ}C$	--	2.2	--	A
Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out}=5mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-1	--	$mV/^{\circ}C$

PJ7824 BELECTRICAL CHARACTERISTICS

($V_{in}=33V$, $I_{out}=500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{in}=0.33 \mu F$, $C_{out}=0.1 \mu F$; unless otherwise specified.)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{out}	$T_j=25^{\circ}C$	23.07	24	24.96	V
		$26V \leq V_{in} \leq 38V$, $5mA \leq I_{out} \leq 1.5A$, $PD \leq 15W$	22.85	24	25.20	
Line Regulation	REG _{line}	$T_j=25^{\circ}C$				
		$26V \leq V_{in} \leq 38V$	--	18	480	mV
		$27V \leq V_{in} \leq 32V$	--	6	240	mV
Load Regulation	REG _{load}	$T_j=25^{\circ}C$				
		$10mA \leq I_{out} \leq 1.5A$	--	12	480	mV
		$250mA \leq I_{out} \leq 750mA$	--	4	240	mV
Quiescent Current	I_q	$I_{out}=0$, $T_j=25^{\circ}C$	--	4.6	8	mA
Quiescent Current Change	ΔI_q	$26V \leq V_{in} \leq 38V$	--	--	1	mA
		$5mA \leq I_{out} \leq 1.5A$	--	--	0.5	mA
Output Noise Voltage	V_n	$10Hz \leq f \leq 100KHz$, $T_j=25^{\circ}C$	--	170	--	μV
Ripple Rejection Ratio	RR	$f=120Hz$, $26V \leq V_{in} \leq 36V$	54	70	--	dB
Voltage Drop	V_{drop}	$I_{out}=1.0A$, $T_j=25^{\circ}C$	--	2	--	V
Output Resistance	R_{out}	$f=1KHz$	--	28	--	$m\Omega$
Output Short Circuit Current	I_{os}	$T_j=25^{\circ}C$	--	150	--	mA
Peak Output Current	$I_{o peak}$	$T_j=25^{\circ}C$	--	2.2	--	A
Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out}=5mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-1.5	--	$mV/^{\circ}C$

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**FIGURE 1 - WORST CASE POWER DISSIPATION
versus AMBIENT TEMPERATURE**

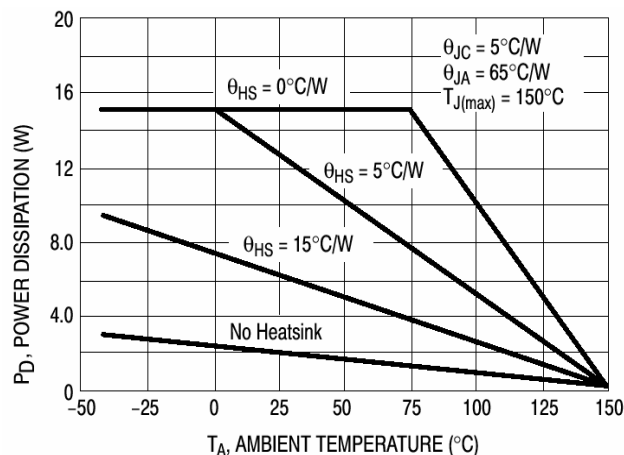


**FIGURE 2 - PEAK OUTPUT CURRENT AS A
FUNCTION OF INPUT-OUTPUT DIFFERENTIAL
VOLTAGE**

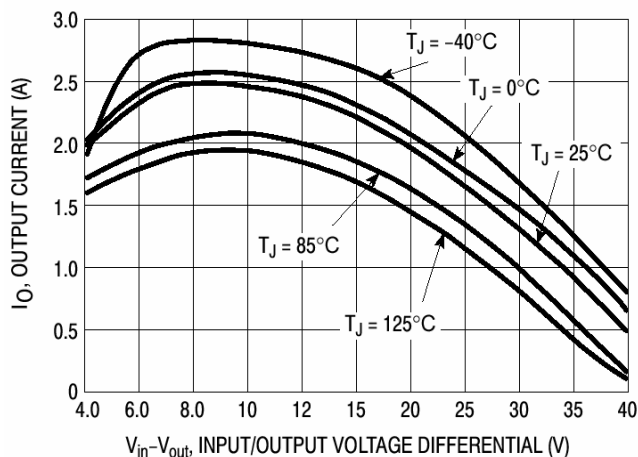


**FIGURE 3 - QUIESCENT CURRENT AS A
FUNCTION OF TEMPERATURE**

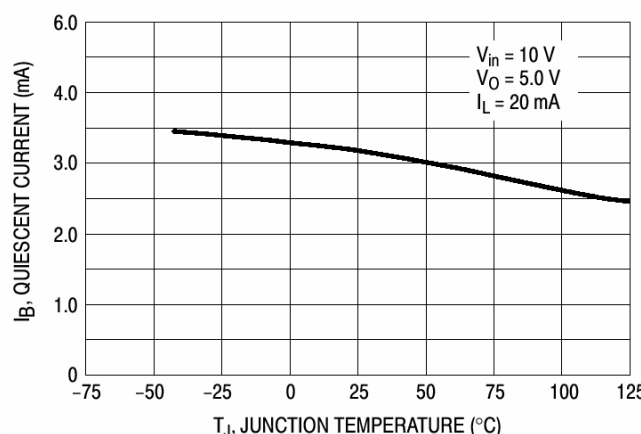


**FIGURE 4 - INPUT OUTPUT DIFFERENTIAL AS A
FUNCTION OF JUNCTION TEMPERATURE**

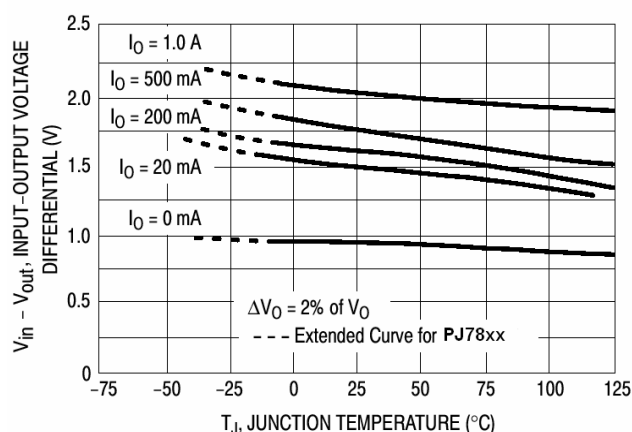


**FIGURE 5 - OUTPUT VOLTAGE AS A FUNCTION
OF JUNCTION TEMPERATURE**

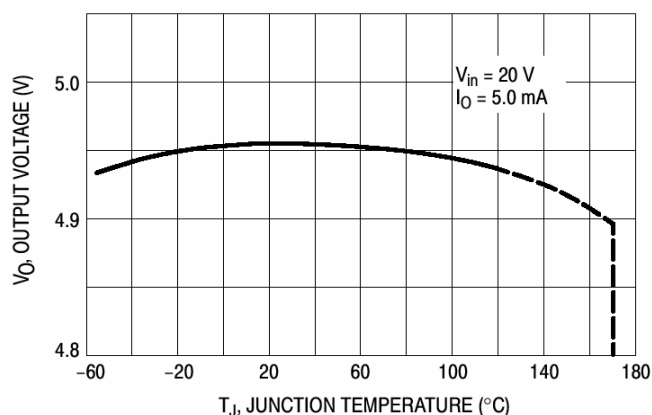
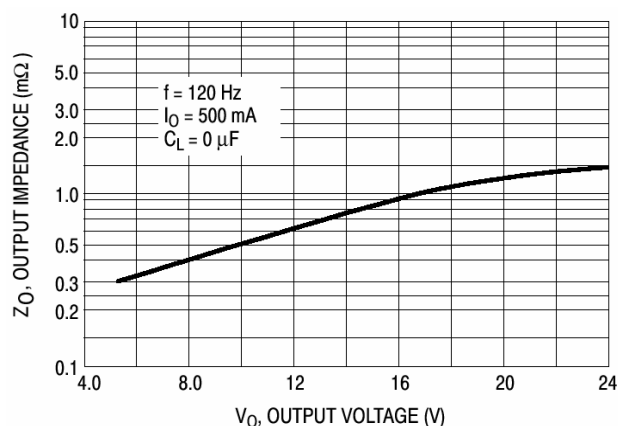


**FIGURE 6 - OUTPUT IMPEDANCE AS A
FUNCTION OF OUTPUT VOLTAGE**



3-Terminal Fixed Voltage Positive Regulators

FIGURE 7 - RIPPLE REJECTION AS A FUNCTION OF OUTPUT VOLTAGE

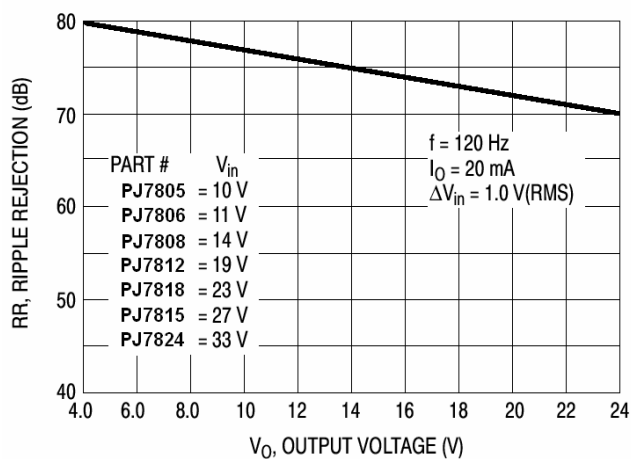
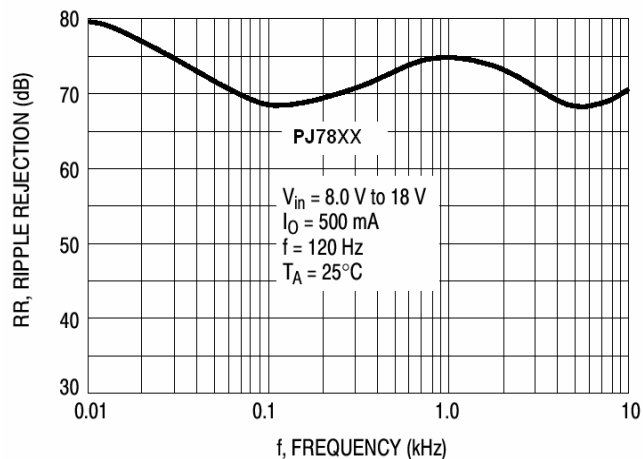


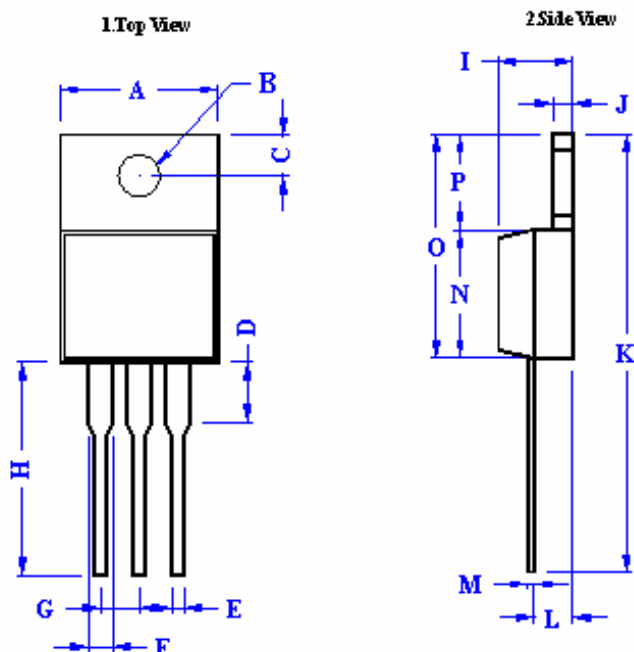
FIGURE 8 - RIPPLE REJECTION AS A FUNCTION OF FREQUENCY



3-Terminal Fixed Voltage Positive Regulators

TO-220 Mechanical drawing

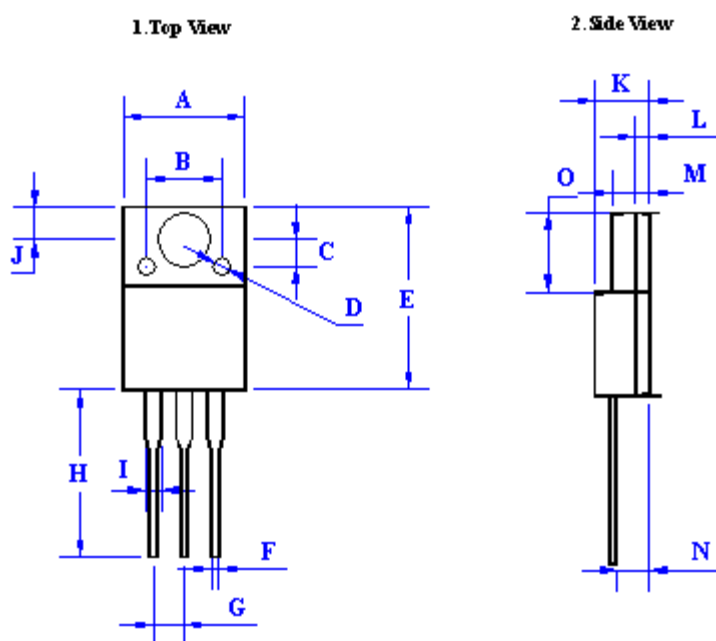
TO-220 Unit:mm



TO-220 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	10.00	10.50	0.394	0.413
B	3.24	4.44	0.128	0.175
C	2.44	2.94	0.096	0.116
D	3.565	4.315	0.140	0.170
E	0.68	0.92	0.027	0.036
F	1.115	1.485	0.044	0.058
G	2.345	2.715	0.092	0.107
H	13.49	14.31	0.531	0.563
I	4.475	5.225	0.176	0.206
J	1.15	1.39	0.045	0.055
K	27.78	29.62	1.094	1.166
L	2.175	2.925	0.086	0.115
M	0.297	0.477	0.012	0.019
N	8.28	8.80	0.326	0.346
O	14.29	15.31	0.563	0.603
P	6.01	6.51	0.237	0.256

TO-220F Mechanical drawing

TO-220F Unit:mm



TO-220F DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.9	10.1	0.390	0.398
B	6.2	6.2	0.244	0.244
C	2.2	2.2	0.087	0.087
D	Φ1.4	Φ1.4	Φ0.055	Φ0.055
E	15.0	15.2	0.591	0.598
F	0.48	0.72	0.019	0.028
G	2.355	2.725	0.093	0.107
H	13.49	14.31	0.531	0.563
I	1.115	1.485	0.044	0.058
J	2.6	2.8	0.102	0.110
K	4.4	4.6	0.173	0.181
L	1.115	1.15	0.045	0.045
M	2.95	3.15	0.116	0.124
N	2.6	2.8	0.102	0.110
O	6.55	6.65	0.258	0.262