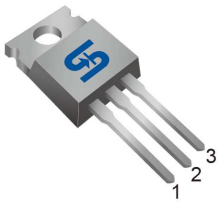
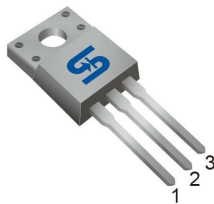


TO-220



ITO-220



**Pin Definition:**

1. Input
2. Ground (tab)
3. Output

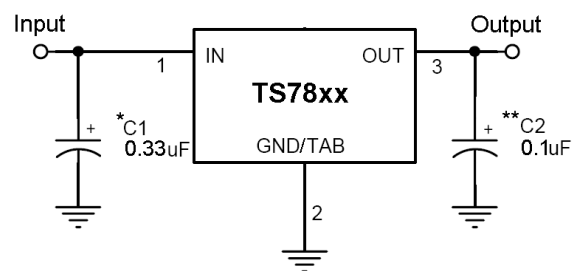
### General Description

The TS7800 series 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. With adequate heatsink 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.

### Features

- Output Voltage Range 5 to 24V
- Output current up to 1A
- No external components required
- Internal thermal overload protection
- Internal short-circuit current limiting
- Output transistor safe-area compensation
- Output voltage offered in 4% tolerance

### Standard Application Circuit



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.

### Ordering Information

Part No.	Package	Packing
TS78xxCZ C0	TO-220	50pcs / Tube
TS78xxCI C0	ITO-220	50pcs / Tube

Note: Where **xx** denote voltage option, available are:

**05=5V, 06=6V, 08=9V, 09=9V, 10=10V**

**12=12V, 15=15V, 18=18V, 24=24V**

### Absolute Maximum Rating (Ta = 25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit	
Input Voltage	$V_{IN}$	$V_{OUT}=5\sim 18V$	35	V
		$V_{OUT}=24V$	40	
Output Current	$I_{OUT}$	Internal Limited		
Power Dissipation	$P_D$	Internal Limited		
Operating Junction Temperature	$T_J$	0~+125	°C	
Storage Temperature Range	$T_{STG}$	-65~+150	°C	
Thermal Resistance - Junction to Case	$R\theta_{JC}$	TO-220	5	°C/W
		ITO-220	5	
Thermal Resistance - Junction to Ambient	$R\theta_{JA}$	TO-220	50	°C/W
		ITO-220	60	

**Note:** Absolute maximum ratings are those values beyond which damage to the device may occur.

Functional operation under these condition is not implied.

### TS7805 Electrical Characteristics

( $V_{in}=10V$ ,  $I_{out}=500mA$ ,  $0^{\circ}C \leq T_j \leq 125^{\circ}C$ ,  $C_{in}=0.33\mu F$ ,  $C_{out}=0.1\mu F$ ; unless otherwise specified.)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Output voltage	Vout	$T_j=25^{\circ}C$	4.80	5	5.20	V
		$7.5V \leq V_{in} \leq 20V$ , $10mA \leq I_{out} \leq 1A$ , $PD \leq 15W$	4.75	5	5.25	
Line Regulation	REGline	$T_j=25^{\circ}C$	--	3	100	mV
		C		$7.5V \leq V_{in} \leq 25V$	1	
Load Regulation	REGload	$T_j=25^{\circ}C$	--	15	100	
		C		$10mA \leq I_{out} \leq 1A$	5	
Quiescent Current	Iq	$I_{out}=0$ , $T_j=25^{\circ}C$	--	4.2	8	mA
Quiescent Current Change	$\Delta Iq$	$7.5V \leq V_{in} \leq 25V$	--	--	1.3	
		$10mA \leq I_{out} \leq 1A$	--	--	0.5	
Output Noise Voltage	Vn	$10Hz \leq f \leq 100KHz$ , $T_j=25^{\circ}C$	--	40	--	$\mu V$
Ripple Rejection Ratio	RR	$f=120Hz$ , $8V \leq V_{in} \leq 18V$	62	78	--	dB
Voltage Drop	Vdrop	$I_{out}=1.0A$ , $T_j=25^{\circ}C$	--	2	--	V
Output Resistance	Rout	$f=1KHz$	--	17	--	$m\Omega$
Output Short Circuit Current	Ios	$T_j=25^{\circ}C$	--	750	--	mA
Peak Output Current	I <sub>o peak</sub>	$T_j=25^{\circ}C$	--	2.2	--	A
Temperature Coefficient of Output Voltage	$\Delta V_{out}/\Delta T_j$	$I_{out}=10mA$ , $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-0.6	--	$mV/^{\circ}C$

### TS7806 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.)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Output Voltage	Vout	$T_j=25^{\circ}C$	5.75	6	6.25	V
		$8.5V \leq V_{in} \leq 21V$ , $10mA \leq I_{out} \leq 1A$ , $PD \leq 15W$	5.7	6	6.3	
Line Regulation	REGline	$T_j=25^{\circ}C$	--	5	120	mV
		C		$8.5V \leq V_{in} \leq 25V$	1.5	
Load Regulation	REGload	$T_j=25^{\circ}C$	--	14	120	
		C		$10mA \leq I_{out} \leq 1A$	4	
Quiescent Current	Iq	$I_{out}=0$ , $T_j=25^{\circ}C$	--	4.3	8	mA
Quiescent Current Change	$\Delta Iq$	$8.5V \leq V_{in} \leq 25V$	--	--	1.3	
		$10mA \leq I_{out} \leq 1A$	--	--	0.5	
Output Noise Voltage	Vn	$10Hz \leq f \leq 100KHz$ , $T_j=25^{\circ}C$	--	45	--	$\mu V$
Ripple Rejection Ratio	RR	$f=120Hz$ , $9V \leq V_{in} \leq 19V$	59	75	--	dB
Voltage Drop	Vdrop	$I_{out}=1.0A$ , $T_j=25^{\circ}C$	--	2	--	V
Output Resistance	Rout	$f=1KHz$	--	19	--	$m\Omega$
Output Short Circuit Current	Ios	$T_j=25^{\circ}C$	--	550	--	mA
Peak Output Current	I <sub>o peak</sub>	$T_j=25^{\circ}C$	--	2.2	--	A
Temperature Coefficient of Output Voltage	$\Delta V_{out}/\Delta T_j$	$I_{out}=10mA$ , $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-0.7	--	$mV/^{\circ}C$

- 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.
- This specification applies only for DC power dissipation permitted by absolute maximum ratings.

### TS7808 Electrical Characteristics

Vin=14V, Iout=500mA, 0°C≤Tj≤125°C, Cin=0.33uF, Cout=0.1uF; unless otherwise specified.)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Output voltage	Vout	Tj=25°C	7.69	8	8.32	V
		10.5V≤Vin≤23V, 10mA≤Iout≤1A, PD≤15W	7.61	8	8.40	
Line Regulation	REGline	Tj=25°C	--	6	160	mV
		C		11V≤Vin≤17V	2	
Load Regulation	REGload	Tj=25°C	--	12	160	mV
		C		10mA≤Iout≤1A 250mA≤Iout≤750mA	4	
Quiescent Current	Iq	Iout=0, Tj=25°C	--	4.3	8	mA
Quiescent Current Change	ΔIq	10.5V≤Vin≤25V	--	--	1	
		10mA≤Iout≤1A	--	--	0.5	
Output Noise Voltage	Vn	10Hz≤f≤100KHz, Tj=25°C	--	52	--	μV
Ripple Rejection Ratio	RR	f=120Hz, 11V≤Vin≤21V	56	72	--	dB
Voltage Drop	Vdrop	Iout=1.0A, Tj=25°C	--	2	--	V
Output Resistance	Rout	f=1KHz	--	16	--	mΩ
Output Short Circuit Current	Ios	Tj=25°C	--	450	--	mA
Peak Output Current	I <sub>o peak</sub>	Tj=25°C	--	2.2	--	A
Temperature Coefficient of Output Voltage	ΔVout/ ΔTj	Iout=10mA, 0°C≤Tj≤125°C	--	-0.8	--	mV/ °C

### TS7809 Electrical Characteristics

(Vin=15V, Iout=500mA, 0°C≤Tj≤125°C, Cin=0.33uF, Cout=0.1uF; unless otherwise specified.)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Output Voltage	Vout	Tj=25°C	8.65	9	9.36	V
		11.5V≤Vin≤23V, 10mA≤Iout≤1A, PD≤15W	8.57	9	9.45	
Line Regulation	REGline	Tj=25°C	--	6	180	mV
		C		11.5V≤Vin≤26V 12V≤Vin≤17V	2	
Load Regulation	REGload	Tj=25°C	--	12	180	mV
		C		10mA≤Iout≤1A 250mA≤Iout≤750mA	4	
Quiescent Current	Iq	Iout=0, Tj=25°C	--	4.3	8	mA
Quiescent Current Change	ΔIq	11.5V≤Vin≤26V	--	--	1	
		10mA≤Iout≤1A	--	--	0.5	
Output Noise Voltage	Vn	10Hz≤f≤100KHz, Tj=25°C	--	52	--	uV
Ripple Rejection Ratio	RR	f=120Hz, 12V≤Vin≤22V	55	72	--	dB
Voltage Drop	Vdrop	Iout=1.0A, Tj=25°C	--	2	--	V
Output Resistance	Rout	f=1KHz	--	16	--	mΩ
Output Short Circuit Current	Ios	Tj=25°C	--	450	--	mA
Peak Output Current	I <sub>o peak</sub>	Tj=25°C	--	2.2	--	A
Temperature Coefficient of Output Voltage	ΔVout/ ΔTj	Iout=10mA, 0°C≤Tj≤125°C	--	-1	--	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.
- This specification applies only for DC power dissipation permitted by absolute maximum ratings.

### TS7810 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.)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit	
Output voltage	Vout	$T_j=25^{\circ}C$	9.6	10	10.4	V	
		$12.5V \leq V_{in} \leq 25V$ , $10mA \leq I_{out} \leq 1A$ , $PD \leq 15W$	9.5	10	10.5		
Line Regulation	REGline	$T_j=25^{\circ}C$	$12.5V \leq V_{in} \leq 28V$	--	7	200	mV
			$13V \leq V_{in} \leq 17V$	--	2	100	
Load Regulation	REGload	$T_j=25^{\circ}C$	$10mA \leq I_{out} \leq 1A$	--	12	200	
			$250mA \leq I_{out} \leq 750mA$	--	4	100	
Quiescent Current	Iq	$I_{out}=0$ , $T_j=25^{\circ}C$	--	4.3	8	mA	
Quiescent Current Change	$\Delta Iq$	$12.5V \leq V_{in} \leq 28V$	--	--	1		
		$10mA \leq I_{out} \leq 1A$	--	--	0.5		
Output Noise Voltage	Vn	$10Hz \leq f \leq 100KHz$ , $T_j=25^{\circ}C$	--	70	--	$\mu V$	
Ripple Rejection Ratio	RR	$f=120Hz$ , $13V \leq V_{in} \leq 23V$	55	71	--	dB	
Voltage Drop	Vdrop	$I_{out}=1.0A$ , $T_j=25^{\circ}C$	--	2	--	V	
Output Resistance	Rout	$f=1KHz$	--	18	--	$m\Omega$	
Output Short Circuit Current	Ios	$T_j=25^{\circ}C$	--	400	--	mA	
Peak Output Current	I <sub>o peak</sub>	$T_j=25^{\circ}C$	--	2.2	--	A	
Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out}=10mA$ , $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-1	--	$mV / ^{\circ}C$	

### TS7812 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.)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit	
Output Voltage	Vout	$T_j=25^{\circ}C$	11.53	12	12.48	V	
		$14.5V \leq V_{in} \leq 27V$ , $10mA \leq I_{out} \leq 1A$ , $PD \leq 15W$	11.42	12	12.60		
Line Regulation	REGline	$T_j=25^{\circ}C$	$14.5V \leq V_{in} \leq 30V$	--	10	240	mV
			$15V \leq V_{in} \leq 19V$	--	3	120	
Load Regulation	REGload	$T_j=25^{\circ}C$	$10mA \leq I_{out} \leq 1A$	--	12	240	
			$250mA \leq I_{out} \leq 750mA$	--	4	120	
Quiescent Current	Iq	$T_j=25^{\circ}C$ , $I_{out}=0$	--	4.3	8	mA	
Quiescent Current Change	$\Delta Iq$	$14.5V \leq V_{in} \leq 30V$	--	--	1		
		$10mA \leq I_{out} \leq 1A$	--	--	0.5		
Output Noise Voltage	Vn	$10Hz \leq f \leq 100KHz$ , $T_j=25^{\circ}C$	--	75	--	$\mu V$	
Ripple Rejection Ratio	RR	$f=120Hz$ , $15V \leq V_{in} \leq 25V$	55	71	--	dB	
Voltage Drop	Vdrop	$I_{out}=1.0A$ , $T_j=25^{\circ}C$	--	2	--	V	
Output Resistance	Rout	$f=1KHz$	--	18	--	$m\Omega$	
Output Short Circuit Current	Ios	$T_j=25^{\circ}C$	--	350	--	mA	
Peak Output Current	I <sub>o peak</sub>	$T_j=25^{\circ}C$	--	2.2	--	A	
Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out}=10mA$ , $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-1	--	$mV / ^{\circ}C$	

- 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.
- This specification applies only for DC power dissipation permitted by absolute maximum ratings.

### TS7815 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.)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit	
Output voltage	$V_{out}$	$T_j=25^{\circ}C$	14.42	15	15.60	V	
		$17.5V \leq V_{in} \leq 30V$ , $10mA \leq I_{out} \leq 1A$ , $PD \leq 15W$	14.28	15	15.75		
Line Regulation	REGline	$T_j=25^{\circ}C$	$17.5V \leq V_{in} \leq 30V$	--	12	300	mV
			$18V \leq V_{in} \leq 22V$	--	3	150	
Load Regulation	REGload	$T_j=25^{\circ}C$	$10mA \leq I_{out} \leq 1A$	--	12	300	
			$250mA \leq I_{out} \leq 750mA$	--	4	150	
Quiescent Current	$I_q$	$T_j=25^{\circ}C$ , $I_{out}=0$	--	4.3	8	mA	
Quiescent Current Change	$\Delta I_q$	$17.5V \leq V_{in} \leq 30V$	--	--	1		
		$10mA \leq I_{out} \leq 1A$	--	--	0.5		
Output Noise Voltage	$V_n$	$10Hz \leq f \leq 100KHz$ , $T_j=25^{\circ}C$	--	90	--	$\mu V$	
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	$\Delta V_{out} / \Delta T_j$	$I_{out}=10mA$ , $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-1	--	$mV / ^{\circ}C$	

### TS7818 Electrical Characteristics

$V_{in}=24V$ ,  $I_{out}=500mA$ ,  $0^{\circ}C \leq T_j \leq 125^{\circ}C$ ,  $C_{in}=0.33\mu F$ ,  $C_{out}=0.1\mu F$ ; unless otherwise specified.)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit	
Output Voltage	$V_{out}$	$T_j=25^{\circ}C$	17.30	18	18.72	V	
		$21V \leq V_{in} \leq 33V$ , $10mA \leq I_{out} \leq 1A$ , $PD \leq 15W$	17.14	18	18.90		
Line Regulation	REGline	$T_j=25^{\circ}C$	$21V \leq V_{in} \leq 33V$	--	15	360	mV
			$22V \leq V_{in} \leq 26V$	--	5	180	
Load Regulation	REGload	$T_j=25^{\circ}C$	$10mA \leq I_{out} \leq 1A$	--	12	360	
			$250mA \leq I_{out} \leq 750mA$	--	4	180	
Quiescent Current	$I_q$	$T_j=25^{\circ}C$ , $I_{out}=0$	--	4.5	8	mA	
Quiescent Current Change	$\Delta I_q$	$21V \leq V_{in} \leq 33V$	--	--	1		
		$10mA \leq I_{out} \leq 1A$	--	--	0.5		
Output Noise Voltage	$V_n$	$10Hz \leq f \leq 100KHz$ , $T_j=25^{\circ}C$	--	110	--	$\mu V$	
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	$\Delta V_{out} / \Delta T_j$	$I_{out}=10mA$ , $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-1	--	$mV / ^{\circ}C$	

- 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.
- This specification applies only for DC power dissipation permitted by absolute maximum ratings.

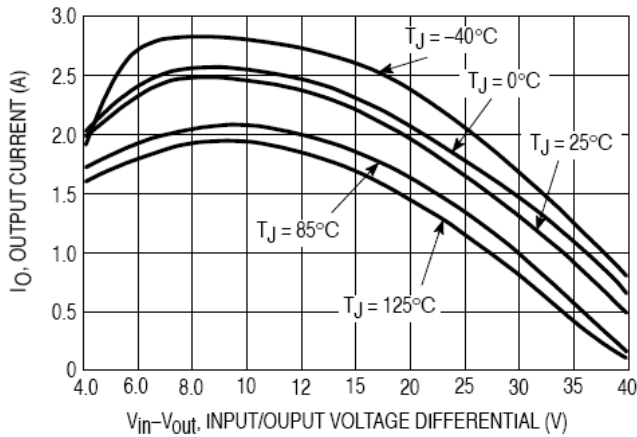
### TS7824 Electrical Characteristics

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

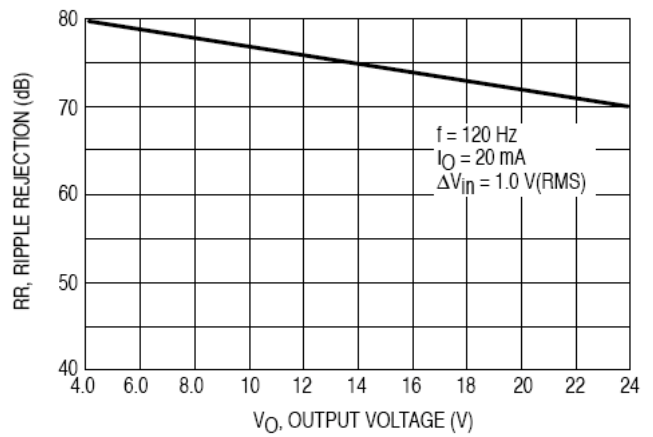
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit	
Output voltage	$V_{out}$	$T_j=25^{\circ}C$	23.07	24	24.96	V	
		$27V \leq V_{in} \leq 38V$ , $10mA \leq I_{out} \leq 1A$ , $PD \leq 15W$	22.85	24	25.20		
Line Regulation	REG <sub>line</sub>	$T_j=25^{\circ}C$	$27V \leq V_{in} \leq 38V$	--	18	480	mV
			$28V \leq V_{in} \leq 32V$	--	6	240	
Load Regulation	REG <sub>load</sub>	$T_j=25^{\circ}C$	$10mA \leq I_{out} \leq 1A$	--	12	480	
			$250mA \leq I_{out} \leq 750mA$	--	4	240	
Quiescent Current	$I_q$	$I_{out}=0$ , $T_j=25^{\circ}C$	--	4.6	8	mA	
Quiescent Current Change	$\Delta I_q$	$27V \leq V_{in} \leq 38V$	--	--	1		
		$10mA \leq I_{out} \leq 1A$	--	--	0.5		
Output Noise Voltage	$V_n$	$10Hz \leq f \leq 100KHz$ , $T_j=25^{\circ}C$	--	170	--	$\mu V$	
Ripple Rejection Ratio	RR	$f=120Hz$ , $27V \leq V_{in} \leq 37V$	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	$\Delta V_{out} / \Delta T_j$	$I_{out}=10mA$ , $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-1.5	--	$mV / ^{\circ}C$	

- 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.
- This specification applies only for DC power dissipation permitted by absolute maximum ratings.

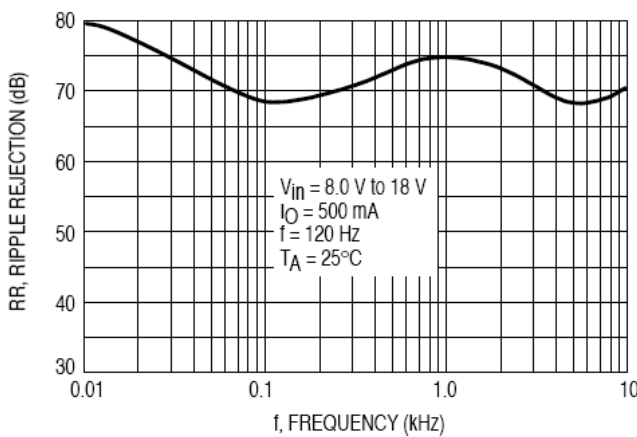
### Electrical Characteristics Curve



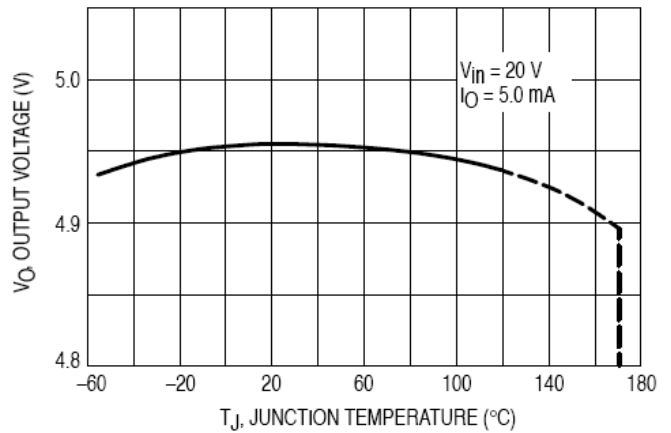
**Figure 1. Peak Output Current as a Function of Input-Output Differential Voltage**



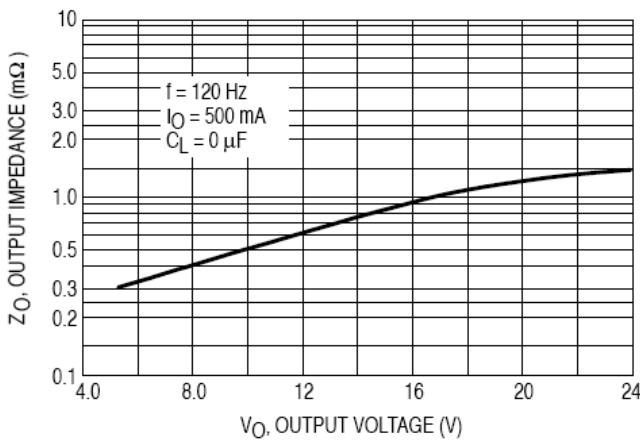
**Figure 2. Ripple Rejection as a Function of Output Voltage**



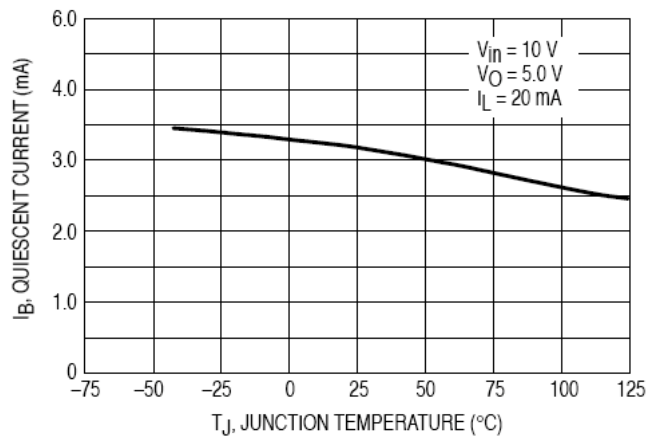
**Figure 3. Ripple Rejection as a Function of Frequency**



**Figure 4. Output Voltage as a Function of Junction Temperature**

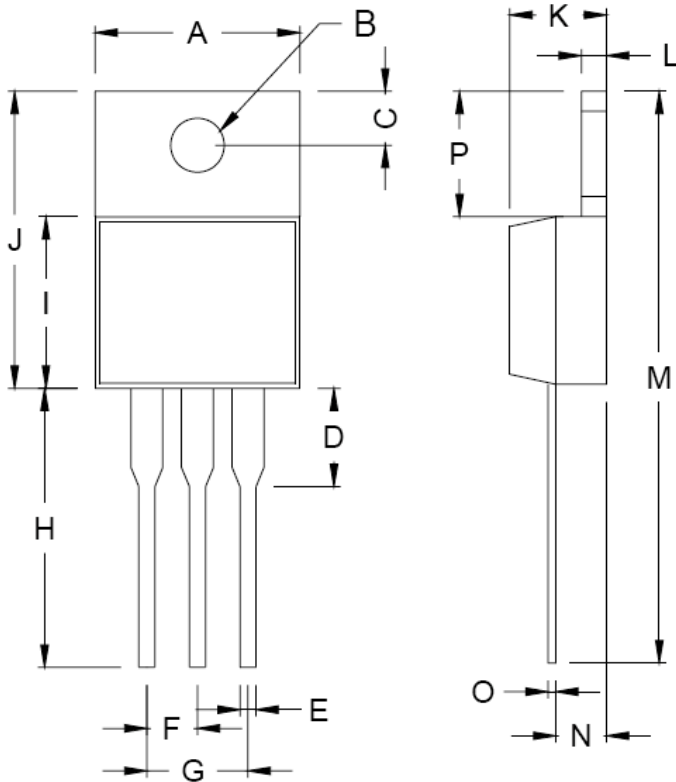


**Figure 5. Output Impedance as a Function of Output Voltage**



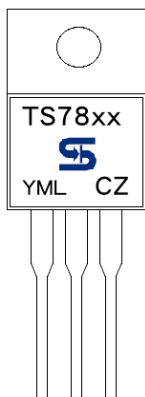
**Figure 6. Quiescent Current as a Function of Temperature**

### TO-220 Mechanical Drawing



DIM	TO-220 DIMENSION			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.31	10.50	0.367	0.413
B	3.74	3.91	0.147	0.154
C	2.36	3.24	0.093	0.128
D	2.22	3.22	0.087	0.127
E	0.78	0.98	0.031	0.039
F	--	2.65	--	0.104
G	--	5.30	--	0.209
H	12.32	13.88	0.485	0.546
I	8.74	9.26	0.344	0.365
J	15.07	16.47	0.593	0.648
K	4.35	4.65	0.171	0.183
L	1.16	1.40	0.046	0.055
M	28.37	30.35	1.117	1.195
N	1.78	2.67	0.070	0.105
O	0.255	0.610	0.010	0.024
P	5.75	7.65	0.226	0.301

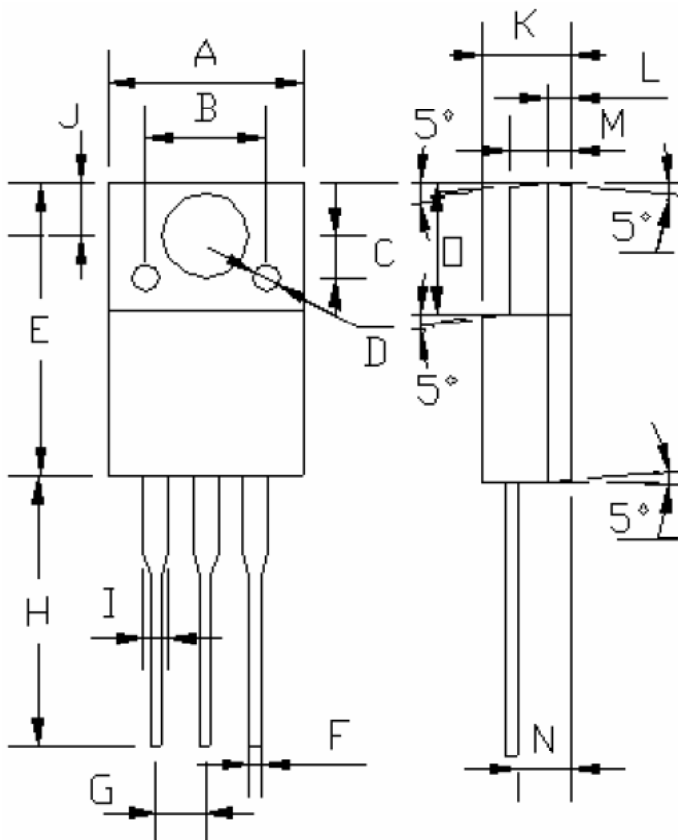
### Marking Diagram



- XX** = Output Voltage  
(05=5V, 06=6V, 08=8V, 09=9V, 10=10V, 12=12V, 15=15V, 18=18V, 24=24V)
- Y** = Year Code
- M** = Month Code  
(A=Jan, B=Feb, C=Mar, D=Apr, E=May, F=Jun, G=Jul, H=Aug, I=Sep, J=Oct, K=Nov, L=Dec)
- L** = Lot Code
- CZ** = Package Code for TO-220

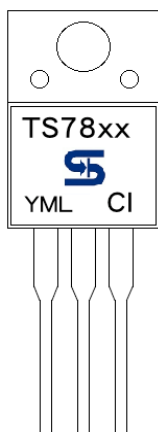


### ITO-220 Mechanical Drawing



ITO-220 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.96	10.36	0.392	0.407
B	6.20 (typ.)		0.244 (typ.)	
C	2.20 (typ.)		0.087 (typ.)	
D	∅ 1.40 (typ.)		∅ 0.055 (typ.)	
E	15.07	16.07	0.593	0.632
F	0.80 (typ.)		0.031 (typ.)	
G	2.44	2.64	0.096	0.104
H	13.08	13.48	0.514	0.530
I	1.47 (max.)		0.057 (max.)	
J	3.20	3.40	0.125	0.133
K	4.60	4.80	0.181	0.188
L	1.15 (typ.)		0.045 (typ.)	
M	2.44	2.64	0.096	0.104
N	2.60	2.80	0.102	0.110
O	6.55	6.65	0.258	0.262

### Marking Diagram



- XX** = Output Voltage  
(05=5V, 06=6V, 08=8V, 09=9V, 10=10V, 12=12V, 15=15V, 18=18V, 24=24V)
- Y** = Year Code
- M** = Month Code  
(A=Jan, B=Feb, C=Mar, D=Apl, E=May, F=Jun, G=Jul, H=Aug, I=Sep, J=Oct, K=Nov, L=Dec)
- L** = Lot Code
- CI** = Package Code for ITO-220

# TS7800 Series

## 3-Terminal Fixed Positive Voltage Regulator

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