



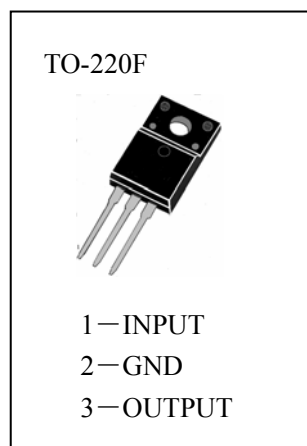
H 78XXF

Description

The H78XXF series of three terminal positive Regulators are available in the TO-220F package and with several fixed output voltages, making them useful in a wide range of applications. Each type employs internal current limiting, Thermal shut down and safe operating area protection, making it essentially indestructible. If adequate heat sinking is provided, they can deliver over 1A output current. Although designed primarily as fixed voltage regulator, these devices can be used with external components to obtain adjustable voltages and currents.

Features

- Output current up to 1A
- Output Voltages of 5V、6V、8V、9V、10V、11V、12V、15V、18V、24V
- Thermal Overload Protection
- Short Circuit Protection
- Output Transistor Safe Operating Area Protection



Absolute Maximum Ratings ($T_a=25^{\circ}\text{C}$)

V_I —Input Voltage (for $V_O=5\text{V}$ to 18V)..... 35V

V_I —Input Voltage (for $V_O=24\text{V}$).....40V

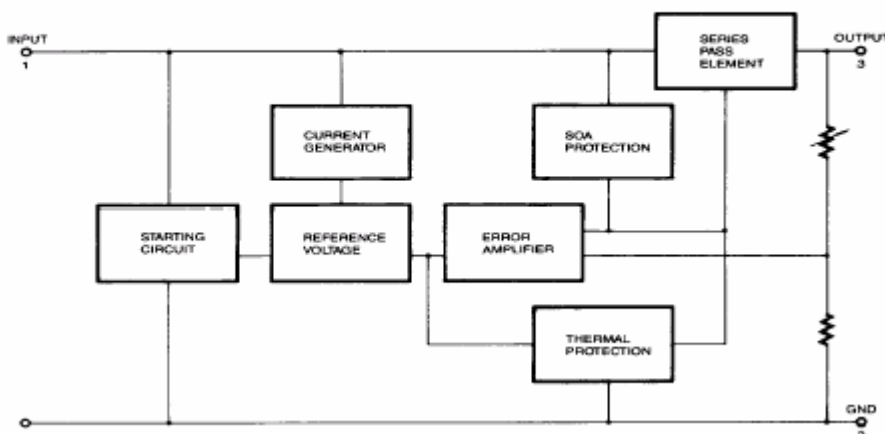
$R_{\theta JC}$ —Thermal Resistance Junction-Cases..... 5°C/W

$R_{\theta JA}$ —Thermal Resistance Junction-Air..... 65°C/W

T_{OPR} —Operating Temperature Range..... $0\sim 125^{\circ}\text{C}$

T_{STG} —Storage Temperature Range..... $-65\sim 150^{\circ}\text{C}$

Internal Block Diagram



(Refer to test circuit, unless otherwise specified, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$, $I_O=500\text{mA}$, $V_I=10\text{V}$, $C_I=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$,)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
V_O	Output Voltage	4.8	5.0	5.2	V	$T_J=25^{\circ}\text{C}$
		4.75	5.0	5.25		$5.0\text{mA} \leq I_O \leq 1.0\text{A}$, $P_D \leq 15\text{W}$, $7\text{V} \leq V_I \leq 20\text{V}$
ΔV_O	Line Regulation (Note1)		4.0	100	mV	$T_J=25^{\circ}\text{C}$, $7\text{V} \leq V_I \leq 25\text{V}$
			1.6	50		$T_J=25^{\circ}\text{C}$, $8\text{V} \leq V_I \leq 12\text{V}$
ΔV_O	Load Regulation (Note1)		9	100	mV	$T_J=25^{\circ}\text{C}$, $5.0\text{mA} \leq I_O \leq 1.5\text{A}$
			4	50		$T_J=25^{\circ}\text{C}$, $250\text{mA} \leq I_O \leq 750\text{mA}$
I_Q	Quiescent Current		5.0	8	mA	$T_J=25^{\circ}\text{C}$
ΔI_Q	Quiescent Current Change		0.03	0.5	mA	$5\text{mA} \leq I_O \leq 1.0\text{A}$
			0.3	1.3		$7\text{V} \leq V_I \leq 25\text{V}$
$\Delta V_O / \Delta T$	Output Voltage Drift		-0.8		mV/ $^{\circ}\text{C}$	$I_O=5\text{mA}$
V_N	Output Noise Voltage		42		μV	$T_A=25^{\circ}\text{C}$, $10\text{Hz} \leq f \leq 100\text{kHz}$
RR	Ripple Rejection	62	73		dB	$f=120\text{Hz}$, $8\text{V} \leq V_I \leq 18\text{V}$
V_D	Dropout Voltage		2		V	$I_O=1\text{A}$, $T_J=25^{\circ}\text{C}$
R_O	Output Resistance		15		m Ω	$f=1\text{kHz}$
I_{SC}	Short Circuit Current		230		mA	$V_I=35\text{V}$, $T_A=25^{\circ}\text{C}$
I_{PK}	Peak Current		2.2		A	$T_J=25^{\circ}\text{C}$

(Refer to test circuit, unless otherwise specified, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$, $I_O=500\text{mA}$, $V_I=11\text{V}$, $C_I=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
V_O	Output Voltage	5.75	6.0	6.25	V	$T_J=25^{\circ}\text{C}$
		5.7	6.0	6.3		$5.0\text{mA} \leq I_O \leq 1.0\text{A}$, $P_D \leq 15\text{W}$, $8.0\text{V} \leq V_I \leq 21\text{V}$
ΔV_O	Line Regulation (Notel)		5.0	120	mV	$T_J=25^{\circ}\text{C}$, $8\text{V} \leq V_I \leq 25\text{V}$
			1.5	60		$T_J=25^{\circ}\text{C}$, $9\text{V} \leq V_I \leq 13\text{V}$
ΔV_O	Load Regulation (Notel)		9	120	mV	$T_J=25^{\circ}\text{C}$, $5.0\text{mA} \leq I_O \leq 1.5\text{A}$
			3	60		$T_J=25^{\circ}\text{C}$, $250\text{mA} \leq I_O \leq 750\text{mA}$
I_Q	Quiescent Current		5.0	8	mA	$T_J=25^{\circ}\text{C}$
ΔI_Q	Quiescent Current Change			0.5	mA	$5\text{mA} \leq I_O \leq 1.0\text{A}$
				1.3		$8\text{V} \leq V_I \leq 25\text{V}$
$\Delta V_O / \Delta T$	Output Voltage Drift		-0.8		mV/ $^{\circ}\text{C}$	$I_O=5\text{mA}$
V_N	Output Noise Voltage		45		μV	$T_A=25^{\circ}\text{C}$, $10\text{Hz} \leq f \leq 100\text{kHz}$
RR	Ripple Rejection	59	75		dB	$f=120\text{Hz}$, $9\text{V} \leq V_I \leq 19\text{V}$
V_D	Dropout Voltage		2		V	$I_O=1\text{A}$, $T_J=25^{\circ}\text{C}$
R_O	Output Resistance		19		m Ω	$f=1\text{kHz}$
I_{SC}	Short Circuit Current		250		mA	$V_I=35\text{V}$, $T_A=25^{\circ}\text{C}$
I_{PK}	Peak Current		2.2		A	$T_J=25^{\circ}\text{C}$

(Refer to test circuit, unless otherwise specified, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$, $I_0=500\text{mA}$, $V_I=14\text{V}$, $C_I=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
V_O	Output Voltage	7.7	8.0	8.3	V	$T_J=25^{\circ}\text{C}$
		7.6	8.0	8.4		$5.0\text{mA} \leq I_O \leq 1.0\text{A}$, $P_D \leq 15\text{W}$, $10.5\text{V} \leq V_I \leq 23\text{V}$
ΔV_O	Line Regulation (Notel)		5.0	160	mV	$T_J=25^{\circ}\text{C}$, $10.5\text{V} \leq V_I \leq 25\text{V}$
			2.0	80		$T_J=25^{\circ}\text{C}$, $11.5\text{V} \leq V_I \leq 17\text{V}$
ΔV_O	Load Regulation (Notel)		10	160	mV	$T_J=25^{\circ}\text{C}$, $5.0\text{mA} \leq I_O \leq 1.5\text{A}$
			5.0	80		$T_J=25^{\circ}\text{C}$, $250\text{mA} \leq I_O \leq 750\text{mA}$
I_Q	Quiescent Current		5.0	8	mA	$T_J=25^{\circ}\text{C}$
ΔI_Q	Quiescent Current Change		0.05	0.5	mA	$5\text{mA} \leq I_O \leq 1.0\text{A}$
			0.5	1.0		$10.5\text{V} \leq V_I \leq 25\text{V}$
$\Delta V_O / \Delta T$	Output Voltage Drift		-0.8		mV/ $^{\circ}\text{C}$	$I_O=5\text{mA}$
V_N	Output Noise Voltage		52		μV	$T_A=25^{\circ}\text{C}$, $10\text{Hz} \leq f \leq 100\text{kHz}$
RR	Ripple Rejection	56	73		dB	$f=120\text{Hz}$, $11.5\text{V} \leq V_I \leq 21.5\text{V}$
V_D	Dropout Voltage		2		V	$I_O=1\text{A}$, $T_J=25^{\circ}\text{C}$
R_O	Output Resistance		17		m Ω	$f=1\text{kHz}$
I_{SC}	Short Circuit Current		230		mA	$V_I=35\text{V}$, $T_A=25^{\circ}\text{C}$
I_{PK}	Peak Current		2.2		A	$T_J=25^{\circ}\text{C}$

(Refer to test circuit, unless otherwise specified, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$, $I_0=500\text{mA}$, $V_I=15\text{V}$, $C_I=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
V_O	Output Voltage	8.65	9.0	9.35	V	$T_J=25^{\circ}\text{C}$
		8.6	9.0	9.4		$5.0\text{mA} \leq I_O \leq 1.0\text{A}$, $P_D \leq 15\text{W}$, $11.5\text{V} \leq V_I \leq 24\text{V}$
ΔV_O	Line Regulation (Notel)		6.0	180	mV	$T_J=25^{\circ}\text{C}$, $11.5\text{V} \leq V_I \leq 25\text{V}$
			2.0	90		$T_J=25^{\circ}\text{C}$, $12\text{V} \leq V_I \leq 18\text{V}$
ΔV_O	Load Regulation (Notel)		12	180	mV	$T_J=25^{\circ}\text{C}$, $5.0\text{mA} \leq I_O \leq 1.5\text{A}$
			4	90		$T_J=25^{\circ}\text{C}$, $250\text{mA} \leq I_O \leq 750\text{mA}$
I_Q	Quiescent Current		5.0	8.0	mA	$T_J=25^{\circ}\text{C}$
ΔI_Q	Quiescent Current Change			0.5	mA	$5\text{mA} \leq I_O \leq 1.0\text{A}$
				1.3		$11.5\text{V} \leq V_I \leq 26\text{V}$
$\Delta V_O / \Delta T$	Output Voltage Drift		-1		mV/ $^{\circ}\text{C}$	$I_O=5\text{mA}$
V_N	Output Noise Voltage		58		μV	$T_A=25^{\circ}\text{C}$, $10\text{Hz} \leq f \leq 100\text{kHz}$
RR	Ripple Rejection	56	71		dB	$f=120\text{Hz}$, $13\text{V} \leq V_I \leq 23\text{V}$
V_D	Dropout Voltage		2		V	$I_O=1\text{A}$, $T_J=25^{\circ}\text{C}$
R_O	Output Resistance		17		m Ω	$f=1\text{kHz}$
I_{SC}	Short Circuit Current		250		mA	$V_I=35\text{V}$, $T_A=25^{\circ}\text{C}$
I_{PK}	Peak Current		2.2		A	$T_J=25^{\circ}\text{C}$

(Refer to test circuit, unless otherwise specified, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$, $I_0=500\text{mA}$, $V_I=16\text{V}$, $C_I=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
V_O	Output Voltage	9.6	10	10.4	V	$T_J=25^{\circ}\text{C}$
		9.5	10	10.5		$5.0\text{mA} \leq I_O \leq 1.0\text{A}$, $P_D \leq 15\text{W}$, $12.5\text{V} \leq V_I \leq 25\text{V}$
ΔV_O	Line Regulation (Notel)		10	200	mV	$T_J=25^{\circ}\text{C}$, $12.5\text{V} \leq V_I \leq 25\text{V}$
			3	100		$T_J=25^{\circ}\text{C}$, $13\text{V} \leq V_I \leq 20\text{V}$
ΔV_O	Load Regulation (Notel)		12	200	mV	$T_J=25^{\circ}\text{C}$, $5.0\text{mA} \leq I_O \leq 1.5\text{A}$
			4	100		$T_J=25^{\circ}\text{C}$, $250\text{mA} \leq I_O \leq 750\text{mA}$
I_Q	Quiescent Current		5.1	8	mA	$T_J=25^{\circ}\text{C}$
ΔI_Q	Quiescent Current Change			0.5	mA	$5\text{mA} \leq I_O \leq 1.0\text{A}$
				1.0		$12.5\text{V} \leq V_I \leq 29\text{V}$
$\Delta V_O / \Delta T$	Output Voltage Drift		-1		mV/ $^{\circ}\text{C}$	$I_O=5\text{mA}$
V_N	Output Noise Voltage		58		μV	$T_A=25^{\circ}\text{C}$, $10\text{Hz} \leq f \leq 100\text{kHz}$
RR	Ripple Rejection	56	71		dB	$f=120\text{Hz}$, $14\text{V} \leq V_I \leq 24\text{V}$
V_D	Dropout Voltage		2		V	$I_O=1\text{A}$, $T_J=25^{\circ}\text{C}$
R_O	Output Resistance		17		m Ω	$f=1\text{kHz}$
I_{SC}	Short Circuit Current		250		mA	$V_I=35\text{V}$, $T_A=25^{\circ}\text{C}$
I_{PK}	Peak Current		2.2		A	$T_J=25^{\circ}\text{C}$

(Refer to test circuit, unless otherwise specified, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$, $I_O=500\text{mA}$, $V_I=18\text{V}$, $C_I=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
V_O	Output Voltage	10.6	11	11.4	V	$T_J=25^{\circ}\text{C}$
		10.5	11	11.5		$5.0\text{mA} \leq I_O \leq 1.0\text{A}$, $P_O \leq 15\text{W}$, $13.5\text{V} \leq V_I \leq 26\text{V}$
ΔV_O	Line Regulation (Notel)		10	220	mV	$T_J=25^{\circ}\text{C}$, $13.5\text{V} \leq V_I \leq 25\text{V}$
			3.0	110		$T_J=25^{\circ}\text{C}$, $14\text{V} \leq V_I \leq 21\text{V}$
ΔV_O	Load Regulation (Notel)		12	220	mV	$T_J=25^{\circ}\text{C}$, $5.0\text{mA} \leq I_O \leq 1.5\text{A}$
			4	110		$T_J=25^{\circ}\text{C}$, $250\text{mA} \leq I_O \leq 750\text{mA}$
I_Q	Quiescent Current		5.1	8	mA	$T_J=25^{\circ}\text{C}$
ΔI_Q	Quiescent Current Change			0.5	mA	$5\text{mA} \leq I_O \leq 1.0\text{A}$
				1.0		$13.5\text{V} \leq V_I \leq 29\text{V}$
$\Delta V_O / \Delta T$	Output Voltage Drift		-1		mV/ $^{\circ}\text{C}$	$I_O=5\text{mA}$
V_N	Output Noise Voltage		70		μV	$T_A=25^{\circ}\text{C}$, $10\text{Hz} \leq f \leq 100\text{kHz}$
RR	Ripple Rejection	55	71		dB	$f=120\text{Hz}$, $14\text{V} \leq V_I \leq 24\text{V}$
V_D	Dropout Voltage		2		V	$I_O=1\text{A}$, $T_J=25^{\circ}\text{C}$
R_O	Output Resistance		18		m Ω	$f=1\text{kHz}$
I_{SC}	Short Circuit Current		250		mA	$V_I=35\text{V}$, $T_A=25^{\circ}\text{C}$
I_{PK}	Peak Current		2.2		A	$T_J=25^{\circ}\text{C}$

(Refer to test circuit, unless otherwise specified, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$, $I_0=500\text{mA}$, $V_I=19\text{V}$, $C_I=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
V_O	Output Voltage	11.5	12	12.5	V	$T_J=25^{\circ}\text{C}$
		11.4	12	12.6		$5.0\text{mA} \leq I_O \leq 1.0\text{A}$, $P_D \leq 15\text{W}$, $14.5\text{V} \leq V_I \leq 27\text{V}$
ΔV_O	Line Regulation (Notel)		10	240	mV	$T_J=25^{\circ}\text{C}$, $14.5\text{V} \leq V_I \leq 30\text{V}$
			3.0	120		$T_J=25^{\circ}\text{C}$, $16\text{V} \leq V_I \leq 22\text{V}$
ΔV_O	Load Regulation (Notel)		11	240	mV	$T_J=25^{\circ}\text{C}$, $5.0\text{mA} \leq I_O \leq 1.5\text{A}$
			5.0	120		$T_J=25^{\circ}\text{C}$, $250\text{mA} \leq I_O \leq 750\text{mA}$
I_Q	Quiescent Current		5.1	8	mA	$T_J=25^{\circ}\text{C}$
ΔI_Q	Quiescent Current Change		0.1	0.5	mA	$5\text{mA} \leq I_O \leq 1.0\text{A}$
			0.5	1.0		$14.5\text{V} \leq V_I \leq 30\text{V}$
$\Delta V_O / \Delta T$	Output Voltage Drift		-1		mV/ $^{\circ}\text{C}$	$I_O=5\text{mA}$
V_N	Output Noise Voltage		76		μV	$T_A=25^{\circ}\text{C}$, $10\text{Hz} \leq f \leq 100\text{kHz}$
RR	Ripple Rejection	55	71		dB	$f=120\text{Hz}$, $15\text{V} \leq V_I \leq 25\text{V}$
V_D	Dropout Voltage		2		V	$I_O=1\text{A}$, $T_J=25^{\circ}\text{C}$
R_O	Output Resistance		18		m Ω	$f=1\text{kHz}$
I_{SC}	Short Circuit Current		230		mA	$V_I=35\text{V}$, $T_A=25^{\circ}\text{C}$
I_{PK}	Peak Current		2.2		A	$T_J=25^{\circ}\text{C}$

(Refer to test circuit, unless otherwise specified, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$, $I_0=500\text{mA}$, $V_I=23\text{V}$, $C_I=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
V_O	Output Voltage	14.4	15	15.6	V	$T_J=25^{\circ}\text{C}$
		14.25	15	15.75		$5.0\text{mA} \leq I_O \leq 1.0\text{A}$, $P_D \leq 15\text{W}$, $17.5\text{V} \leq V_I \leq 30\text{V}$
ΔV_O	Line Regulation (Notel)		11	300	mV	$T_J=25^{\circ}\text{C}$, $17.5\text{V} \leq V_I \leq 30\text{V}$
			3	150		$T_J=25^{\circ}\text{C}$, $20\text{V} \leq V_I \leq 26\text{V}$
ΔV_O	Load Regulation (Notel)		12	300	mV	$T_J=25^{\circ}\text{C}$, $5.0\text{mA} \leq I_O \leq 1.5\text{A}$
			4	150		$T_J=25^{\circ}\text{C}$, $250\text{mA} \leq I_O \leq 750\text{mA}$
I_Q	Quiescent Current		5.2	8	mA	$T_J=25^{\circ}\text{C}$
ΔI_Q	Quiescent Current Change			0.5	mA	$5\text{mA} \leq I_O \leq 1.0\text{A}$
				1.0		$17.5\text{V} \leq V_I \leq 30\text{V}$
$\Delta V_O / \Delta T$	Output Voltage Drift		-1		mV/ $^{\circ}\text{C}$	$I_O=5\text{mA}$
V_N	Output Noise Voltage		90		μV	$T_A=25^{\circ}\text{C}$, $10\text{Hz} \leq f \leq 100\text{kHz}$
RR	Ripple Rejection	54	70		dB	$f=120\text{Hz}$, $18.5\text{V} \leq V_I \leq 28.5\text{V}$
V_D	Dropout Voltage		2		V	$I_O=1\text{A}$, $T_J=25^{\circ}\text{C}$
R_O	Output Resistance		19		m Ω	$f=1\text{kHz}$
I_{SC}	Short Circuit Current		250		mA	$V_I=35\text{V}$, $T_A=25^{\circ}\text{C}$
I_{PK}	Peak Current		2.2		A	$T_J=25^{\circ}\text{C}$

(Refer to test circuit, unless otherwise specified, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$, $I_0=500\text{mA}$, $V_I=27\text{V}$, $C_I=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
V_O	Output Voltage	17.3	18	18.7	V	$T_J=25^{\circ}\text{C}$
		17.1	18	18.9		$5.0\text{mA} \leq I_O \leq 1.0\text{A}$, $P_D \leq 15\text{W}$, $21\text{V} \leq V_I \leq 33\text{V}$
ΔV_O	Line Regulation (Note1)		15	360	mV	$T_J=25^{\circ}\text{C}$, $21\text{V} \leq V_I \leq 33\text{V}$
			5	180		$T_J=25^{\circ}\text{C}$, $24\text{V} \leq V_I \leq 30\text{V}$
ΔV_O	Load Regulation (Note1)		15	360	mV	$T_J=25^{\circ}\text{C}$, $5.0\text{mA} \leq I_O \leq 1.5\text{A}$
			5.0	180		$T_J=25^{\circ}\text{C}$, $250\text{mA} \leq I_O \leq 750\text{mA}$
I_Q	Quiescent Current		5.2	8	mA	$T_J=25^{\circ}\text{C}$
ΔI_Q	Quiescent Current Change			0.5	mA	$5\text{mA} \leq I_O \leq 1.0\text{A}$
				1.0		$21\text{V} \leq V_I \leq 33\text{V}$
$\Delta V_O / \Delta T$	Output Voltage Drift		-1		mV/ $^{\circ}\text{C}$	$I_O=5\text{mA}$
V_N	Output Noise Voltage		110		μV	$T_A=25^{\circ}\text{C}$, $10\text{Hz} \leq f \leq 100\text{kHz}$
RR	Ripple Rejection	53	69		dB	$f=120\text{Hz}$, $22\text{V} \leq V_I \leq 32\text{V}$
V_D	Dropout Voltage		2		V	$I_O=1\text{A}$, $T_J=25^{\circ}\text{C}$
R_O	Output Resistance		22		m Ω	$f=1\text{kHz}$
I_{SC}	Short Circuit Current		250		mA	$V_I=35\text{V}$, $T_A=25^{\circ}\text{C}$
I_{PK}	Peak Current		2.2		A	$T_J=25^{\circ}\text{C}$



(Refer to test circuit, unless otherwise specified, $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$, $I_0=500\text{mA}$, $V_I=33\text{V}$, $C_I=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$)

Symbol	Parameter	Min.	Typ.	Max.	Unit	Conditions
V_O	Output Voltage	23	24	25	V	$T_J=25^{\circ}\text{C}$
		22.8	24	25.2		$5.0\text{mA} \leq I_O \leq 1.0\text{A}$, $P_D \leq 15\text{W}$, $27\text{V} \leq V_I \leq 38\text{V}$
ΔV_O	Line Regulation (Notel)		17	480	mV	$T_J=25^{\circ}\text{C}$, $27\text{V} \leq V_I \leq 38\text{V}$
			6	240		$T_J=25^{\circ}\text{C}$, $30\text{V} \leq V_I \leq 36\text{V}$
ΔV_O	Load Regulation (Notel)		15	480	mV	$T_J=25^{\circ}\text{C}$, $5.0\text{mA} \leq I_O \leq 1.5\text{A}$
			5.0	240		$T_J=25^{\circ}\text{C}$, $250\text{mA} \leq I_O \leq 750\text{mA}$
I_Q	Quiescent Current		5.2	8	mA	$T_J=25^{\circ}\text{C}$
ΔI_Q	Quiescent Current Change		0.1	0.5	mA	$5\text{mA} \leq I_O \leq 1.0\text{A}$
			0.5	1.0		$27\text{V} \leq V_I \leq 38\text{V}$
$\Delta V_O / \Delta T$	Output Voltage Drift		-1.5		mV/ $^{\circ}\text{C}$	$I_O=5\text{mA}$
V_N	Output Noise Voltage		160		μV	$T_A=25^{\circ}\text{C}$, $10\text{Hz} \leq f \leq 100\text{kHz}$
RR	Ripple Rejection	50	67		dB	$f=120\text{Hz}$, $28\text{V} \leq V_I \leq 38\text{V}$
V_D	Dropout Voltage		2		V	$I_O=1\text{A}$, $T_J=25^{\circ}\text{C}$
R_O	Output Resistance		28		m Ω	$f=1\text{kHz}$
I_{SC}	Short Circuit Current		230		mA	$V_I=35\text{V}$, $T_A=25^{\circ}\text{C}$
I_{PK}	Peak Current		2.2		A	$T_J=25^{\circ}\text{C}$



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Typical Performance Characteristics

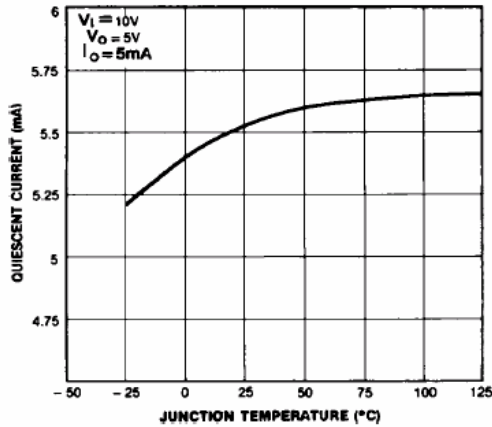


Figure 1. Quiescent Current

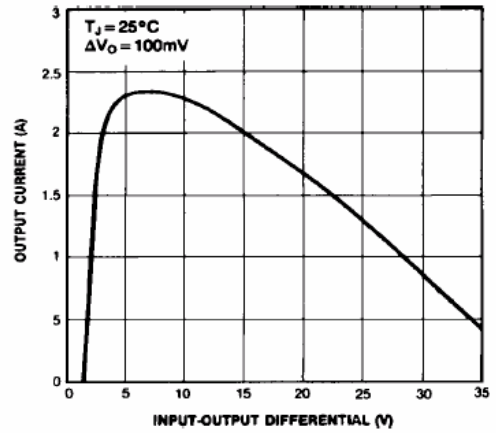


Figure 2. Peak Output Current

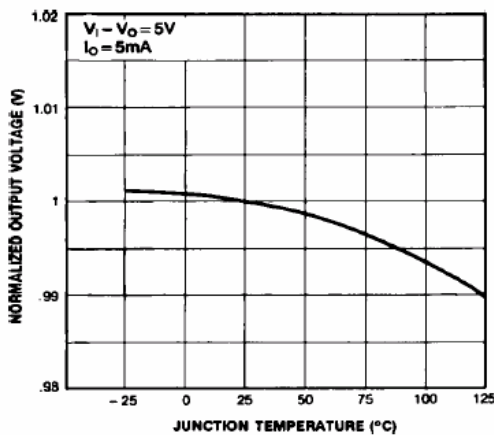


Figure 3. Output Voltage

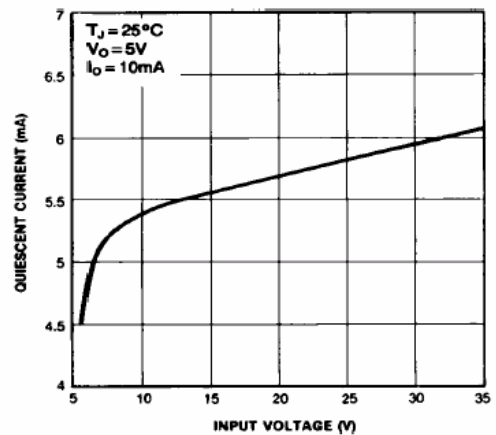


Figure 4. Quiescent Current

Typical Applications

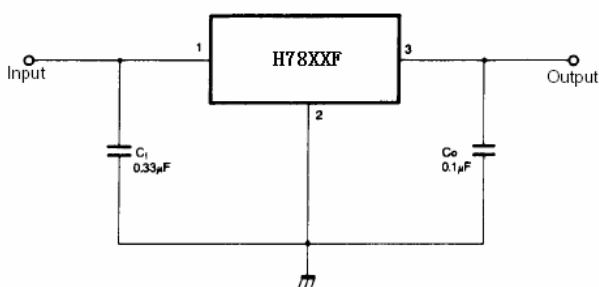


Figure 5. DC Parameters

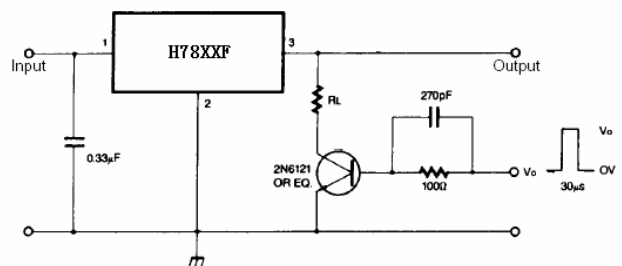


Figure 6. Load Regulation



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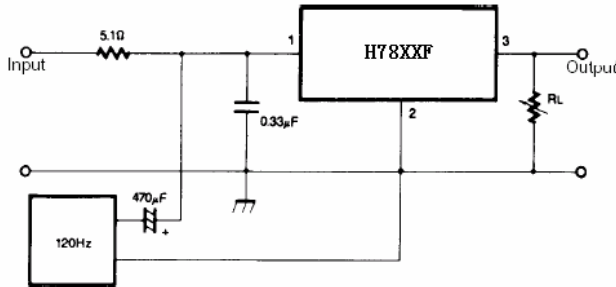


Figure 7. Ripple Rejection

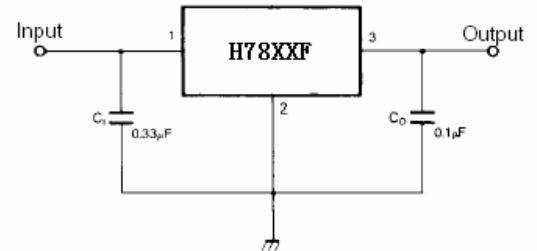


Figure 8. Fixed Output Regulator

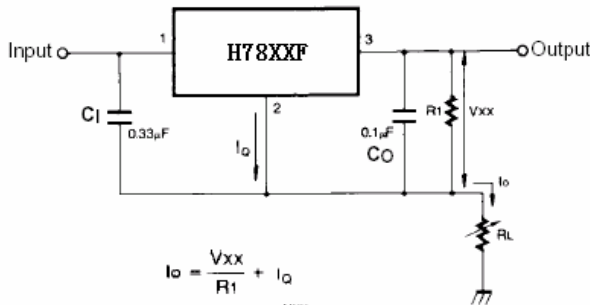


Figure 9. Constant Current Regulator

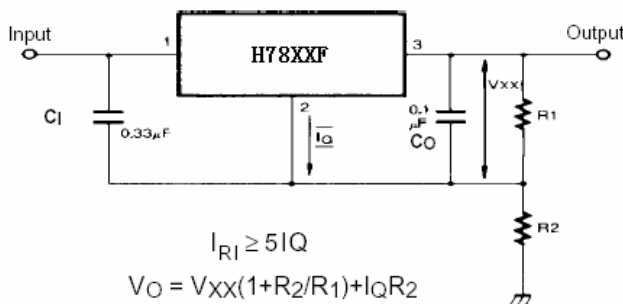


Figure 10. Circuit for Increasing Output Voltage

Notes:

- (1) To specify an output voltage, substitute voltage value for "XX." A common ground is required between the input and the Output voltage. The input voltage must remain typically 2.0V above the output voltage even during the low point on the input ripple voltage.
- (2) C1 is required if regulator is located an appreciable distance from power Supply filter.
- (3) C0 improves stability and transient response.

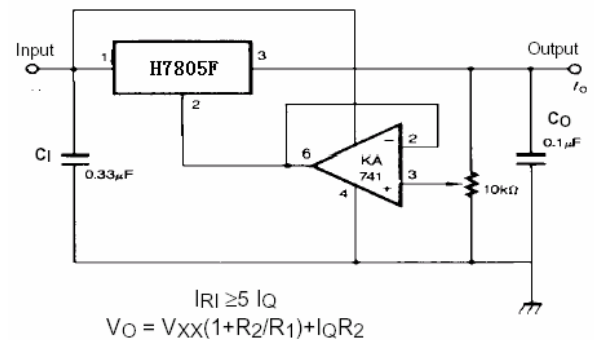


Figure 11. Adjustable Output Regulator (7 to 30V)

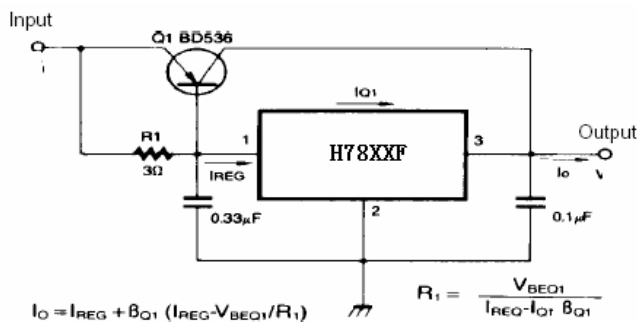


Figure 12. High Current Voltage Regulator

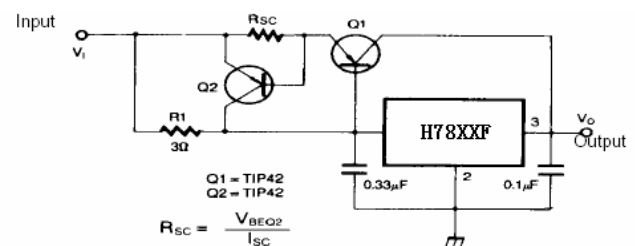


Figure 13. High Output Current with Short Circuit Protection



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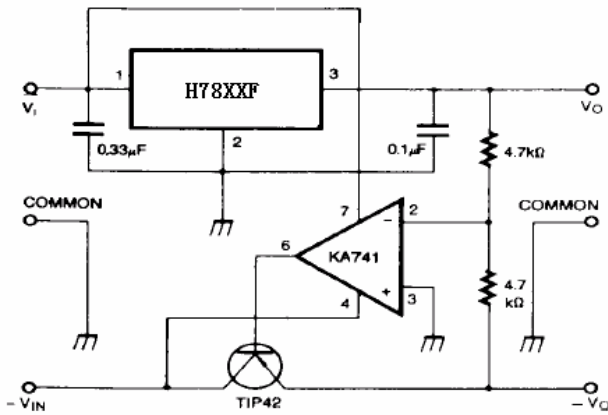


Figure 14. Tracking Voltage Regulator

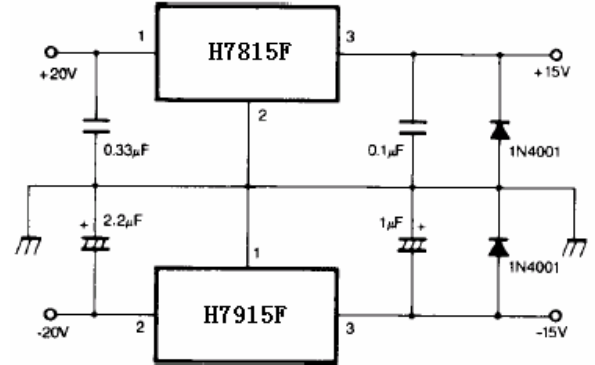


Figure 15. Split Power Supply (±15V-1A)

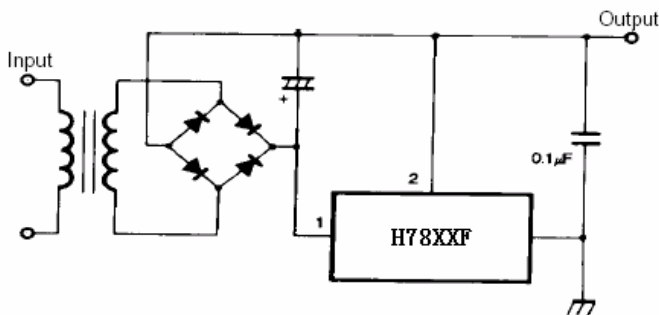


Figure 16. Negative Output Voltage Circuit

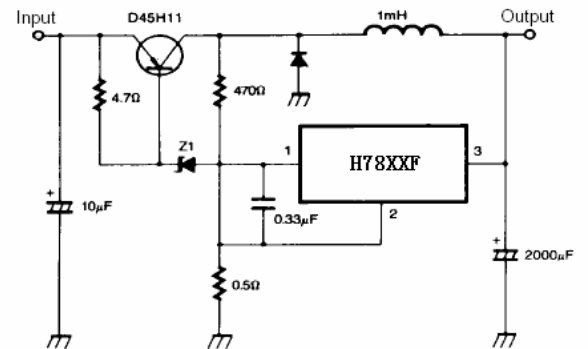


Figure 17. Switching Regulator