



Micro Commercial Components
20736 Marilla Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

MC7905 THRU MC7924

Features

- Output current in excess of 1.0 Ampere
- No external components required
- Internal thermal overload protection
- Internal short-circuit current limiting
- Output voltage offered in 2% tolerance

Maximum Ratings @ $T_A=25^\circ\text{C}$, Unless Otherwise Noted

Parameter	Symbol	Value	Unit
Input Voltage	V_1	30	V
Operating Ambient Temperature	P_D	15	W
Operating Junction Temperature	T_{OPR}	-20---+75	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55---+125	$^\circ\text{C}$

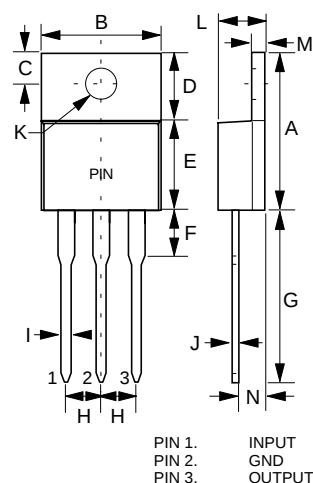
MC7905

Electrical Characteristics ($V_i=10\text{V}$, $I_o=500\text{mA}$, $0^\circ\text{C}<T_j<125^\circ\text{C}$,
 $C_i=2.0\mu\text{F}$, $C_o=1.0\mu\text{F}$, Unless Otherwise Specified)

Parameter	Sym	Min	Typ	Max	Test conditions
Output Voltage	V_o	4.9V	5.0V	5.1V	$T_j=25^\circ\text{C}$
		4.85V		5.15V	$7\text{V}\leq V_i\leq 20\text{V}$, $5\text{mA}\leq I_o\leq 1.0\text{A}$, $P_D=15\text{W}$
Load Regulation	ΔV_o		10mV	100mV	$5\text{mA}\leq I_o\leq 1.5\text{A}$, $T_j=25^\circ\text{C}$
			3.0mV	50mV	$250\text{mA}\leq I_o\leq 750\text{mA}$, $T_j=25^\circ\text{C}$
Line regulation	ΔV_o		3.0mV	100mV	$7\text{V}\leq V_i\leq 25\text{V}$, $T_j=25^\circ\text{C}$
			1.0mV	50mV	$8\text{V}\leq V_i\leq 12\text{V}$, $T_j=25^\circ\text{C}$
Quiescent Current	I_q		2.0mA	4.0mA	$T_j=25^\circ\text{C}$, $I_o=0$
Quiescent Current Change	ΔI_q			1.3mA	$7\text{V}\leq V_i\leq 25\text{V}$
				0.5mA	$5\text{mA}\leq I_o\leq 1.0\text{A}$
Output Noise Voltage	V_N		40 μV		$f=120\text{Hz}$
Ripple Rejection	RR	62dB	74dB		$8\text{V}\leq V_i\leq 18\text{V}$, $f=120\text{Hz}$, $T_j=25^\circ\text{C}$
Dropout Voltage	V_d		1.1V		$I_o=1.0\text{A}$, $T_j=25^\circ\text{C}$
Peak Output Current	$I_{o\text{peak}}$		2.1A		$T_j=25^\circ\text{C}$
Temperature Coefficient of Output voltage	$\frac{\Delta V_o}{\Delta T_j}$		0.4mV/ $^\circ\text{C}$		$0^\circ\text{C}\leq T_j\leq 125^\circ\text{C}$, $I_o=5\text{mA}$

Three-Terminal Negative Voltage Regulators

TO-220



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.560	.625	14.22	15.88	
B	.380	.420	9.65	10.67	
C	.100	.135	2.54	3.43	
D	.230	.270	5.84	6.86	
E	.380	.420	9.65	10.67	
F	-----	.250	-----	6.35	
G	.500	.580	12.70	14.73	
H	.090	.110	2.29	2.79	
I	.020	.045	0.51	1.14	
J	.012	.025	0.30	0.64	
K	.139	.161	3.53	4.09	Ø
L	.140	.190	3.56	4.83	
M	.045	.055	1.14	1.40	
N	.080	.115	2.03	2.92	

MC7906

Electrical Characteristics ($V_i=11V$, $I_o=500mA$, $0^{\circ}C < T_j < 125^{\circ}C$, $C_i=2.0\mu F$, $C_o=1.0\mu F$, Unless Otherwise Specified)

Parameter	Sym	Min	Typ	Max	Test conditions
Output Voltage	V_o	5.88V	6.0V	6.12V	$T_j=25^{\circ}C$
		5.83V		6.17V	$8V \leq V_i \leq 21V$, $5mA \leq I_o \leq 1.0A$, $P_D=15W$
Load Regulation	ΔV_o		10mV	120mV	$5mA \leq I_o \leq 1.5A$, $T_j=25^{\circ}C$,
			3.0mV	60mV	$250mA \leq I_o \leq 750mA$, $T_j=25^{\circ}C$
Line regulation	ΔV_o		4.0mV	120mV	$8V \leq V_i \leq 25V$, $T_j=25^{\circ}C$
			1.5mV	60mV	$9V \leq V_i \leq 13V$, $T_j=25^{\circ}C$
Quiescent Current	I_q		2.0mA	4.0mA	$T_j=25^{\circ}C$, $I_o=0$
Quiescent Current Change	ΔI_q			1.3mA 0.5mA	$8V \leq V_i \leq 25V$ $5mA \leq I_o \leq 1.0A$
Output Noise Voltage	V_N		44 μV		$10Hz \leq f \leq 100KHz$ $T_j=25^{\circ}C$
Ripple Rejection	RR	60dB	73dB		$f=120Hz$
Dropout Voltage	V_d		1.1V		$I_o=1.0A$, $T_j=25^{\circ}C$
Peak Output Current	I_{opeak}		2.1A		$T_j=25^{\circ}C$
Temperature Coefficient of Output voltage	$\Delta V_o/\Delta T_j$		0.5mV/ $^{\circ}C$		$0^{\circ}C \leq T_j \leq 125^{\circ}C$, $I_o=5mA$

MC7908

Electrical Characteristics ($V_i=14V$, $I_o=500mA$, $0^{\circ}C < T_j < 125^{\circ}C$, $C_i=2.0\mu F$, $C_o=1.0\mu F$, Unless Otherwise Specified)

Parameter	Sym	Min	Typ	Max	Test conditions
Output Voltage	V_o	7.84V	8.0V	8.16V	$T_j=25^{\circ}C$
		7.74V		8.26V	$10.5V \leq V_i \leq 23V$, $5mA \leq I_o \leq 1.0A$, $P_D=15W$
Load Regulation	ΔV_o		12mV	160mV	$5mA \leq I_o \leq 1.5A$, $T_j=25^{\circ}C$,
			4.0mV	80mV	$250mA \leq I_o \leq 750mA$, $T_j=25^{\circ}C$
Line regulation	ΔV_o		6.0mV	160mV	$10.5V \leq V_i \leq 25V$, $T_j=25^{\circ}C$
			2.0mV	80mV	$11V \leq V_i \leq 17V$, $T_j=25^{\circ}C$
Quiescent Current	I_q		2.2mA	4.5mA	$T_j=25^{\circ}C$, $I_o=0$
Quiescent Current Change	ΔI_q			1.0mA 0.5mA	$10.5V \leq V_i \leq 25V$ $5mA \leq I_o \leq 1.0A$
Output Noise Voltage	V_N		52 μV		$10Hz \leq f \leq 100KHz$ $T_j=25^{\circ}C$
Ripple Rejection	RR	56dB	71dB		$f=120Hz$
Dropout Voltage	V_d		2.0V		$I_o=1.0A$, $T_j=25^{\circ}C$
Peak Output Current	I_{opeak}		2.1A		$T_j=25^{\circ}C$
Temperature Coefficient of Output voltage	$\Delta V_o/\Delta T_j$		0.6mV/ $^{\circ}C$		$0^{\circ}C \leq T_j \leq 125^{\circ}C$, $I_o=5mA$

MC7909

Electrical Characteristics (Vi=15V, Io=500mA, 0°C<Tj<125°C, Ci=2.0uF, Co=1.0uF, Unless Otherwise Specified)

Parameter	Sym	Min	Typ	Max	Test conditions
Output Voltage	Vo	8.82V	9.0V	9.18V	Tj=25°C
		8.72V		9.28V	11.5V ≤ V1 ≤ 24V, 5mA ≤ Io ≤ 1.0A, Pd=15W
Load Regulation	ΔVo		12mV	180mV	5mA ≤ Io ≤ 1.5A, Tj=25°C,
			4.0mV	90mV	250mA ≤ Io ≤ 750mA, Tj=25°C
Line regulation	ΔVo		7.0mV	180mV	11.5V ≤ V1 ≤ 26V, Tj=25°C
			2.0mV	90mV	12V ≤ V1 ≤ 18V, Tj=25°C
Quiescent Current	Iq		2.2mA	4.5mA	Tj=25°C, Io=0
Quiescent Current Change	ΔIq			1.0mA 0.5mA	11.5V ≤ V1 ≤ 26V 5mA ≤ Io ≤ 1.0A
Output Noise Voltage	VN		58μV		10Hz ≤ f ≤ 100KHz Tj=25°C
Ripple Rejection	RR	56dB	71dB		f=120Hz
Dropout Voltage	Vd		1.1V		Io=1.0A, Tj=25°C
Peak Output Current	Iopeak		2.1A		Tj=25°C
Temperature Coefficient of Output voltage	ΔVo/ΔTj		0.6mV/°C		0°C ≤ Tj ≤ 125°C, Io=5mA

MC7910

Electrical Characteristics (Vi=15V, Io=500mA, 0°C<Tj<125°C, Ci=2.0uF, Co=1.0uF, Unless Otherwise Specified)

Parameter	Sym	Min	Typ	Max	Test conditions
Output Voltage	Vo	8.82V	9.0V	9.18V	Tj=25°C
		8.72V		9.28V	11.5V ≤ V1 ≤ 24V, 5mA ≤ Io ≤ 1.0A, Pd=15W
Load Regulation	ΔVo		12mV	180mV	5mA ≤ Io ≤ 1.5A, Tj=25°C,
			4.0mV	90mV	250mA ≤ Io ≤ 750mA, Tj=25°C
Line regulation	ΔVo		7.0mV	180mV	11.5V ≤ V1 ≤ 26V, Tj=25°C
			2.0mV	90mV	12V ≤ V1 ≤ 18V, Tj=25°C
Quiescent Current	Iq		2.2mA	4.5mA	Tj=25°C, Io=0
Quiescent Current Change	ΔIq			1.0mA 0.5mA	11.5V ≤ V1 ≤ 26V 5mA ≤ Io ≤ 1.0A
Output Noise Voltage	VN		58μV		10Hz ≤ f ≤ 100KHz Tj=25°C
Ripple Rejection	RR	56dB	71dB		f=120Hz
Dropout Voltage	Vd		1.1V		Io=1.0A, Tj=25°C
Peak Output Current	Iopeak		2.1A		Tj=25°C
Temperature Coefficient of Output voltage	ΔVo/ΔTj		0.6mV/°C		0°C ≤ Tj ≤ 125°C, Io=5mA

MC7912

Electrical Characteristics (Vi=19V, Io=500mA, 0°C<Tj<125°C, Ci=2.0uF, Co=1.0uF, Unless Otherwise Specified)

Parameter	Sym	Min	Typ	Max	Test conditions
Output Voltage	Vo	11.76V	12V	12.24V	Tj=25°C
		11.66V		12.34V	14.5V ≤ Vi ≤ 27V, 5mA ≤ Io ≤ 1.0A, Po=15W
Load Regulation	ΔVo		12mV	240mV	5.0mA ≤ Io ≤ 1.5A, Tj=25°C,
			4.0mV	120mV	250mA ≤ Io ≤ 750mA, Tj=25°C
Line regulation	ΔVo		10mV	240mV	14.5V ≤ Vi ≤ 30V, Tj=25°C
			3.0mV	120mV	16V ≤ Vi ≤ 22V, Tj=25°C
Quiescent Current	Iq		2.5mA	5.0mA	Tj=25°C, Io=0
Quiescent Current Change	ΔIq			1.0mA 0.5mA	14.5V ≤ Vi ≤ 30V 5mA ≤ Io ≤ 1.0A
Output Noise Voltage	VN		75μV		10Hz ≤ f ≤ 100KHz Tj=25°C
Ripple Rejection	RR	55dB	70dB		f=120Hz
Dropout Voltage	Vd		1.1V		Io=1.0A, Tj=25°C
Peak Output Current	Iopeak		2.1A		Tj=25°C
Temperature Coefficient of Output voltage	ΔVo/ΔTj		0.8mV/°C		0°C ≤ Tj ≤ 125°C, Io=5mA

MC7915

Electrical Characteristics (Vi=23V, Io=500mA, 0°C<Tj<125°C, Ci=2.0uF, Co=1.0uF, Unless Otherwise Specified)

Parameter	Sym	Min	Typ	Max	Test conditions
Output Voltage	Vo	14.7V	15.0V	15.3V	Tj=25°C
		14.55V		15.45V	17.5V ≤ Vi ≤ 30V, 5mA ≤ Io ≤ 1.0A, Po=15W
Load Regulation	ΔVo		12mV	300mV	5mA ≤ Io ≤ 1.5A, Tj=25°C,
			4.0mV	150mV	250mA ≤ Io ≤ 750mA, Tj=25°C
Line regulation	ΔVo		11mV	300mV	17.5V ≤ Vi ≤ 30V, Tj=25°C
			3.0mV	150mV	16V ≤ Vi ≤ 22V, Tj=25°C
Quiescent Current	Iq		2.5mA	5.0mA	Tj=25°C, Io=0
Quiescent Current Change	ΔIq			1.0mA 0.5mA	17.5V ≤ Vi ≤ 30V 5mA ≤ Io ≤ 1.0A
Output Noise Voltage	VN		90μV		10Hz ≤ f ≤ 100KHz Tj=25°C
Ripple Rejection	RR	54dB	69dB		f=120Hz
Dropout Voltage	Vd		1.1V		Io=1.0A, Tj=25°C
Peak Output Current	Iopeak		2.1A		Tj=25°C
Temperature Coefficient of Output voltage	ΔVo/ΔTj		0.9mV/°C		0°C ≤ Tj ≤ 125°C, Io=5mA

MC7918

Electrical Characteristics ($V_i=27V$, $I_o=500mA$, $0^{\circ}C < T_j < 125^{\circ}C$, $C_i=2.0\mu F$, $C_o=1.0\mu F$, Unless Otherwise Specified)

Parameter	Sym	Min	Typ	Max	Test conditions
Output Voltage	V_o	17.64V	18.0V	18.36V	$T_j=25^{\circ}C$
		17.54V		18.46V	$21.0V \leq V_i \leq 33V$, $5mA \leq I_o \leq 1.0A$, $P_o=15W$
Load Regulation	ΔV_o		12mV	360mV	$5mA \leq I_o \leq 1.5A$, $T_j=25^{\circ}C$,
			4.0mV	180mV	$250mA \leq I_o \leq 750mA$, $T_j=25^{\circ}C$
Line regulation	ΔV_o		15mV 5.0mV	360mV 180mV	$21.0V \leq V_i \leq 33V$, $T_j=25^{\circ}C$ $24V \leq V_i \leq 30V$, $T_j=25^{\circ}C$
Quiescent Current	I_q		2.5mA	5.0mA	$T_j=25^{\circ}C$, $I_o=0$
Quiescent Current Change	ΔI_q			1.0mA 0.5mA	$21V \leq V_i \leq 33V$ $5mA \leq I_o \leq 1.0A$
Output Noise Voltage	V_N		110 μV		$10Hz \leq f \leq 100KHz$ $T_j=25^{\circ}C$
Ripple Rejection	RR	53dB	68dB		$f=120Hz$
Dropout Voltage	V_d		1.1V		$I_o=1.0A$, $T_j=25^{\circ}C$
Peak Output Current	I_{opeak}		2.1A		$T_j=25^{\circ}C$
Temperature Coefficient of Output voltage	$\Delta V_o/\Delta T_j$		1.0mV/ $^{\circ}C$		$0^{\circ}C \leq T_j \leq 125^{\circ}C$, $I_o=5mA$

MC7924

Electrical Characteristics ($V_i=33V$, $I_o=500mA$, $0^{\circ}C < T_j < 125^{\circ}C$, $C_i=2.0\mu F$, $C_o=1.0\mu F$, Unless Otherwise Specified)

Parameter	Sym	Min	Typ	Max	Test conditions
Output Voltage	V_o	23.52V	24.0V	24.48V	$T_j=25^{\circ}C$
		23.42V		24.58V	$27V \leq V_i \leq 38V$, $5mA \leq I_o \leq 1.0A$, $P_o=15W$
Load Regulation	ΔV_o		12mV	480mV	$5mA \leq I_o \leq 1.5A$, $T_j=25^{\circ}C$,
			4.0mV	240mV	$250mA \leq I_o \leq 750mA$, $T_j=25^{\circ}C$
Line regulation	ΔV_o		18mV 6.0mV	480mV 240mV	$27V \leq V_i \leq 38V$, $T_j=25^{\circ}C$ $30V \leq V_i \leq 36V$, $T_j=25^{\circ}C$
Quiescent Current	I_q		3.0mA	5.0mA	$T_j=25^{\circ}C$, $I_o=0$
Quiescent Current Change	ΔI_q			1.0mA 0.5mA	$27V \leq V_i \leq 38V$ $5mA \leq I_o \leq 1.0A$
Output Noise Voltage	V_N		170 μV		$10Hz \leq f \leq 100KHz$ $T_j=25^{\circ}C$
Ripple Rejection	RR	50dB	65dB		$f=120Hz$
Dropout Voltage	V_d		1.1V		$I_o=1.0A$, $T_j=25^{\circ}C$
Peak Output Current	I_{opeak}		2.1A		$T_j=25^{\circ}C$
Temperature Coefficient of Output voltage	$\Delta V_o/\Delta T_j$		1.0mV/ $^{\circ}C$		$0^{\circ}C \leq T_j \leq 125^{\circ}C$, $I_o=5mA$

MC7905 thru MC7924



Representation Schematic Diagram

