Micro Commercial Components
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MC7905CT THRU MC7915CT

Three-Terminal Negative Voltage Regulators

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
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0

Maximum Ratings @ T_A=25°C, Unless Otherwise Noted

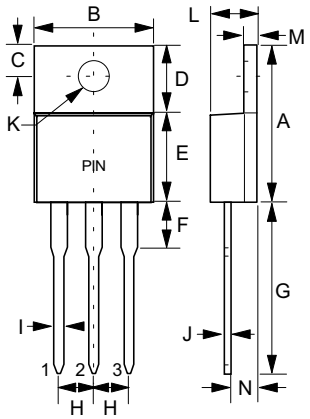
Parameter	Symbol	Value	Unit
Input Voltage	V_i	-35	V
Operating Ambient Temperature	P_D	15	W
Operating Junction Temperature	T_{OPR}	0---+150	°C
Storage Temperature Range	T_{STG}	-55---+150	°C

MC7905CT

Electrical Characteristics (Vi=10V, 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	V_0	-4.9V	-5.0V	-5.1V	T_j=25°C
		-4.85V		-5.15V	-7V≦V_I≦-20V, 5mA≦I_O≦1.0A, P_D=15W
Load Regulation	$\triangle V_o$		10mV	100mV	5mA≦I_O≦1.5A, T_j=25°C,
			3.0mV	50mV	250mA≦I_O≦750mA, T_j=25°C
Line regulation	$\triangle V_o$		3.0mV 1.0mV	100mV 50mV	-7V≦V_I≦-25V, T_j=25°C -8V≦V_I≦-12V, T_j=25°C
Quiescent Current	I_q		2.0mA	4.0mA	T_j=25°C, I_O=0
Quiescent Current Change	$\triangle I_q$			1.3mA 0.5mA	-7V≦V_I≦-25V 5mA≦I_o≦1.0A
Output Noise Voltage	V_N		40μV		f=120Hz
Ripple Rejection	RR	62dB	74dB		-8V≦V_I≦-18V f=120Hz, T_j=25°C
Dropout Voltage	V_d		1.1V		I_O=1.0A, T_j=25°C
Peak Output Current	I_{opeak}		2.1A		T_j=25°C
Temperature Coefficient of Output voltage	$\triangle V_O/\triangle Tj$		-0.4mV/°C		0°C≦Tj≦125°C, I_O=5mA

TO-220



PIN 1. GND
PIN 2. INPUT
PIN 3. OUTPUT

DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
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	

MC7906CT

Electrical Characteristics (Vi=11V, 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	V_0	-5.88V	-6.0V	-6.12V	T_j=25°C
		-5.83V		-6.17V	-8V≦V_1≦-21V, 5mA≦I_O≦1.0A, P_D=15W
Load Regulation	$\triangle V_o$		10mV	120mV	5mA≦I_O≦1.5A, T_j=25°C,
			3.0mV	60mV	250mA≦I_O≦750mA, T_j=25°C
Line regulation	$\triangle V_o$		4.0mV 1.5mV	120mV 60mV	-8V≦V_1≦-25V, T_j=25°C -9V≦V_1≦-13V, T_j=25°C
Quiescent Current	I_q		2.0mA	4.0mA	T_j=25°C, I_O=0
Quiescent Current Change	$\triangle I_q$			1.3mA 0.5mA	-8V≦V_1≦-25V 5mA≦I_o≦1.0A
Output Noise Voltage	V_N		44μV		10Hz≦f≦100KHz T_j=25°C
Ripple Rejection	RR	60dB	73dB		f=120Hz
Dropout Voltage	V_d		1.1V		I_O=1.0A, T_j=25°C
Peak Output Current	I_{opeak}		2.1A		T_j=25°C
Temperature Coefficient of Output voltage	$\triangle V_O/\triangle Tj$		-0.5mV/°C		0°C≦Tj≦125°C, I_O=5mA

MC7908CT

Electrical Characteristics (Vi=14V, 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	V_0	-7.84V	-8.0V	-8.16V	T_j=25°C
		-7.74V		-8.26V	-10.5V≦V_1≦-23V, 5mA≦I_O≦1.0A, P_D=15W
Load Regulation	$\triangle V_o$		12mV	160mV	5mA≦I_O≦1.5A, T_j=25°C,
			4.0mV	80mV	250mA≦I_O≦750mA, T_j=25°C
Line regulation	$\triangle V_o$		6.0mV 2.0mV	160mV 80mV	-10.5V≦V_1≦-25V, T_j=25°C -11V≦V_1≦-17V, T_j=25°C
Quiescent Current	I_q		2.2mA	4.5mA	T_j=25°C, I_O=0
Quiescent Current Change	$\triangle I_q$			1.0mA 0.5mA	-10.5V≦V_1≦-25V 5mA≦I_o≦1.0A
Output Noise Voltage	V_N		52μV		10Hz≦f≦100KHz T_j=25°C
Ripple Rejection	RR	56dB	71dB		f=120Hz
Dropout Voltage	V_d		2.0V		I_O=1.0A, T_j=25°C
Peak Output Current	I_{opeak}		2.1A		T_j=25°C
Temperature Coefficient of Output voltage	$\triangle V_O/\triangle Tj$		-0.6mV/°C		0°C≦Tj≦125°C, I_O=5mA

MC7909CT

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	V_0	-8.82V	-9.0V	-9.18V	T_j=25°C
		-8.72V		-9.28V	-11.5V≦V_1≦-24V, 5mA≦I_O≦1.0A, P_D=15W
Load Regulation	$\triangle V_o$		12mV	180mV	5mA≦I_O≦1.5A, T_j=25°C,
			4.0mV	90mV	250mA≦I_O≦750mA, T_j=25°C
Line regulation	$\triangle V_o$		7.0mV 2.0mV	180mV 90mV	-11.5V≦V_1≦-26V, T_j=25°C -12V≦V_1≦-18V, T_j=25°C
Quiescent Current	I_q		2.2mA	4.5mA	T_j=25°C, I_O=0
Quiescent Current Change	$\triangle I_q$			1.0mA 0.5mA	-11.5V≦V_1≦-26V 5mA≦I_o≦1.0A
Output Noise Voltage	V_N		58μV		10Hz≦f≦100KHz T_j=25°C
Ripple Rejection	RR	56dB	71dB		f=120Hz
Dropout Voltage	V_d		1.1V		I_O=1.0A, T_j=25°C
Peak Output Current	I_{opeak}		2.1A		T_j=25°C
Temperature Coefficient of Output voltage	$\triangle V_O/\triangle Tj$		-0.6mV/°C		0°C≦Tj≦125°C, I_O=5mA

MC7912CT

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

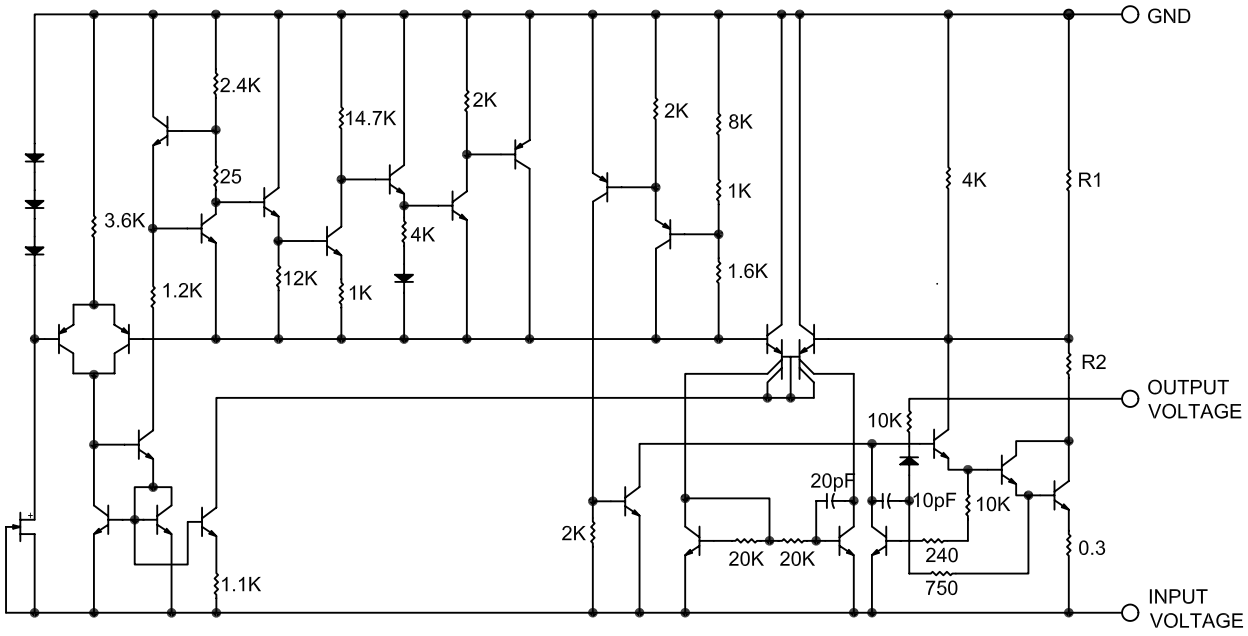
Parameter	Sym	Min	Typ	Max	Test conditions
Output Voltage	V_0	-11.76V	-12V	-12.24V	T_j=25°C
		-11.66V		-12.34V	-14.5V≦V_1≦-27V, 5mA≦I_O≦1.0A, P_D=15W
Load Regulation	$\triangle V_o$		12mV	240mV	5.0mA≦I_O≦1.5A, T_j=25°C,
			4.0mV	120mV	250mA≦I_O≦750mA, T_j=25°C
Line regulation	$\triangle V_o$		10mV 3.0mV	240mV 120mV	-14.5V≦V_1≦-30V, T_j=25°C -16V≦V_1≦-22V, T_j=25°C
Quiescent Current	I_q		2.5mA	5.0mA	T_j=25°C, I_O=0
Quiescent Current Change	$\triangle I_q$			1.0mA 0.5mA	-14.5V≦V_1≦-30V 5mA≦I_o≦1.0A
Output Noise Voltage	V_N		75μV		10Hz≦f≦100KHz T_j=25°C
Ripple Rejection	RR	55dB	70dB		f=120Hz
Dropout Voltage	V_d		1.1V		I_O=1.0A, T_j=25°C
Peak Output Current	I_{opeak}		2.1A		T_j=25°C
Temperature Coefficient of Output voltage	$\triangle V_O/\triangle Tj$		-0.8mV/°C		0°C≦Tj≦125°C, I_O=5mA

MC7915CT

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	V_0	-14.7V	-15.0V	-15.3V	T_j=25°C
		-14.55V		15.45V	-17.5V≦V_1≦-30V, 5mA≦I_O≦1.0A, P_D=15W
Load Regulation	$\triangle V_o$		12mV	300mV	5mA≦I_O≦1.5A, T_j=25°C,
			4.0mV	150mV	250mA≦I_O≦750mA, T_j=25°C
Line regulation	$\triangle V_o$		11mV 3.0mV	300mV 150mV	-17.5V≦V_1≦-30V, T_j=25°C -16V≦V_1≦-22V, T_j=25°C
Quiescent Current	I_q		2.5mA	5.0mA	T_j=25°C, I_O=0
Quiescent Current Change	$\triangle I_q$			1.0mA 0.5mA	-17.5V≦V_1≦-30V 5mA≦I_o≦1.0A
Output Noise Voltage	V_N		90μV		10Hz≦f≦100KHz T_j=25°C
Ripple Rejection	RR	54dB	69dB		f=120Hz
Dropout Voltage	V_d		1.1V		I_O=1.0A, T_j=25°C
Peak Output Current	I_{opeak}		2.1A		T_j=25°C
Temperature Coefficient of Output voltage	$\triangle V_O/\triangle Tj$		-0.9mV/°C		0°C≦Tj≦125°C, I_O=5mA

Representation Schematic Diagram



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