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Micro Commercial Components



Micro Commercial Components  
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# MC7905CT THRU MC7912CT

## Three-Terminal Negative Voltage Regulators

### Features

- Halogen free available upon request by adding suffix "-HF"
- Output current in excess of 1.0 Ampere
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Internal short-circuit current limiting And Internal thermal shut down protection
- Safe operating area protection
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Mounting Torque: 5 in-lbs Maximum

**Maximum Ratings @ T<sub>A</sub>=25°C, Unless Otherwise Noted**

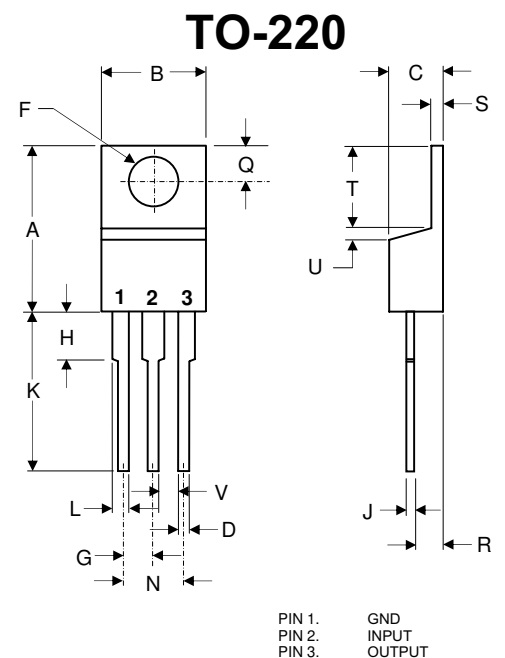
Parameter	Symbol	Value	Unit
Input Voltage	V <sub>I</sub>	-35	V
Operating Temperature Range	T <sub>OPR</sub>	0---125	°C
Storage Temperature Range	T <sub>STG</sub>	-55---150	°C

### MC7905CT

**Electrical Characteristics (V<sub>i</sub>=10V, I<sub>o</sub>=500mA, 0°C<T<sub>j</sub><125°C,  
C<sub>i</sub>=2.0uF, C<sub>o</sub>=1.0uF, Unless Otherwise Specified)**

Parameter	Sym	Min	Typ	Max	Test conditions
Output Voltage	V <sub>o</sub>	-4.8V	-5.0V	-5.2V	T <sub>j</sub> =25°C
		-4.75V		-5.25V	-7V ≤ V <sub>i</sub> ≤ -20V, 5mA ≤ I <sub>o</sub> ≤ 1.0A, P <sub>D</sub> ≤ 15W
Load Regulation	ΔV <sub>o</sub>		15mV	100mV	5mA ≤ I <sub>o</sub> ≤ 1.5A, T <sub>j</sub> =25°C,
			5.0mV	50mV	250mA ≤ I <sub>o</sub> ≤ 750mA, T <sub>j</sub> =25°C
Line regulation	ΔV <sub>o</sub>		12.5mv 4.0mV	50mV 15mV	-7V ≤ V <sub>i</sub> ≤ -25V, T <sub>j</sub> =25°C -8V ≤ V <sub>i</sub> ≤ -12V, T <sub>j</sub> =25°C
Quiescent Current	I <sub>q</sub>		1.5mA	2.0mA	T <sub>j</sub> =25°C, I <sub>o</sub> =0
Quiescent Current Change	ΔI <sub>q</sub>			0.5mA 0.5mA	-7V ≤ V <sub>i</sub> ≤ -25V 5mA ≤ I <sub>o</sub> ≤ 1.0A
Output Noise Voltage	V <sub>N</sub>		120μV		f=120Hz
Ripple Rejection	RR	54dB	60dB		-8V ≤ V <sub>i</sub> ≤ -18V f=120Hz, T <sub>j</sub> =25°C
Dropout Voltage	V <sub>d</sub>		1.1V		I <sub>o</sub> =1.0A, T <sub>j</sub> =25°C
Peak Output Current	I <sub>opeak</sub>		2.1A		T <sub>j</sub> =25°C
Temperature Coefficient of Output voltage	ΔV <sub>o</sub> /ΔT <sub>j</sub>		-0.4mV/°C		0°C ≤ T <sub>j</sub> ≤ 125°C, I <sub>o</sub> =5mA

Notes:1.High Temperature Solder Exemption Applied, see EU Directive Annex 7.



DIM	DIMENSIONS				NOTE
	INCHES		MM		
A	.560	.625	14.22	15.88	
B	.380	.420	9.65	10.67	
C	.140	.190	3.56	4.82	
D	.020	.045	0.51	1.14	
F	.139	.161	3.53	4.09	∅
G	.190	.110	2.29	2.79	
H	---	.250	---	6.35	
J	.012	.025	0.30	0.64	
K	.500	.580	12.70	14.73	
L	.045	.060	1.14	1.52	
N	.190	.210	4.83	5.33	
Q	.100	.135	2.54	3.43	
R	.080	.115	2.04	2.92	
S	.045	.055	1.14	1.39	
T	.230	.270	5.84	6.86	
U	----	.050	----	1.27	
V	.045	----	1.15	----	

## MC7906CT

**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	$V_o$	-5.75V	-6.0V	-6.25V	$T_j=25^\circ C$
		-5.70V		-6.30V	$-8V \leq V_1 \leq -21V$ , $5mA \leq I_o \leq 1.0A$ , $P_D \leq 15W$
Load Regulation	$\Delta V_o$		15mV	160mV	$5mA \leq I_o \leq 1.5A$ , $T_j=25^\circ C$ ,
			5.0mV	80mV	$250mA \leq I_o \leq 750mA$ , $T_j=25^\circ C$
Line regulation	$\Delta V_o$		12.5mV 4.0mV	160mV 80mV	$-8.0V \leq V_1 \leq -25V$ , $T_j=25^\circ C$ $-9V \leq V_1 \leq -13V$ , $T_j=25^\circ C$
Quiescent Current	$I_q$		1.5mA	2.0mA	$T_j=25^\circ C$ , $I_o=0$
Quiescent Current Change	$\Delta I_q$			1.0mA 0.5mA	$-10.5V \leq V_1 \leq -25V$ $5mA \leq I_o \leq 1.0A$
Output Noise Voltage	$V_N$		200 $\mu V$		10Hz $\leq f \leq$ 100KHz $T_j=25^\circ C$
Ripple Rejection	RR	54dB	60dB		$f=120Hz$ $-9V \leq V_1 \leq -13V$ , $T_j=25^\circ C$
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/ $^\circ C$		$0^\circ C \leq T_j \leq 125^\circ C$ , $I_o=5mA$

## MC7908CT

**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	$V_o$	-7.70V	-8.0V	-8.30V	$T_j=25^\circ C$
		-7.60V		-8.40V	$-10.5V \leq V_1 \leq -23V$ , $5mA \leq I_o \leq 1.0A$ , $P_D=15W$
Load Regulation	$\Delta V_o$		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	$\Delta V_o$		6.0mV 2.0mV	160mV 80mV	$-10.5V \leq V_1 \leq -25V$ , $T_j=25^\circ C$ $-11V \leq V_1 \leq -17V$ , $T_j=25^\circ C$
Quiescent Current	$I_q$		2.2mA	4.5mA	$T_j=25^\circ C$ , $I_o=0$
Quiescent Current Change	$\Delta I_q$			1.0mA 0.5mA	$-10.5V \leq V_1 \leq -25V$ $5mA \leq I_o \leq 1.0A$
Output Noise Voltage	$V_N$		52 $\mu V$		10Hz $\leq f \leq$ 100KHz $T_j=25^\circ C$
Ripple Rejection	RR	56dB	71dB		$f=120Hz$ $-10.5V \leq V_1 \leq -25V$ $T_j=25^\circ C$
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/ $^\circ C$		$0^\circ C \leq T_j \leq 125^\circ C$ , $I_o=5mA$

# MC7909CT

**Electrical Characteristics ( $V_i=15V$ ,  $I_o=500mA$ ,  $0^\circ C < T_j < 125^\circ C$ ,  $C_i=2.0\mu F$ ,  $C_o=1.0\mu F$ , Unless Otherwise Specified)**

Parameter	Sym	Min	Typ	Max	Test conditions
Output Voltage	$V_o$	-8.70V	-9.0V	-9.30V	$T_j=25^\circ C$
		-8.60V		-9.40V	$-11.5V \leq V_1 \leq -24V$ , $5mA \leq I_o \leq 1.0A$ , $P_D \leq 15W$
Load Regulation	$\Delta V_o$		12mV	180mV	$5mA \leq I_o \leq 1.5A$ , $T_j=25^\circ C$ ,
			4.0mV	90mV	$250mA \leq I_o \leq 750mA$ , $T_j=25^\circ C$
Line regulation	$\Delta V_o$		10mV 5.0mV	180mV 90mV	$-11.5V \leq V_1 \leq -26V$ , $T_j=25^\circ C$ $-12V \leq V_1 \leq -18V$ , $T_j=25^\circ C$
Quiescent Current	$I_q$		3.0mA	6.0mA	$T_j=25^\circ C$ , $I_o=0$
Quiescent Current Change	$\Delta I_q$			1.0mA 0.5mA	$-11.5V \leq V_1 \leq -26V$ $5mA \leq I_o \leq 1.0A$
Output Noise Voltage	$V_N$		175 $\mu$ V		$10Hz \leq f \leq 100KHz$ , $T_j=25^\circ C$
Ripple Rejection	RR	54dB	60dB		$f=120Hz$ , $-11.5V \leq V_1 \leq -26V$ , $T_j=25^\circ C$
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	$\Delta V_o/\Delta T_j$		-0.6mV/ $^\circ C$		$0^\circ C \leq T_j \leq 125^\circ C$ , $I_o=5mA$

# 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	Vo	-11.50V	-12V	-12.50V	Tj=25°C
		-11.40V		-12.60V	-14.5V ≤ V1 ≤ -27V, 5mA ≤ Io ≤ 1.0A, Pd ≤ 15W
Load Regulation	ΔVo		15mV	200mV	5.0mA ≤ Io ≤ 1.5A, Tj=25°C,
			5.0mV	75mV	250mA ≤ Io ≤ 750mA, Tj=25°C
Line regulation	ΔVo		5.0mV 3.0mV	80mV 30mV	-14.5V ≤ V1 ≤ -30V, Tj=25°C -16V ≤ V1 ≤ -22V, Tj=25°C
Quiescent Current	Iq		2.0mA	3.0mA	Tj=25°C, Io=0
Quiescent Current Change	ΔIq			0.5mA 0.5mA	-14.5V ≤ V1 ≤ -30V 5mA ≤ Io ≤ 1.0A
Output Noise Voltage	VN		300μV		10Hz ≤ f ≤ 100KHz Tj=25°C
Ripple Rejection	RR	54dB	60dB		f=120Hz, -14.5V ≤ V1 ≤ -30V, Tj=25°C
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

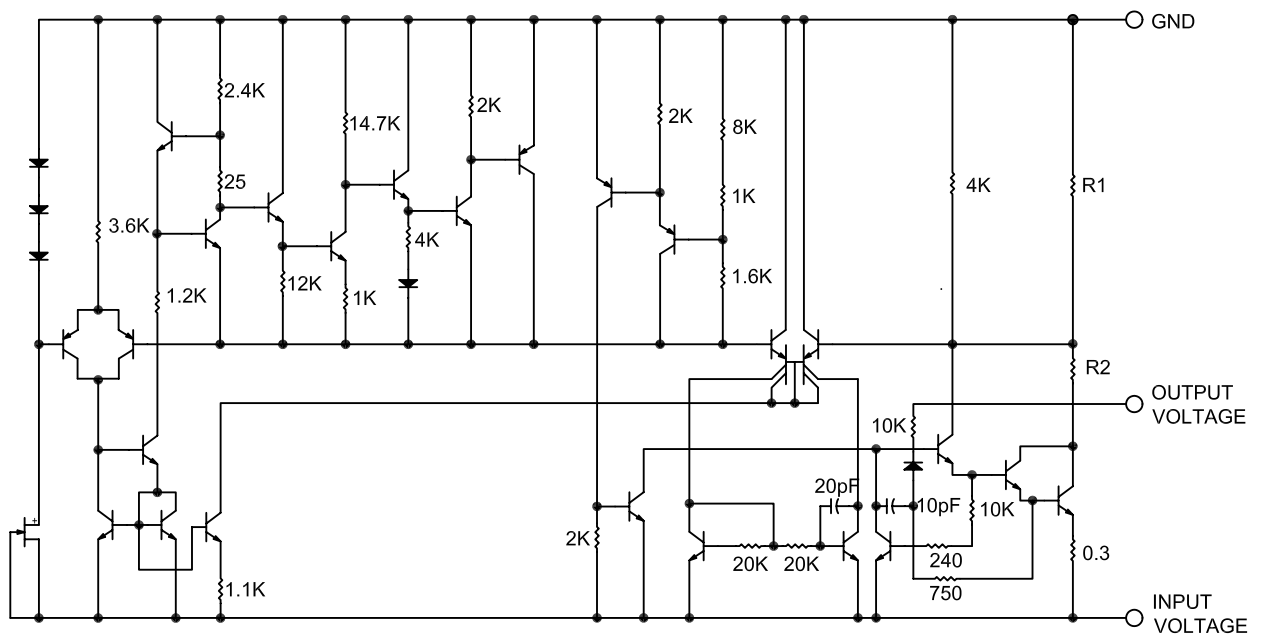
Marking:

<p>MCC 79XXCT</p>
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XX:05~12

# MC7905CT thru MC7912CT

## Representation Schematic Diagram





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### Ordering Information :

Device	Packing
Part Number-BP	Bulk; 1 Kpcs/Box

Note : Adding "-HF" suffix for halogen free, eg. Part Number-BP-HF

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