

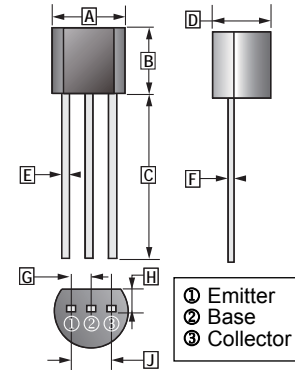
RoHS Compliant Product

A suffix of "-C" specifies halogen or lead -free

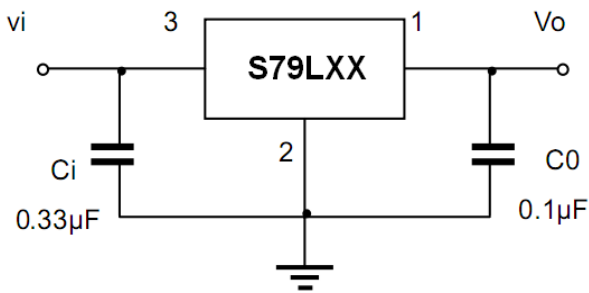
DESCRIPTION

The S79L05 series of three-terminal negative regulators are available in the TO-92 package. They can provide local on-card-regulation, eliminating the distribution problems associated with single point regulation; furthermore, having the same voltage options as the SM79L05 positive standard series, they are particularly suited for split power supplies. If adequate heat sinking is provided, the S79Lxx series can deliver an output current in excess of 100mA although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain adjustable voltage and currents.

TO-92



APPLICATION



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.40	4.70	F	0.30	0.51
B	4.30	4.70	G	1.27 TYP.	
C	12.70	-	H	1.10	1.40
D	3.30	3.81	J	2.42	2.66
E	0.36	0.56	K	0.36	0.76

Note:

Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators

MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Input Voltage	V_{IN}	-30	V
		-35	
Output Current	I_o	100	mA
Operating Junction Temperature Range	T_J	0~125	°C
Storage Temperature Range	T_{STG}	-55~150	
Power Dissipation	P_D	625	mW

S79L05 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, $T_J=0\sim 125\text{ }^\circ\text{C}$, $I_O=40\text{mA}$, $V_{IN}=-10\text{V}$, $C_{IN}=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$ unless otherwise specified)

Symbol	Test Conditions	Min	Typ	Max	Unit
V_O	$V_{IN} = -10\text{V}$, $I_O=40\text{mA}$, $T_J=25\text{ }^\circ\text{C}$	-4.8	-5	-5.2	V
	$-7\text{V} \leq V_{IN} \leq -20\text{V}$, $1\text{mA} \leq I_O \leq 40\text{mA}$	-4.75	-5	-5.25	
	$1\text{mA} \leq I_O \leq 70\text{mA}$	-4.75	-5	-5.25	
V_O (Line Regulation)	$-7\text{V} \leq V_{IN} \leq -20\text{V}$, $T_J=25\text{ }^\circ\text{C}$	-	15	150	mV
	$-8\text{V} \leq V_{IN} \leq -20\text{V}$, $T_J=25\text{ }^\circ\text{C}$	-	12	100	
V_O (Load Regulation)	$1\text{mA} \leq I_O \leq 100\text{mA}$, $T_J=25\text{ }^\circ\text{C}$	-	20	60	mV
	$1\text{mA} \leq I_O \leq 40\text{mA}$, $T_J=25\text{ }^\circ\text{C}$	-	10	30	
I_Q	$T_J=25\text{ }^\circ\text{C}$	-	-	6	mA
I_Q	$1\text{mA} \leq I_O \leq 40\text{mA}$	-	-	0.1	mA
	$-8\text{V} \leq V_{IN} \leq -20\text{V}$	-	-	1.5	
V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$, $T_J=25\text{ }^\circ\text{C}$	-	40	-	μV
RR	$-8\text{V} \leq V_{IN} \leq -18\text{V}$, $f=120\text{Hz}$	41	49	-	dB
V_D	$T_J=25\text{ }^\circ\text{C}$	-	1.7	-	V

S79L06 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, $T_J=0\sim 125\text{ }^\circ\text{C}$, $I_O=40\text{mA}$, $V_{IN}=-11\text{V}$, $C_{IN}=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$ unless otherwise specified)

Symbol	Test Conditions	Min	Typ	Max	Unit
V_O	$V_{IN} = -11\text{V}$, $I_O=40\text{mA}$, $T_J=25\text{ }^\circ\text{C}$	-5.75	-6	-6.25	V
	$-8\text{V} \leq V_{IN} \leq -20\text{V}$, $1\text{mA} \leq I_O \leq 40\text{mA}$	-5.7	-6	-6.3	
	$1\text{mA} \leq I_O \leq 70\text{mA}$	-5.7	-6	-6.3	
V_O (Line Regulation)	$-8\text{V} \leq V_{IN} \leq -20\text{V}$, $T_J=25\text{ }^\circ\text{C}$	-	20	175	mV
	$-9\text{V} \leq V_{IN} \leq -20\text{V}$, $T_J=25\text{ }^\circ\text{C}$	-	15	125	
V_O (Load Regulation)	$1\text{mA} \leq I_O \leq 100\text{mA}$, $T_J=25\text{ }^\circ\text{C}$	-	21	80	mV
	$1\text{mA} \leq I_O \leq 40\text{mA}$, $T_J=25\text{ }^\circ\text{C}$	-	11	40	
I_Q	$T_J=25\text{ }^\circ\text{C}$	-	3.9	6	mA
I_Q	$1\text{mA} \leq I_O \leq 40\text{mA}$	-	-	0.1	mA
	$-9\text{V} \leq V_{IN} \leq -20\text{V}$	-	-	1.5	
V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$, $T_J=25\text{ }^\circ\text{C}$	-	44	-	μV
RR	$-9\text{V} \leq V_{IN} \leq -19\text{V}$, $f=120\text{Hz}$	40	48	-	dB
V_D	$T_J=25\text{ }^\circ\text{C}$	-	1.7	-	V

S79L08 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, $T_J = 0 \sim 125^\circ\text{C}$, $I_O = 40\text{mA}$, $V_{IN} = -14\text{V}$, $C_{IN} = 0.33\mu\text{F}$, $C_O = 0.1\mu\text{F}$ unless otherwise specified)

Symbol	Test Conditions	Min	Typ	Max	Unit
V_O	$V_{IN} = -14\text{V}$, $I_O = 40\text{mA}$, $T_J = 25^\circ\text{C}$	-7.7	-8	-8.3	V
	$-10.5\text{V} \leq V_{IN} \leq -23\text{V}$, $1\text{mA} \leq I_O \leq 40\text{mA}$	-7.6	-8	-8.4	
	$1\text{mA} \leq I_O \leq 70\text{mA}$	-7.6	-8	-8.4	
V_O (Line Regulation)	$-10.5\text{V} \leq V_{IN} \leq -23\text{V}$, $T_J = 25^\circ\text{C}$	-	42	200	mV
	$-11\text{V} \leq V_{IN} \leq -23\text{V}$, $T_J = 25^\circ\text{C}$	-	36	150	
V_O (Load Regulation)	$1\text{mA} \leq I_O \leq 100\text{mA}$, $T_J = 25^\circ\text{C}$	-	30	100	mV
	$1\text{mA} \leq I_O \leq 40\text{mA}$, $T_J = 25^\circ\text{C}$	-	15	50	
I_Q	$T_J = 25^\circ\text{C}$	-	4	6	mA
I_Q	$1\text{mA} \leq I_O \leq 40\text{mA}$	-	-	0.1	mA
	$-11\text{V} \leq V_{IN} \leq -23\text{V}$	-	-	1.5	
V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$, $T_J = 25^\circ\text{C}$	-	54	-	μV
RR	$-11\text{V} \leq V_{IN} \leq -21\text{V}$, $f = 120\text{Hz}$	37	46	-	dB
V_D	$T_J = 25^\circ\text{C}$	-	1.7	-	V

S79L09 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, $T_J = 0 \sim 125^\circ\text{C}$, $I_O = 40\text{mA}$, $V_{IN} = -16\text{V}$, $C_{IN} = 0.33\mu\text{F}$, $C_O = 0.1\mu\text{F}$ unless otherwise specified)

Symbol	Test Conditions	Min	Typ	Max	Unit
V_O	$V_{IN} = -16\text{V}$, $I_O = 40\text{mA}$, $T_J = 25^\circ\text{C}$	-8.64	-9	-9.36	V
	$-12\text{V} \leq V_{IN} \leq -24\text{V}$, $1\text{mA} \leq I_O \leq 40\text{mA}$	-8.55	-9	-9.45	
	$1\text{mA} \leq I_O \leq 70\text{mA}$	-8.55	-9	-9.45	
V_O (Line Regulation)	$-12\text{V} \leq V_{IN} \leq -24\text{V}$, $T_J = 25^\circ\text{C}$	-	45	175	mV
	$-13\text{V} \leq V_{IN} \leq -24\text{V}$, $T_J = 25^\circ\text{C}$	-	40	125	
V_O (Load Regulation)	$1\text{mA} \leq I_O \leq 100\text{mA}$, $T_J = 25^\circ\text{C}$	-	19	90	mV
	$1\text{mA} \leq I_O \leq 40\text{mA}$, $T_J = 25^\circ\text{C}$	-	11	40	
I_Q	$T_J = 25^\circ\text{C}$	-	4.1	6	mA
I_Q	$1\text{mA} \leq I_O \leq 40\text{mA}$	-	-	0.1	mA
	$-13\text{V} \leq V_{IN} \leq -24\text{V}$	-	-	1.5	
V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$, $T_J = 25^\circ\text{C}$	-	58	-	μV
RR	$-15\text{V} \leq V_{IN} \leq -24\text{V}$, $f = 120\text{Hz}$	-	45	-	dB
V_D	$T_J = 25^\circ\text{C}$	-	1.7	-	V

S79L12 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, $T_J = 0 \sim 125^\circ\text{C}$, $I_O = 40\text{mA}$, $V_{IN} = -19\text{V}$, $C_{IN} = 0.33\mu\text{F}$, $C_O = 0.1\mu\text{F}$ unless otherwise specified)

Symbol	Test Conditions	Min	Typ	Max	Unit
V_O	$V_{IN} = -19\text{V}$, $I_O = 40\text{mA}$, $T_J = 25^\circ\text{C}$	-11.5	-12	-12.5	V
	$-14.5\text{V} \leq V_{IN} \leq -27\text{V}$, $1\text{mA} \leq I_O \leq 40\text{mA}$	-11.4	-12	-12.6	
	$1\text{mA} \leq I_O \leq 70\text{mA}$	-11.4	-12	-12.6	
V_O (Line Regulation)	$-14.5\text{V} \leq V_{IN} \leq -27\text{V}$, $T_J = 25^\circ\text{C}$	-	50	250	mV
	$-16\text{V} \leq V_{IN} \leq -27\text{V}$, $T_J = 25^\circ\text{C}$	-	40	200	
V_O (Load Regulation)	$1\text{mA} \leq I_O \leq 100\text{mA}$, $T_J = 25^\circ\text{C}$	-	24	100	mV
	$1\text{mA} \leq I_O \leq 40\text{mA}$, $T_J = 25^\circ\text{C}$	-	15	50	
I_Q	$T_J = 25^\circ\text{C}$	-	-	6.5	mA
I_Q	$1\text{mA} \leq I_O \leq 40\text{mA}$	-	-	1.5	mA
	$-16\text{V} \leq V_{IN} \leq -27\text{V}$, $I_O = 500\text{mA}$	-	-	0.1	
V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$, $T_J = 25^\circ\text{C}$	-	80	-	μV
RR	$-15\text{V} \leq V_{IN} \leq -25\text{V}$, $f = 120\text{Hz}$	37	42	-	dB
V_D	$T_J = 25^\circ\text{C}$	-	1.7	-	V

S79L15-B ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, $T_J = 0 \sim 125^\circ\text{C}$, $I_O = 40\text{mA}$, $V_{IN} = -23\text{V}$, $C_{IN} = 0.33\mu\text{F}$, $C_O = 0.1\mu\text{F}$ unless otherwise specified) (Note 1)

Symbol	Test Conditions	Min	Typ	Max	Unit
V_O	$V_{IN} = -23\text{V}$, $I_O = 40\text{mA}$, $T_J = 25^\circ\text{C}$	-14.4	-15	-15.6	V
	$-17.5\text{V} \leq V_{IN} \leq -30\text{V}$, $1\text{mA} \leq I_O \leq 40\text{mA}$	-14.25	-15	-15.75	
	$1\text{mA} \leq I_O \leq 70\text{mA}$	-14.25	-15	-15.75	
V_O (Line Regulation)	$-17.5\text{V} \leq V_{IN} \leq -30\text{V}$, $I_O = 40\text{mA}$, $T_J = 25^\circ\text{C}$	-	65	300	mV
	$-20\text{V} \leq V_{IN} \leq -30\text{V}$, $I_O = 40\text{mA}$, $T_J = 25^\circ\text{C}$	-	50	250	
V_O (Load Regulation)	$V_{IN} = 23\text{V}$, $1\text{mA} \leq I_O \leq 100\text{mA}$, $T_J = 25^\circ\text{C}$	-	25	150	mV
	$V_{IN} = 23\text{V}$, $1\text{mA} \leq I_O \leq 40\text{mA}$, $T_J = 25^\circ\text{C}$	-	15	75	
I_Q	$T_J = 25^\circ\text{C}$	-	-	6.5	mA
I_Q	$1\text{mA} \leq I_O \leq 40\text{mA}$	-	-	0.1	mA
	$-20\text{V} \leq V_{IN} \leq -30\text{V}$, $I_O = 40\text{mA}$	-	-	1.5	
V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$, $T_J = 25^\circ\text{C}$	-	90	-	μV
RR	$-18.5\text{V} \leq V_{IN} \leq -28.5\text{V}$, $f = 120\text{Hz}$	34	39	-	dB
V_D	$T_J = 25^\circ\text{C}$	-	1.7	-	V

CHARACTERISTICS CURVE

