Elektronische Bauelemente

S79Lxx Series

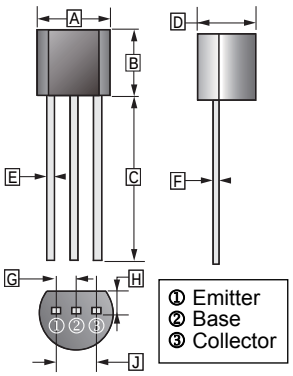
3-Terminal
Negative Voltage Regulator

RoHS Compliant Product
A suffix of "-C" specifies halogen or lead -free

DESCRIPTION

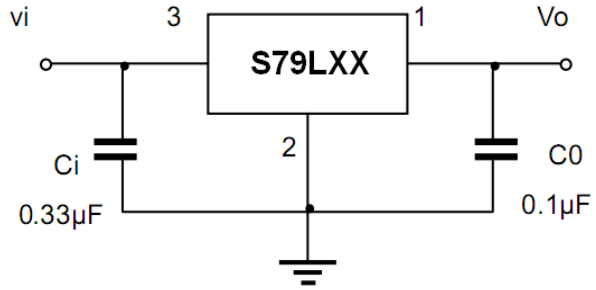
The S79L05 series of three-terminal negative regulators are available in the TO-92 package. They can provide local on card-regulation, eliminating the distribution problems associated with single point regulation; furthermore, having the same voltage options as the SM79L05 positive standard series, they 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



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

APPLICATION



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	5V~9V	V_{IN}	-30	V
	12V~15V		-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=0~125 °C, I_O=40mA, V_{IN}=-10V, C_{IN}=0.33μF, C_O=0.1μF unless otherwise specified)

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

S79L06 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, T_J =0~125 °C, I_O=40mA, V_{IN}=-11V, C_{IN}=0.33μF, C_O=0.1μF unless otherwise specified)

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

S79L08 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, T_J =0~125 °C, I_O=40mA, V_{IN}=-14V, C_{IN}=0.33μF, C_O=0.1μF unless otherwise specified)

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

S79L09 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, T_J =0~125 °C, I_O=40mA, V_{IN}=-16V, C_{IN}=0.33μF, C_O=0.1μF unless otherwise specified)

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

S79L12 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, T_J =0~125 °C, I_O=40mA, V_{IN}=-19V, C_{IN}=0.33μF, C_O=0.1μF unless otherwise specified)

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

S79L15-B ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, T_J =0~125 °C, I_O=40mA, V_{IN}=-23V, C_{IN}=0.33μF, C_O=0.1μF unless otherwise specified) (Note 1)

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

CHARACTERISTICS CURVE

