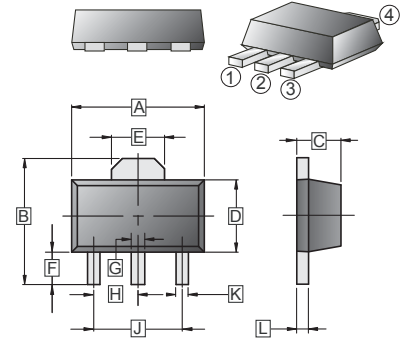


RoHS Compliant Product
A suffix of "-C" specifies halogen or lead -free

DESCRIPTION

The SM79L05 series of three-terminal negative regulators are available in the SOT-89 package. They can provide local on-card-regulation, eliminating the distribution problems associated with single point regulation; further-more, 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 SM79L05 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.

SOT-89

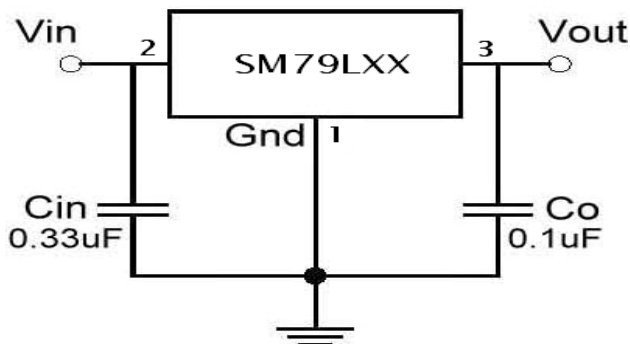


PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-89	1K	7 inch

REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.40	4.60	G	0.40	0.58
B	3.94	4.25	H	1.50	TYP
C	1.40	1.60	J	3.00	TYP
D	2.25	2.60	K	0.32	0.52
E	1.50	1.85	L	0.35	0.44
F	0.89	1.20			

TYPICAL APPLICATION



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 @ $T_A=25^\circ\text{C}$		P_D	500	mW

SM79L05 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, $T_J = 0 \sim 125^\circ\text{C}$, $I_O = 40\text{mA}$, $V_{IN} = -10\text{V}$, $C_{IN} = 0.33\mu\text{F}$, $C_O = 0.1\mu\text{F}$ unless otherwise specified) ¹

Symbol	Test Conditions	Min	Typ	Max	Unit
V_O	$V_{IN} = -10\text{V}$, $I_O = 40\text{mA}$, $T_J = 25^\circ\text{C}$	-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	
$V_O(\text{Line Regulation})$	$-7\text{V} \leq V_{IN} \leq -20\text{V}$, $T_J = 25^\circ\text{C}$	-	15	150	mV
	$-8\text{V} \leq V_{IN} \leq -20\text{V}$, $T_J = 25^\circ\text{C}$	-	12	100	
$V_O(\text{Load Regulation})$	$1\text{mA} \leq I_O \leq 100\text{mA}$, $T_J = 25^\circ\text{C}$	-	20	60	mV
	$1\text{mA} \leq I_O \leq 40\text{mA}$, $T_J = 25^\circ\text{C}$	-	10	30	
I_Q	$T_J = 25^\circ\text{C}$	-	-	6.0	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	$10\text{Hz} \leq f \leq 100\text{KHz}$	-	40	-	μV
RR	$-8\text{V} \leq V_{IN} \leq -18\text{V}$, $f = 120\text{Hz}$	41	49	-	dB
V_D	$T_J = 25^\circ\text{C}$	-	1.7	-	V

SM79L06 ELECTRICAL CHARACTERISTICS

(Refer to the test circuits, $T_J = 0 \sim 125^\circ\text{C}$, $I_O = 40\text{mA}$, $V_{IN} = -11\text{V}$, $C_{IN} = 0.33\mu\text{F}$, $C_O = 0.1\mu\text{F}$ unless otherwise specified) ¹

Symbol	Test Conditions	Min	Typ	Max	Unit
V_O	$V_{IN} = -11\text{V}$, $I_O = 40\text{mA}$, $T_J = 25^\circ\text{C}$	-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	
$V_O(\text{Line Regulation})$	$-8\text{V} \leq V_{IN} \leq -20\text{V}$, $T_J = 25^\circ\text{C}$	-	20	175	mV
	$-9\text{V} \leq V_{IN} \leq -20\text{V}$, $T_J = 25^\circ\text{C}$	-	15	125	
$V_O(\text{Load Regulation})$	$1\text{mA} \leq I_O \leq 100\text{mA}$, $T_J = 25^\circ\text{C}$	-	21	80	mV
	$1\text{mA} \leq I_O \leq 40\text{mA}$, $T_J = 25^\circ\text{C}$	-	11	40	
I_Q	$T_J = 25^\circ\text{C}$	-	3.9	6.0	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	$10\text{Hz} \leq f \leq 100\text{KHz}$	-	44	-	μV
RR	$-9\text{V} \leq V_{IN} \leq -19\text{V}$, $f = 120\text{Hz}$	40	48	-	dB
V_D	$T_J = 25^\circ\text{C}$	-	1.7	-	V

SM79L08 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) ¹

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	
$V_O(\text{Line Regulation})$	$-10.5\text{V} \leq V_{IN} \leq -23\text{V}$, $T_J = 25^\circ\text{C}$	-	42	200	mV
	$-11\text{V} \leq V_{IN} \leq -23\text{V}$, $T_J = 25^\circ\text{C}$	-	36	150	
$V_O(\text{Load Regulation})$	$1\text{mA} \leq I_O \leq 100\text{mA}$, $T_J = 25^\circ\text{C}$	-	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	$10\text{Hz} \leq f \leq 100\text{KHz}$	-	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

SM79L09 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) ¹

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	
$V_O(\text{Line Regulation})$	$-12\text{V} \leq V_{IN} \leq -24\text{V}$, $T_J = 25^\circ\text{C}$	-	45	175	mV
	$-13\text{V} \leq V_{IN} \leq -24\text{V}$, $T_J = 25^\circ\text{C}$	-	40	125	
$V_O(\text{Load Regulation})$	$1\text{mA} \leq I_O \leq 100\text{mA}$, $T_J = 25^\circ\text{C}$	-	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	6.0	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	$10\text{Hz} \leq f \leq 100\text{KHz}$	-	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

SM79L12 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) ¹

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	
$V_O(\text{Line Regulation})$	$-14.5\text{V} \leq V_{IN} \leq -27\text{V}$, $T_J = 25^\circ\text{C}$	-	50	250	mV
	$-16\text{V} \leq V_{IN} \leq -27\text{V}$, $T_J = 25^\circ\text{C}$	-	40	200	
$V_O(\text{Load Regulation})$	$1\text{mA} \leq I_O \leq 100\text{mA}$, $T_J = 25^\circ\text{C}$	-	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	$1\text{mA} \leq I_O \leq 40\text{mA}$	-	-	0.1	mA
	$-16\text{V} \leq V_{IN} \leq -27\text{V}$	-	-	1.5	
V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$	-	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

SM79L15 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) 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	
$V_O(\text{Line Regulation})$	$-17.5\text{V} \leq V_{IN} \leq -30\text{V}$, $I_O = 40\text{mA}$, $T_J = 25^\circ\text{C}$	-	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	
$V_O(\text{Load Regulation})$	$V_{IN} = -23\text{V}$, $1\text{mA} \leq I_O \leq 100\text{mA}$, $T_J = 25^\circ\text{C}$	-	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	$10\text{Hz} \leq f \leq 100\text{KHz}$	-	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

