



L79M00T Series

-5 to -12V 0.5A 3-Pin Voltage Regulators

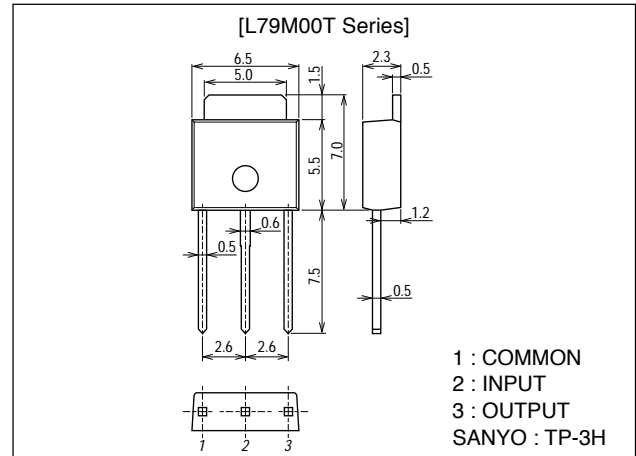
Features

- Output voltage
~~L79M05T : -5V L79M06T : -6V L79M08T : -8V~~
~~L79M09T : -9V L79M10T : -10V L79M12T : -12V~~
- 500mA output.
- Small-sized power package TP-3H permitting the equipment to be made compact.
- The allowable power dissipation can be increased by being surface-mounted on the board.
- Capable of being mounted in a variety of methods because of various lead forming versions available.
- On-chip protectors (overcurrent limiter, ASO protector, thermal protector).
- Can meet tape-used automatic mounting requirements.

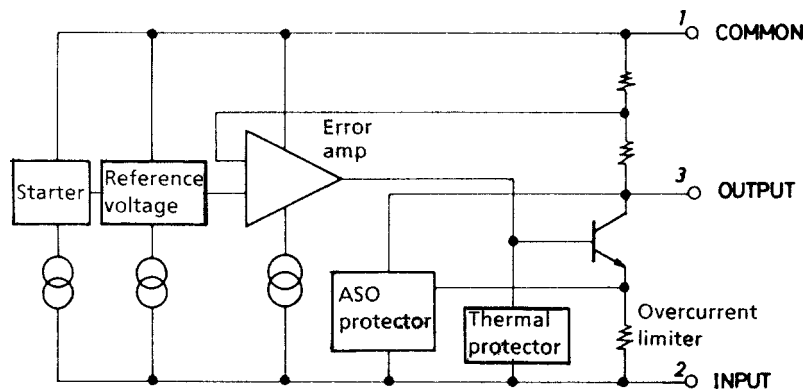
Package Dimensions

unit:mm

3110



Equivalent Circuit



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L79M00T Series

Specifications

[Common to L79M00T series]

Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum Supply Voltage	$V_{CC\ max}$	-5 to -12V output	-35	V
Allowable Power Dissipation	$P_d\ max$		1.0	W
Operating Temperature	T_{opr}		-30 to +80	$^\circ\text{C}$
Storage Temperature	T_{stg}		-40 to +150	$^\circ\text{C}$

[L79M05T]

Recommended Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Input Voltage	V_{IN}		-20 to -7.5	V
Output Current	I_{OUT}		5 to 500	mA

Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{IN} = -10\text{V}$, $I_{OUT} = 350\text{mA}$, $C_{IN} = 2\mu\text{F}$, $C_{OUT} = 1\mu\text{F}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Voltage	V_{OUT}	$T_j = 25^\circ\text{C}$	-5.2	-5.0	-4.8	V
Line Regulation	$\Delta V_o\ \text{LINE}$	$T_j = 25^\circ\text{C}$, $-25\text{V} \leq V_{IN} \leq -7\text{V}$		7.0	50	mV
		$T_j = 25^\circ\text{C}$, $-18\text{V} \leq V_{IN} \leq -8\text{V}$		3.0	30	mV
Load Regulation	$\Delta V_o\ \text{LOAD}$	$T_j = 25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 500\text{mA}$		10	100	mV
		$T_j = 25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$		5		mV
Output Voltage	V_{OUT}	$-25\text{V} \leq V_{IN} \leq -7\text{V}$, $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$	-5.25		-4.75	V
Current Dissipation	I_{CC}	$T_j = 25^\circ\text{C}$		1.0	2.5	mA
Current Dissipation Variation (Line)	$\Delta I_{CC}\ \text{LINE}$	$-25\text{V} \leq V_{IN} \leq -8\text{V}$			1.0	mA
Current Dissipation Variation (Load)	$\Delta I_{CC}\ \text{LOAD}$	$5\text{mA} \leq I_{OUT} \leq 350\text{mA}$			0.4	mA
Output Noise Voltage	V_{NO}	$10\text{Hz} \leq f \leq 100\text{kHz}$		125		μV
Ripple Rejection	Rrej	$f = 120\text{Hz}$, $-18\text{V} \leq V_{IN} \leq -8\text{V}$, $T_j = 25^\circ\text{C}$, $I_{OUT} = 100\text{mA}$	50			dB
		$f = 120\text{Hz}$, $-18\text{V} \leq V_{IN} \leq -8\text{V}$, $T_j = 25^\circ\text{C}$, $I_{OUT} = 300\text{mA}$	50	65		dB
Minimum Input-Output Voltage Drop	V_{DROP}	$T_j = 25^\circ\text{C}$, $I_{OUT} = 350\text{mA}$		1.1		V
Short Current	I_{OS}	$T_j = 25^\circ\text{C}$, $V_{IN} = -30\text{V}$		130		mA
Peak Output Current	I_{OP}			800		mA

[L79M06T]

Recommended Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Input Voltage	V_{IN}		-21 to -8.5	V
Output Current	I_{OUT}		5 to 500	mA

Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{IN} = -11\text{V}$, $I_{OUT} = 350\text{mA}$, $C_{IN} = 2\mu\text{F}$, $C_{OUT} = 1\mu\text{F}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Voltage	V_{OUT}	$T_j = 25^\circ\text{C}$	-6.25	-6.0	-5.75	V
Line Regulation	$\Delta V_o\ \text{LINE}$	$T_j = 25^\circ\text{C}$, $-25\text{V} \leq V_{IN} \leq -8\text{V}$		7.0	60	mV
		$T_j = 25^\circ\text{C}$, $-19\text{V} \leq V_{IN} \leq -9\text{V}$		3.0	40	mV
Load Regulation	$\Delta V_o\ \text{LOAD}$	$T_j = 25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 500\text{mA}$		10	120	mV
		$T_j = 25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$		5		mV
Output Voltage	V_{OUT}	$-25\text{V} \leq V_{IN} \leq -8\text{V}$, $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$	-6.3		-5.7	V
Current Dissipation	I_{CC}	$T_j = 25^\circ\text{C}$		1.0	2.5	mA
Current Dissipation Variation (Line)	$\Delta I_{CC}\ \text{LINE}$	$-25\text{V} \leq V_{IN} \leq -9\text{V}$			1.0	mA
Current Dissipation Variation (Load)	$\Delta I_{CC}\ \text{LOAD}$	$5\text{mA} \leq I_{OUT} \leq 350\text{mA}$			0.4	mA
Output Noise Voltage	V_{NO}	$10\text{Hz} \leq f \leq 100\text{kHz}$		150		μV
Ripple Rejection	Rrej	$f = 120\text{Hz}$, $-19\text{V} \leq V_{IN} \leq -9\text{V}$, $T_j = 25^\circ\text{C}$, $I_{OUT} = 100\text{mA}$	50			dB
		$f = 120\text{Hz}$, $-19\text{V} \leq V_{IN} \leq -9\text{V}$, $T_j = 25^\circ\text{C}$, $I_{OUT} = 300\text{mA}$	50	65		dB
Minimum Input-Output Voltage Drop	V_{DROP}	$T_j = 25^\circ\text{C}$, $I_{OUT} = 350\text{mA}$		1.1		V
Short Current	I_{OS}	$T_j = 25^\circ\text{C}$, $V_{IN} = -30\text{V}$		130		mA
Peak Output Current	I_{OP}			800		mA

L79M00T Series

[L79M08T]

Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Input Voltage	V _{IN}		-23 to -11	V
Output Current	I _{OUT}		5 to 500	mA

Operating Characteristics at Ta = 25°C, V_{IN} = -14V, I_{OUT} = 350mA, C_{IN} = 2μF, C_{OUT} = 1μF

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Voltage	V _{OUT}	T _j = 25°C	-8.3	-8.0	-7.7	V
Line Regulation	ΔV _O LINE	T _j = 25°C, -25V ≤ V _{IN} ≤ -10.5V		8.0	80	mV
		T _j = 25°C, -21V ≤ V _{IN} ≤ -11V		4.0	50	mV
Load Regulation	ΔV _O LOAD	T _j = 25°C, 5mA ≤ I _{OUT} ≤ 500mA		11	160	mV
		T _j = 25°C, 5mA ≤ I _{OUT} ≤ 350mA		6		mV
Output Voltage	V _{OUT}	-25V ≤ V _{IN} ≤ -10.5V, 5mA ≤ I _{OUT} ≤ 350mA	-8.4		-7.6	V
Current Dissipation	I _{CC}	T _j = 25°C		1.0	2.5	mA
Current Dissipation Variation (Line)	ΔI _{CC} LINE	-25V ≤ V _{IN} ≤ -10.5V			1.0	mA
Current Dissipation Variation (Load)	ΔI _{CC} LOAD	5mA ≤ I _{OUT} ≤ 350mA			0.4	mA
Output Noise Voltage	V _{NO}	10Hz ≤ f ≤ 100kHz		200		μV
Ripple Rejection	R _{rej}	f = 120Hz, -21.5V ≤ V _{IN} ≤ -11.5V, T _j = 25°C, I _{OUT} = 100mA	50			dB
		f = 120Hz, -21.5V ≤ V _{IN} ≤ -11.5V, T _j = 25°C, I _{OUT} = 300mA	50	64		dB
Minimum Input-Output Voltage Drop	V _{DROP}	T _j = 25°C, I _{OUT} = 350mA		1.1		V
Short Current	I _{OS}	T _j = 25°C, V _{IN} = -30V		130		mA
Peak Output Current	I _{OP}			800		mA

[L79M09T]

Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Input Voltage	V _{IN}		-25 to -12	V
Output Current	I _{OUT}		5 to 500	mA

Operating Characteristics at Ta = 25°C, V_{IN} = -16V, I_{OUT} = 350mA, C_{IN} = 2μF, C_{OUT} = 1μF

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Voltage	V _{OUT}	T _j = 25°C	-9.4	-9.0	-8.6	V
Line Regulation	ΔV _O LINE	T _j = 25°C, -25V ≤ V _{IN} ≤ -11.5V		8.0	80	mV
		T _j = 25°C, -20V ≤ V _{IN} ≤ -12V		4.0	50	mV
Load Regulation	ΔV _O LOAD	T _j = 25°C, 5mA ≤ I _{OUT} ≤ 500mA		12	200	mV
		T _j = 25°C, 5mA ≤ I _{OUT} ≤ 350mA		7		mV
Output Voltage	V _{OUT}	-25V ≤ V _{IN} ≤ -11.5V, 5mA ≤ I _{OUT} ≤ 350mA	-9.5		-8.5	V
Current Dissipation	I _{CC}	T _j = 25°C		1.0	2.5	mA
Current Dissipation Variation (Line)	ΔI _{CC} LINE	-25V ≤ V _{IN} ≤ -11.5V			1.0	mA
Current Dissipation Variation (Load)	ΔI _{CC} LOAD	5mA ≤ I _{OUT} ≤ 350mA			0.4	mA
Output Noise Voltage	V _{NO}	10Hz ≤ f ≤ 100kHz		225		μV
Ripple Rejection	R _{rej}	f = 120Hz, -22.5V ≤ V _{IN} ≤ -12.5V, T _j = 25°C, I _{OUT} = 100mA	50			dB
		f = 120Hz, -22.5V ≤ V _{IN} ≤ -12.5V, T _j = 25°C, I _{OUT} = 300mA	50	63		dB
Minimum Input-Output Voltage Drop	V _{DROP}	T _j = 25°C, I _{OUT} = 350mA		1.1		V
Short Current	I _{OS}	T _j = 25°C, V _{IN} = -30V		130		mA
Peak Output Current	I _{OP}			800		mA

L79M00T Series

[L79M10T]

Recommended Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Input Voltage	V_{IN}		-25 to -13	V
Output Current	I_{OUT}		5 to 500	mA

Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{IN} = -17\text{V}$, $I_{OUT} = 350\text{mA}$, $C_{IN} = 2\mu\text{F}$, $C_{OUT} = 1\mu\text{F}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Voltage	V_{OUT}	$T_j = 25^\circ\text{C}$	-10.4	-10	-9.6	V
Line Regulation	$\Delta V_o \text{ LINE}$	$T_j = 25^\circ\text{C}$, $-25\text{V} \leq V_{IN} \leq -12.5\text{V}$		9.0	80	mV
		$T_j = 25^\circ\text{C}$, $-22\text{V} \leq V_{IN} \leq -13\text{V}$		5.0	50	mV
Load Regulation	$\Delta V_o \text{ LOAD}$	$T_j = 25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 500\text{mA}$		12	200	mV
		$T_j = 25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$		7		mV
Output Voltage	V_{OUT}	$-25\text{V} \leq V_{IN} \leq -12.5\text{V}$, $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$	-10.5		-9.5	V
Current Dissipation	I_{CC}	$T_j = 25^\circ\text{C}$		1.0	2.5	mA
Current Dissipation Variation (Line)	$\Delta I_{CC} \text{ LINE}$	$-25\text{V} \leq V_{IN} \leq -12.5\text{V}$			1.0	mA
Current Dissipation Variation (Load)	$\Delta I_{CC} \text{ LOAD}$	$5\text{mA} \leq I_{OUT} \leq 350\text{mA}$			0.4	mA
Output Noise Voltage	V_{NO}	$10\text{Hz} \leq f \leq 100\text{kHz}$		250		μV
Ripple Rejection	Rrej	$f = 120\text{Hz}$, $-23.5\text{V} \leq V_{IN} \leq -13.5\text{V}$, $T_j = 25^\circ\text{C}$, $I_{OUT} = 100\text{mA}$	50			dB
		$f = 120\text{Hz}$, $-23.5\text{V} \leq V_{IN} \leq -13.5\text{V}$, $T_j = 25^\circ\text{C}$, $I_{OUT} = 300\text{mA}$	50	63		dB
Minimum Input-Output Voltage Drop	V_{DROP}	$T_j = 25^\circ\text{C}$, $I_{OUT} = 350\text{mA}$		1.1		V
Short Current	I_{OS}	$T_j = 25^\circ\text{C}$, $V_{IN} = -30\text{V}$		130		mA
Peak Output Current	I_{OP}			800		mA

[L79M12T]

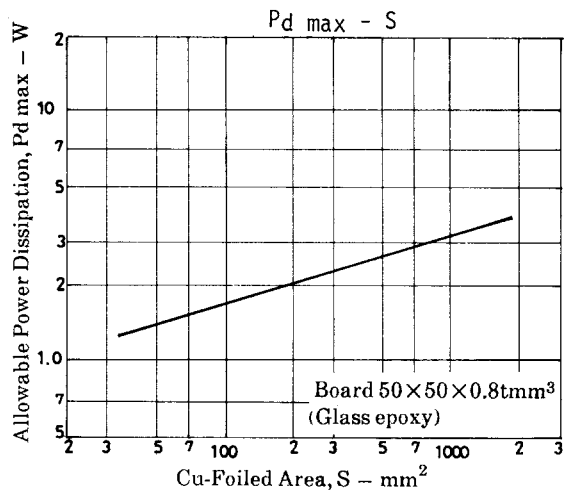
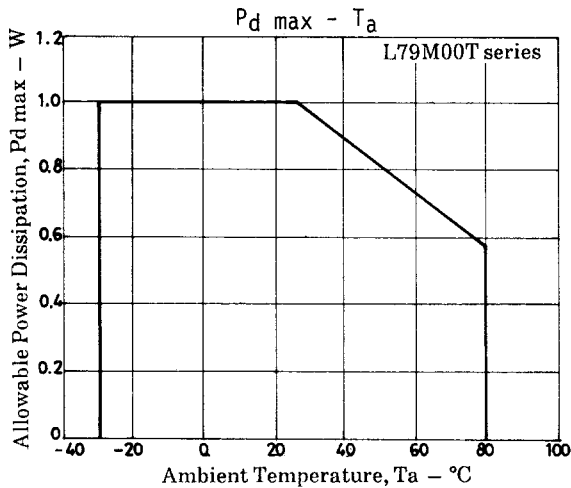
Recommended Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Input Voltage	V_{IN}		-25 to -15	V
Output Current	I_{OUT}		5 to 500	mA

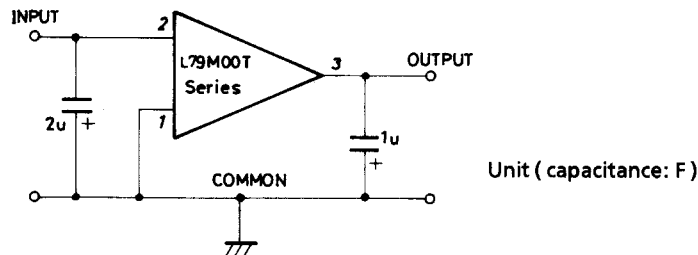
Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{IN} = -19\text{V}$, $I_{OUT} = 350\text{mA}$, $C_{IN} = 2\mu\text{F}$, $C_{OUT} = 1\mu\text{F}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Voltage	V_{OUT}	$T_j = 25^\circ\text{C}$	-12.5	-12	-11.5	V
Line Regulation	$\Delta V_o \text{ LINE}$	$T_j = 25^\circ\text{C}$, $-30\text{V} \leq V_{IN} \leq -14.5\text{V}$		9.0	80	mV
		$T_j = 25^\circ\text{C}$, $-25\text{V} \leq V_{IN} \leq -15\text{V}$		5.0	50	mV
Load Regulation	$\Delta V_o \text{ LOAD}$	$T_j = 25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 500\text{mA}$		9	240	mV
		$T_j = 25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$		6		mV
Output Voltage	V_{OUT}	$-30\text{V} \leq V_{IN} \leq -14.5\text{V}$, $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$	-12.6		-11.4	V
Current Dissipation	I_{CC}	$T_j = 25^\circ\text{C}$		1.6	3.5	mA
Current Dissipation Variation (Line)	$\Delta I_{CC} \text{ LINE}$	$-30\text{V} \leq V_{IN} \leq -14.5\text{V}$			1.0	mA
Current Dissipation Variation (Load)	$\Delta I_{CC} \text{ LOAD}$	$5\text{mA} \leq I_{OUT} \leq 350\text{mA}$			0.4	mA
Output Noise Voltage	V_{NO}	$10\text{Hz} \leq f \leq 100\text{kHz}$		300		μV
Ripple Rejection	Rrej	$f = 120\text{Hz}$, $-25\text{V} \leq V_{IN} \leq -15\text{V}$, $T_j = 25^\circ\text{C}$, $I_{OUT} = 100\text{mA}$	50			dB
		$f = 120\text{Hz}$, $-25\text{V} \leq V_{IN} \leq -15\text{V}$, $T_j = 25^\circ\text{C}$, $I_{OUT} = 300\text{mA}$	50	72		dB
Minimum Input-Output Voltage Drop	V_{DROP}	$T_j = 25^\circ\text{C}$, $I_{OUT} = 350\text{mA}$		1.1		V
Short Current	I_{OS}	$T_j = 25^\circ\text{C}$, $V_{IN} = -30\text{V}$		130		mA
Peak Output Current	I_{OP}			800		mA

L79M00T Series



Specified Test Circuit (Common to L79M00T series)



Note) V_{IN} max must be in the range specified above, with regulation, etc. considered.

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