

No.2605B

# 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.

[Common to L79M00T series]

**Maximum Ratings at Ta = 25°C**

			unit
Maximum Supply Voltage	V <sub>CC</sub> max	-5 to -12V output	-35 V
Allowable Power Dissipation	P <sub>d</sub> max		1.0 W
Operating Temperature	T <sub>opr</sub>		-30 to +80 °C
Storage Temperature	T <sub>stg</sub>		-40 to +150 °C

[L79M05T]

**Recommended Operating Conditions at Ta = 25°C**

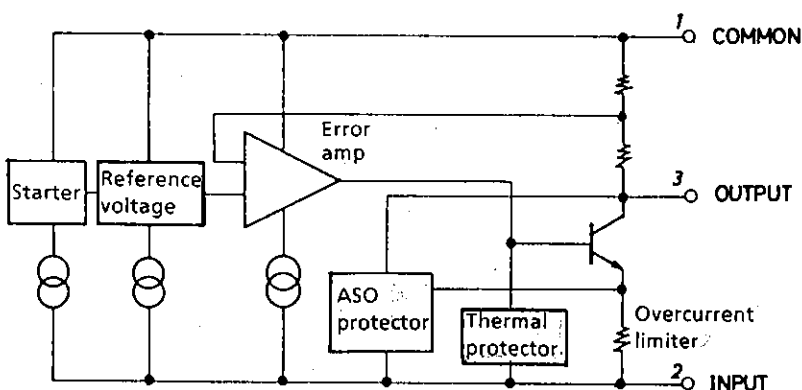
			unit
Input Voltage	V <sub>IN</sub>	-20 to -7.5	V
Output Current	I <sub>OUT</sub>	5 to 500	mA

**Operating Characteristics at Ta = 25°C, V<sub>IN</sub> = -10V, I<sub>OUT</sub> = 350mA, C<sub>IN</sub> = 2μF, C<sub>OUT</sub> = 1μF**

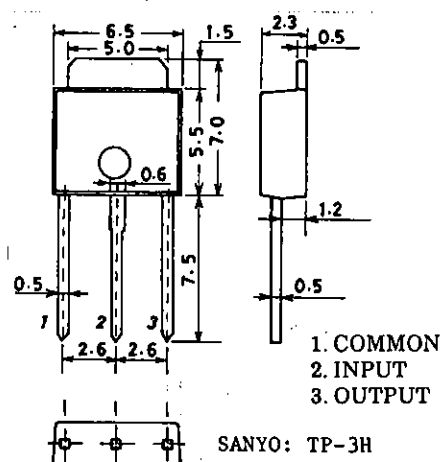
			min	typ	max	unit
Output Voltage	V <sub>OUT</sub>	T <sub>j</sub> = 25°C	-5.2	-5.0	-4.8	V
Line Regulation	ΔV <sub>oline</sub>	T <sub>j</sub> = 25°C, -25V ≤ V <sub>IN</sub> ≤ -7V		7.0	50	mV
		T <sub>j</sub> = 25°C, -18V ≤ V <sub>IN</sub> ≤ -8V		3.0	30	mV
Load Regulation	ΔV <sub>oload</sub>	T <sub>j</sub> = 25°C, 5mA ≤ I <sub>OUT</sub> ≤ 500mA		10	100	mV
		T <sub>j</sub> = 25°C, 5mA ≤ I <sub>OUT</sub> ≤ 350mA		5		mV

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**Equivalent Circuit**



**Package Dimensions 3110-S3HIC (unit: mm)**



## L79M00T Series

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			min	typ	max	unit
Output Voltage	$V_{OUT}$	$-25V \leq V_{IN} \leq -7V,$ $5mA \leq I_{OUT} \leq 350mA$	-5.25		-4.75	V
Current Dissipation	$I_{CC}$	$T_j = 25^\circ C$		1.0	2.5	mA
Current Dissipation Variation (Line)	$\Delta I_{CCline}$	$-25V \leq V_{IN} \leq -8V$			1.0	mA
Current Dissipation Variation (Load)	$\Delta I_{CCload}$	$5mA \leq I_{OUT} \leq 350mA$			0.4	mA
Output Noise Voltage	$V_{NO}$	$10Hz \leq f \leq 100kHz$		125		$\mu V$
Ripple Rejection	$R_{rej}$	$f = 120Hz$ $-18V \leq V_{IN} \leq -8V$ $T_j = 25^\circ C$	$I_{OUT} = 100mA$ 50 $I_{OUT} = 300mA$ 50		65	dB dB
Minimum Input-Output Voltage Drop	$V_{drop}$	$T_j = 25^\circ C, I_{OUT} = 350mA$		1.1		V
Short Current	$I_{OS}$	$T_j = 25^\circ C, V_{IN} = -30V$		130		mA
Peak Output Current	$I_{op}$			800		mA

### [L79M06T]

**Recommended Operating Conditions at  $T_a = 25^\circ C$**

				unit
Input Voltage	$V_{IN}$		-21 to -8.5	V
Output Current	$I_{OUT}$		5 to 500	mA

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

			min	typ	max	unit
Output Voltage	$V_{OUT}$	$T_j = 25^\circ C$	-6.25	-6.0	-5.75	V
Line Regulation	$\Delta V_{oline}$	$T_j = 25^\circ C, -25V \leq V_{IN} \leq -8V$		7.0	60	mV
		$T_j = 25^\circ C, -19V \leq V_{IN} \leq -9V$		3.0	40	mV
Load Regulation	$\Delta V_{oload}$	$T_j = 25^\circ C, 5mA \leq I_{OUT} \leq 500mA$		10	120	mV
		$T_j = 25^\circ C, 5mA \leq I_{OUT} \leq 350mA$		5		mV
Output Voltage	$V_{OUT}$	$-25V \leq V_{IN} \leq -8V,$ $5mA \leq I_{OUT} \leq 350mA$	-6.3		-5.7	V
Current Dissipation	$I_{CC}$	$T_j = 25^\circ C$		1.0	2.5	mA
Current Dissipation Variation (Line)	$\Delta I_{CCline}$	$-25V \leq V_{IN} \leq -9V$			1.0	mA
Current Dissipation Variation (Load)	$\Delta I_{CCload}$	$5mA \leq I_{OUT} \leq 350mA$			0.4	mA
Output Noise Voltage	$V_{NO}$	$10Hz \leq f \leq 100kHz$		150		$\mu V$
Ripple Rejection	$R_{rej}$	$f = 120Hz$ $-19V \leq V_{IN} \leq -9V$ $T_j = 25^\circ C$	$I_{OUT} = 100mA$ 50 $I_{OUT} = 300mA$ 50		65	dB dB
Minimum Input-Output Voltage Drop	$V_{drop}$	$T_j = 25^\circ C, I_{OUT} = 350mA$		1.1		V
Short Current	$I_{OS}$	$T_j = 25^\circ C, V_{IN} = -30V$		130		mA
Peak Output Current	$I_{op}$			800		mA

### [L79M08T]

**Recommended Operating Conditions at  $T_a = 25^\circ C$**

				unit
Input Voltage	$V_{IN}$		-23 to -11	V
Output Current	$I_{OUT}$		5 to 500	mA

## L79M00T Series

**Operating Characteristics at  $T_a = 25^\circ\text{C}$ ,  $V_{IN} = -14\text{V}$ ,  $I_{OUT} = 350\text{mA}$ ,  $C_{IN} = 2\mu\text{F}$ ,  $C_{OUT} = 1\mu\text{F}$**

			min	typ	max	unit
Output Voltage	$V_{OUT}$	$T_j = 25^\circ\text{C}$	-8.3	-8.0	-7.7	V
Line Regulation	$\Delta V_{oline}$	$T_j = 25^\circ\text{C}$ , $-25\text{V} \leq V_{IN} \leq -10.5\text{V}$		8.0	80	mV
Load Regulation	$\Delta V_{oload}$	$T_j = 25^\circ\text{C}$ , $-21\text{V} \leq V_{IN} \leq -11\text{V}$		4.0	50	mV
		$T_j = 25^\circ\text{C}$ , $5\text{mA} \leq I_{OUT} \leq 500\text{mA}$		11	160	mV
Output Voltage	$V_{OUT}$	$T_j = 25^\circ\text{C}$ , $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$	-8.4		-7.6	V
Current Dissipation	$I_{CC}$	$T_j = 25^\circ\text{C}$		1.0	2.5	mA
Current Dissipation Variation (Line)	$\Delta I_{CCline}$	$-25\text{V} \leq V_{IN} \leq -10.5\text{V}$			1.0	mA
Current Dissipation Variation (Load)	$\Delta I_{CCload}$	$5\text{mA} \leq I_{OUT} \leq 350\text{mA}$			0.4	mA
Output Noise Voltage	$V_{NO}$	$10\text{Hz} \leq f \leq 100\text{kHz}$		200		$\mu\text{V}$
Ripple Rejection	$R_{rej}$	$f = 120\text{Hz}$		50		dB
		$-21.5\text{V} \leq V_{IN} \leq -11.5\text{V}$	$I_{OUT} = 100\text{mA}$	50	64	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

[L79M09T]

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

				unit
Input Voltage	$V_{IN}$		-25 to -12	V
Output Current	$I_{OUT}$		5 to 500	mA

**Operating Characteristics at  $T_a = 25^\circ\text{C}$ ,  $V_{IN} = -16\text{V}$ ,  $I_{OUT} = 350\text{mA}$ ,  $C_{IN} = 2\mu\text{F}$ ,  $C_{OUT} = 1\mu\text{F}$**

			min	typ	max	unit
Output Voltage	$V_{OUT}$	$T_j = 25^\circ\text{C}$	-9.4	-9.0	-8.6	V
Line Regulation	$\Delta V_{oline}$	$T_j = 25^\circ\text{C}$ , $-25\text{V} \leq V_{IN} \leq -11.5\text{V}$		8.0	80	mV
Load Regulation	$\Delta V_{oload}$	$T_j = 25^\circ\text{C}$ , $-20\text{V} \leq V_{IN} \leq -12\text{V}$		4.0	50	mV
		$T_j = 25^\circ\text{C}$ , $5\text{mA} \leq I_{OUT} \leq 500\text{mA}$		12	200	mV
Output Voltage	$V_{OUT}$	$T_j = 25^\circ\text{C}$ , $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$	-9.5		-8.5	V
Current Dissipation	$I_{CC}$	$T_j = 25^\circ\text{C}$		1.0	2.5	mA
Current Dissipation Variation (Line)	$\Delta I_{CCline}$	$-25\text{V} \leq V_{IN} \leq -11.5\text{V}$			1.0	mA
Current Dissipation Variation (Load)	$\Delta I_{CCload}$	$5\text{mA} \leq I_{OUT} \leq 350\text{mA}$			0.4	mA
Output Noise Voltage	$V_{NO}$	$10\text{Hz} \leq f \leq 100\text{kHz}$		225		$\mu\text{V}$
Ripple Rejection	$R_{rej}$	$f = 120\text{Hz}$		50		dB
		$-22.5\text{V} \leq V_{IN} \leq -12.5\text{V}$	$I_{OUT} = 100\text{mA}$	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

## L79M00T Series

### [L79M10T]

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

Parameter	Symbol	Value	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	min	typ	max	unit
Output Voltage	$V_{OUT}$	$T_j = 25^\circ\text{C}$	-10.4	-10	-9.6	V
Line Regulation	$\Delta V_{oline}$	$T_j = 25^\circ\text{C}, -25\text{V} \leq V_{IN} \leq -12.5\text{V}$		9.0	80	mV
Load Regulation	$\Delta V_{oload}$	$T_j = 25^\circ\text{C}, -22\text{V} \leq V_{IN} \leq -13\text{V}$		5.0	50	mV
		$T_j = 25^\circ\text{C}, 5\text{mA} \leq I_{OUT} \leq 500\text{mA}$		12	200	mV
Output Voltage	$V_{OUT}$	$T_j = 25^\circ\text{C}, 5\text{mA} \leq I_{OUT} \leq 350\text{mA}$		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)	$\Delta I_{CCline}$	$-25\text{V} \leq V_{IN} \leq -12.5\text{V}$			1.0	mA
Current Dissipation Variation (Load)	$\Delta I_{CCload}$	$5\text{mA} \leq I_{OUT} \leq 350\text{mA}$			0.4	mA
Output Noise Voltage	$V_{NO}$	$10\text{Hz} \leq f \leq 100\text{kHz}$		250		$\mu\text{V}$
Ripple Rejection	$R_{rej}$	$f = 120\text{Hz}$		50		dB
		$-23.5\text{V} \leq V_{IN} \leq -13.5\text{V}$	$I_{OUT} = 100\text{mA}$	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]

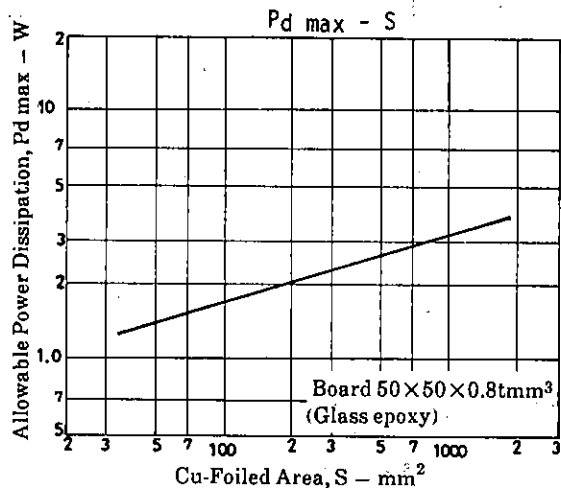
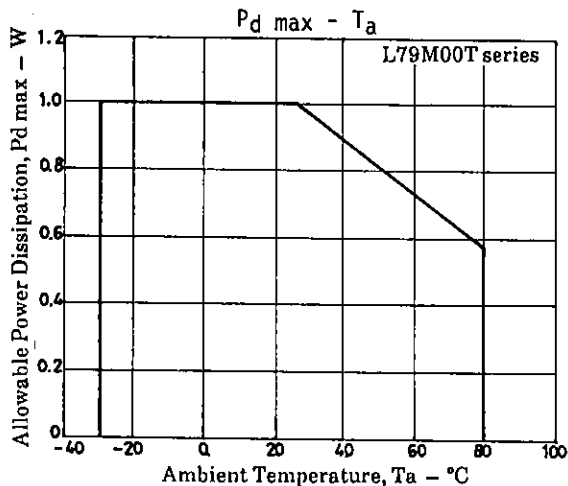
#### Recommended Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Value	unit
Input Voltage	$V_{IN}$	-25 to -15	V
Output Current	$I_{OUT}$	5 to 500	mA

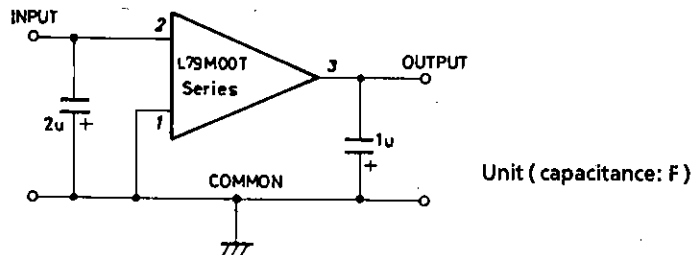
#### Operating Characteristics at $T_a = 25^\circ\text{C}, V_{IN} = -19\text{V}, I_{OUT} = 350\text{mA}, C_{IN} = 2\mu\text{F}, C_{OUT} = 1\mu\text{F}$

Parameter	Symbol	Conditions	min	typ	max	unit
Output Voltage	$V_{OUT}$	$T_j = 25^\circ\text{C}$	-12.5	-12	-11.5	V
Line Regulation	$\Delta V_{oline}$	$T_j = 25^\circ\text{C}, -30\text{V} \leq V_{IN} \leq -14.5\text{V}$		9.0	80	mV
Load Regulation	$\Delta V_{oload}$	$T_j = 25^\circ\text{C}, -25\text{V} \leq V_{IN} \leq -15\text{V}$		5.0	50	mV
		$T_j = 25^\circ\text{C}, 5\text{mA} \leq I_{OUT} \leq 500\text{mA}$		9	240	mV
Output Voltage	$V_{OUT}$	$T_j = 25^\circ\text{C}, 5\text{mA} \leq I_{OUT} \leq 350\text{mA}$		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)	$\Delta I_{CCline}$	$-30\text{V} \leq V_{IN} \leq -14.5\text{V}$			1.0	mA
Current Dissipation Variation (Load)	$\Delta I_{CCload}$	$5\text{mA} \leq I_{OUT} \leq 350\text{mA}$			0.4	mA
Output Noise Voltage	$V_{NO}$	$10\text{Hz} \leq f \leq 100\text{kHz}$		300		$\mu\text{V}$
Ripple Rejection	$R_{rej}$	$f = 120\text{Hz}$		50		dB
		$-25\text{V} \leq V_{IN} \leq -15\text{V}$	$I_{OUT} = 100\text{mA}$	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)  $V_{IN \text{ max}}$  must be in the range specified above, with regulation, etc. considered.

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