T-58-11-13

L79M00T Series

3110

Monolithic Linear IC

−5 to −24V 0.5A 3-Pin Voltage Regulator

E2605A

TENTATIVE

Features

- Output Voltage L79M05T:-5V L79M06T:-6V L79M08T:-8V L79M09T:-9V L79M10T:-10V L79M12T:-12V L79M15T:-15V L79M20T:-20V L79M24T:-24V
- 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]

Absolute Maximum Ratings at Ta=25°C

				unit
Maximum Supply Voltage	V_{CC} max	-5 to -15V output	-35	V
		-20 to -24V output	-40	V
Allowable Power Dissipation	Pd max		1.0	W
Operating Temperature	Topg		-30 to +80	°C
Storage Temperature	Tstg		-40 to +150	°C

[L79M05T]

Recommended Operating Conditions at Ta=25°C

			unit
Input Voltage	V_{IN}	-20 to -7.5	V
Output Voltage	I_{OUT}	5 to 500	mA

Operating Characteristics at Ta=25°C, V_{IN}=-10V, I_{OUT}=350mA, C_{IN}=2uF, C_{OUT}=1uF

			min	typ	max	unit
Output Voltage	V_{OUT}	Tj=25°C	-5.2	-5.0	-4.8	V
Line Regulation	ΔV_{oline}	Tj=25°C, -25V≦V_{IN}≦-7V		7.0	50	mV
		Tj=25°C, -18V≦V_{IN}≦-8V		3.0	30	mV
Load Regulation	ΔV_{oload}	Tj=25°C, 5mA≦I_{OUT}≦500mA		10	100	mV
		Tj=25°C, 5mA≦I_{OUT}≦350mA		5		mV

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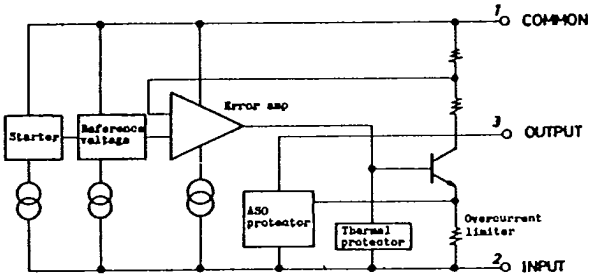
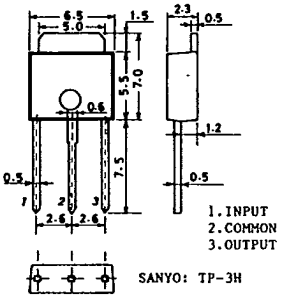
Equivalent Circuit Diagram



Case Outline 3110-S3HIC
(unit:mm)



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

[L79M06T]

Recommended Operating Conditions at Ta=25°C

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

Operating Characteristics at Ta=25°C, V_{IN}=-11V, I_{OUT}=350mA, C_{IN}=2uF, C_{OUT}=1uF

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

[L79M08T]

Recommended Operating Conditions at Ta=25°C

			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}=2uF, C_{OUT}=1uF

			min	typ	max	unit
Output Voltage	V_{OUT}	Tj=25°C	-8.3	-8.0	-7.7	V
Line Regulation	ΔV_{oline}	Tj=25°C, -25V≦V_{IN}≦-10.5V		8.0	80	mV
		Tj=25°C, -21V≦V_{IN}≦-11V		4.0	50	mV
Load Regulation	ΔV_{oload}	Tj=25°C, 5mA≦I_{OUT}≦500mA		11	160	mV
		Tj=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}	Tj=25°C		1.0	2.5	mA
Current Dissipation Variation (Line)	ΔI_{CCline}	-25V≦V_{IN}≦-10.5V			1.0	mA
Current Dissipation Variation (Load)	ΔI_{CCload}	5mA≦I_{OUT}≦350mA			0.4	mA
Output Noise Voltage	V_{NO}	10Hz≦f≦100kHz		200		uV
Ripple Rejection	R_{rej}	f=120Hz, -21.5V≦V_{IN}≦-11.5V, Tj=25°C | I_{OUT}=100mA	50			dB
		| I_{OUT}=300mA	50	64		dB
Minimum Input-Output Voltage Drop	V_{drop}	Tj=25°C, I_{OUT}=350mA		1.1		V
Short Current	I_{OS}	Tj=25°C, V_{IN}=-30V		130		mA
Peak Output Current	I_{op}			800		mA

[L79M09T]

Recommended Operating Conditions at Ta=25°C

			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}=2uF, C_{OUT}=1uF

			min	typ	max	unit
Output Voltage	V_{OUT}	Tj=25°C	-9.4	-9.0	-8.6	V
Line Regulation	ΔV_{oline}	Tj=25°C, -25V≦V_{IN}≦-11.5V		8.0	80	mV
		Tj=25°C, -20V≦V_{IN}≦-12V		4.0	50	mV
Load Regulation	ΔV_{oload}	Tj=25°C, 5mA≦I_{OUT}≦500mA		12	200	mV
		Tj=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}	Tj=25°C		1.0	2.5	mA
Current Dissipation Variation (Line)	ΔI_{CCline}	-25V≦V_{IN}≦-11.5V			1.0	mA
Current Dissipation Variation (Load)	ΔI_{CCload}	5mA≦I_{OUT}≦350mA			0.4	mA
Output Noise Voltage	V_{NO}	10Hz≦f≦100kHz		225		uV
Ripple Rejection	R_{rej}	f=120Hz, -22.5V≦V_{IN}≦-12.5V, Tj=25°C | I_{OUT}=100mA	50			dB
		| I_{OUT}=300mA	50	63		dB
Minimum Input-Output Voltage Drop	V_{drop}	Tj=25°C, I_{OUT}=350mA		1.1		V
Short Current	I_{OS}	Tj=25°C, V_{IN}=-30V		130		mA
Peak Output Current	I_{op}			800		mA

[L79M10T]

Recommended Operating Conditions at Ta=25°C

			unit
Input Voltage	V_{IN}	-25 to -13	V
Output Current	I_{OUT}	5 to 500	mA

Operating Characteristics at Ta=25°C, V_{IN}=-17V, I_{OUT}=350mA, C_{IN}=2uF, C_{OUT}=1uF

			min	typ	max	unit
Output Voltage	V_{OUT}	Tj=25°C	-10.4	-10	-9.6	V
Line Regulation	ΔV_{oline}	Tj=25°C, -25V≦V_{IN}≦-12.5V		9.0	80	mV
		Tj=25°C, -22V≦V_{IN}≦-13V		5.0	50	mV
Load Regulation	ΔV_{oload}	Tj=25°C, 5mA≦I_{OUT}≦500mA		12	200	mV
		Tj=25°C, 5mA≦I_{OUT}≦350mA		7		mV
Output Voltage	V_{OUT}	-25V≦V_{IN}≦-12.5V, 5mA≦I_{OUT}≦350mA	-10.5		-9.5	V
Current Dissipation	I_{CC}	Tj=25°C		1.0	2.5	mA
Current Dissipation Variation (Line)	ΔI_{CCline}	-25V≦V_{IN}≦-12.5V			1.0	mA
Current Dissipation Variation (Load)	ΔI_{CCload}	5mA≦I_{OUT}≦350mA			0.4	mA
Output Noise Voltage	V_{NO}	10Hz≦f≦100kHz		250		uV
Ripple Rejection	R_{rej}	f=120Hz, -23.5V≦V_{IN}≦-13.5V, Tj=25°C, I_{OUT}=100mA	50			dB
		f=120Hz, -23.5V≦V_{IN}≦-13.5V, Tj=25°C, I_{OUT}=300mA	50	63		dB
Minimum Input-Output Voltage Drop	V_{drop}	Tj=25°C, I_{OUT}=350mA		1.1		V
Short Current	I_{OS}	Tj=25°C, V_{IN}=-30V		130		mA
Peak Output Current	I_{op}			800		mA

[L79M12T]

Recommended Operating Conditions at Ta=25°C

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

Operating Characteristics at Ta=25°C, V_{IN}=-19V, I_{OUT}=350mA, C_{IN}=2uF, C_{OUT}=1uF

			min	typ	max	unit
Output Voltage	V_{OUT}	Tj=25°C	-12.5	-12	-11.5	V
Line Regulation	ΔV_{oline}	Tj=25°C, -30V≦V_{IN}≦-14.5V		9.0	80	mV
		Tj=25°C, -25V≦V_{IN}≦-15V		5.0	50	mV
Load Regulation	ΔV_{oload}	Tj=25°C, 5mA≦I_{OUT}≦500mA		9	240	mV
		Tj=25°C, 5mA≦I_{OUT}≦350mA		6		mV
Output Voltage	V_{OUT}	-30V≦V_{IN}≦-14.5V, 5mA≦I_{OUT}≦350mA	-12.6		-11.4	V
Current Dissipation	I_{CC}	Tj=25°C		1.6	3.5	mA
Current Dissipation Variation (Line)	ΔI_{CCline}	-30V≦V_{IN}≦-14.5V			1.0	mA
Current Dissipation Variation (Load)	ΔI_{CCload}	5mA≦I_{OUT}≦350mA			0.4	mA
Output Noise Voltage	V_{NO}	10Hz≦f≦100kHz		300		uV
Ripple Rejection	R_{rej}	f=120Hz, -25V≦V_{IN}≦-15V, Tj=25°C, I_{OUT}=100mA	50			dB
		f=120Hz, -25V≦V_{IN}≦-15V, Tj=25°C, I_{OUT}=300mA	50	72		dB
Minimum Input-Output Voltage Drop	V_{drop}	Tj=25°C, I_{OUT}=350mA		1.1		V
Short Current	I_{OS}	Tj=25°C, V_{IN}=-30V		130		mA
Peak Output Current	I_{op}			800		mA

[L79M15T]

Recommended Operating Conditions at Ta=25°C

			unit
Input Voltage	V_{IN}	-30 to -18	V
Output Current	I_{OUT}	5 to 500	mA

Operating Characteristics at Ta=25°C, V_{IN}=-23V, I_{OUT}=350mA, C_{IN}=2uF, C_{OUT}=1uF

				min	typ	max	unit
Output Voltage	V_{OUT}	Tj=25°C		-15.6	-15	-14.4	V
Line Regulation	ΔV_{oline}	Tj=25°C, -30V≦V_{IN}≦-17.5V			9.0	80	mV
		Tj=25°C, -28V≦V_{IN}≦-18V			7.0	50	mV
Load Regulation	ΔV_{oload}	Tj=25°C, 5mA≦I_{OUT}≦500mA			9	240	mV
		Tj=25°C, 5mA≦I_{OUT}≦350mA			6		mV
Output Voltage	V_{OUT}	-30V≦V_{IN}≦-17.5V, 5mA≦I_{OUT}≦350mA		-15.75		-14.25	V
Current Dissipation	I_{CC}	Tj=25°C			1.6	3.5	mA
Current Dissipation Variation (Line)	ΔI_{CCline}	-30V≦V_{IN}≦-17.5V				1.0	mA
Current Dissipation Variation (Load)	ΔI_{CCload}	5mA≦I_{OUT}≦350mA				0.4	mA
Output Noise Voltage	V_{NO}	10Hz≦f≦100kHz			375		uV
Ripple Rejection	R_{rej}	f=120Hz, -28.5V≦V_{IN}≦-18.5V, Tj=25°C	I_{OUT}=100mA 50				dB
			I_{OUT}=300mA 50		70		dB
Minimum Input-Output Voltage Drop	V_{drop}	Tj=25°C, I_{OUT}=350mA			1.1		V
Short Current	I_{OS}	Tj=25°C, V_{IN}=-30V			130		mA
Peak Output Current	I_{op}				800		mA

[L79M20T]

Recommended Operating Conditions at Ta=25°C

			unit
Input Voltage	V_{IN}	-35 to -23	V
Output Current	I_{OUT}	5 to 500	mA

Operating Characteristics at Ta=25°C, V_{IN}=-29V, I_{OUT}=350mA, C_{IN}=2uF, C_{OUT}=1uF

				min	typ	max	unit
Output Voltage	V_{OUT}	Tj=25°C		-20.8	-20	-19.2	V
Line Regulation	ΔV_{oline}	Tj=25°C, -35V≦V_{IN}≦-23V			12	80	mV
		Tj=25°C, -34V≦V_{IN}≦-24V			10	70	mV
Load Regulation	ΔV_{oload}	Tj=25°C, 5mA≦I_{OUT}≦500mA			10	300	mV
		Tj=25°C, 5mA≦I_{OUT}≦350mA			7		mV
Output Voltage	V_{OUT}	-35V≦V_{IN}≦-23V, 5mA≦I_{OUT}≦350mA		-21		-19	V
Current Dissipation	I_{CC}	Tj=25°C			1.6	3.5	mA
Current Dissipation Variation (Line)	ΔI_{CCline}	-35V≦V_{IN}≦-23V				1.0	mA
Current Dissipation Variation (Load)	ΔI_{CCload}	5mA≦I_{OUT}≦350mA				0.4	mA
Output Noise Voltage	V_{NO}	10Hz≦f≦100kHz			500		uV
Ripple Rejection	R_{rej}	f=120Hz, -34V≦V_{IN}≦-24V, Tj=25°C	I_{OUT}=100mA 50				dB
			I_{OUT}=300mA 50		67		dB
Minimum Input-Output Voltage Drop	V_{drop}	Tj=25°C, I_{OUT}=350mA			1.1		V
Short Current	I_{OS}	Tj=25°C, V_{IN}=-30V			130		mA
Peak Output Current	I_{op}				800		mA

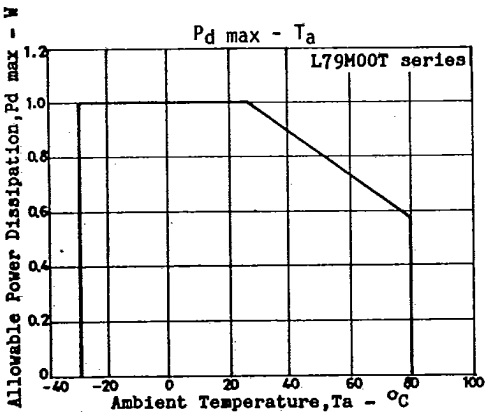
[L79M24T]

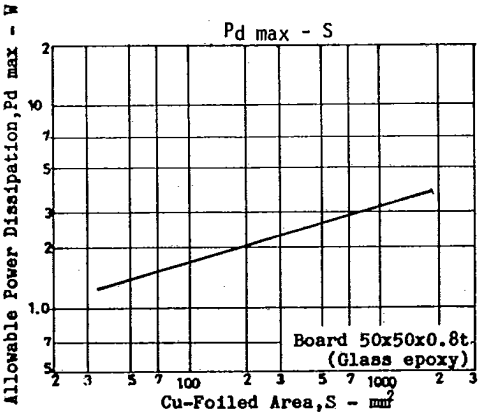
Recommended Operating Conditions at Ta=25°C

			unit
Input Voltage	V_{IN}	-35 to -27	V
Output Current	I_{OUT}	5 to 500	mA

Operating Characteristics at Ta=25°C, V_{IN}=-33V, I_{OUT}=350mA, C_{IN}=2uF, C_{OUT}=1uF

			min	typ	max	unit
Output Voltage	V_{OUT}	Tj=25°C	-25	-24	-23	V
Line Regulation	ΔV_{oline}	Tj=25°C, -38V≦V_{IN}≦-27V		12	80	mV
		Tj=25°C, -38V≦V_{IN}≦-28V		12	70	mV
Load Regulation	ΔV_{oload}	Tj=25°C, 5mA≦I_{OUT}≦500mA		10	300	mV
		Tj=25°C, 5mA≦I_{OUT}≦350mA		7		mV
Output Voltage	V_{OUT}	-38V≦V_{IN}≦-27V, 5mA≦I_{OUT}≦350mA	-25.2		-22.8	V
Current Dissipation	I_{CC}	Tj=25°C		1.6	3.5	mA
Current Dissipation Variation (Line)	ΔI_{CCline}	-38V≦V_{IN}≦-27V			1.0	mA
Current Dissipation Variation (Load)	ΔI_{CCload}	5mA≦I_{OUT}≦350mA			0.4	mA
Output Noise Voltage	V_{NO}	10Hz≦f≦100kHz		600		uV
Ripple Rejection	R_{rej}	f=120Hz, -38V≦V_{IN}≦-28V, Tj=25°C, I_{OUT}=100mA	50			dB
		f=120Hz, -38V≦V_{IN}≦-28V, Tj=25°C, I_{OUT}=300mA	50	65		dB
Minimum Input-Output Voltage Drop	V_{drop}	Tj=25°C, I_{OUT}=350mA		1.1		V
Short Current	I_{OS}	Tj=25°C, V_{IN}=-30V		130		mA
Peak Output Current	I_{op}			800		mA





Specified Test Circuit (Common to L79M00T series)