Ordering number:ENN2605B

Monolithic Linear IC

L79M00T Series

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

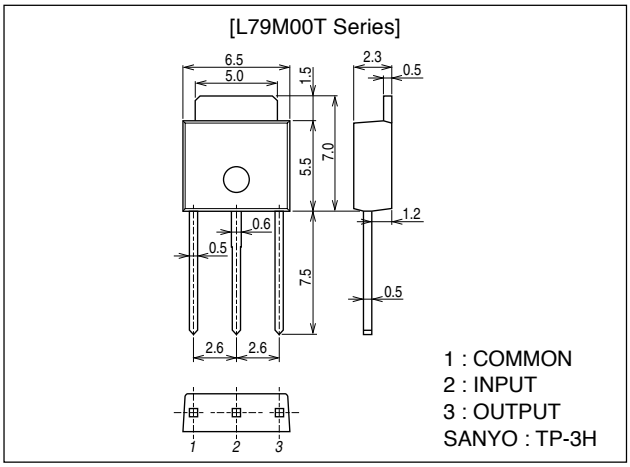
Features

- 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.

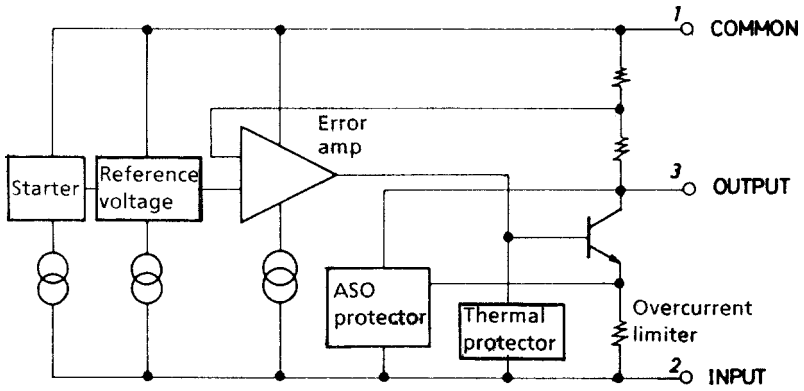
Package Dimensions

unit:mm

3110



Equivalent Circuit



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TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Specifications

[Common to L79M00T series]

Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum Supply Voltage	V_{CC} max	–5 to –12V output	–35	V
Allowable Power Dissipation	Pd max		1.0	W
Operating Temperature	Topr		–30 to +80	˚C
Storage Temperature	Tstg		–40 to +150	˚C

[L79M05T]

Recommended Operating Conditions at Ta = 25˚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 Ta = 25˚C, V_{IN}=–10V, I_{OUT}=350mA, C_{IN}=2µF, C_{OUT}=1µF

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Voltage	V_{OUT}	Tj=25°C	–5.2	–5.0	–4.8	V
Line Regulation	ΔV_O LINE	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_O LOAD	Tj=25°C, 5mA≤I_{OUT}≤500mA		10	100	mV
		Tj=25°C, 5mA≤I_{OUT}≤350mA		5		mV
Output Voltage	V_{OUT}	–25V≤V_{IN}≤–7V, 5mA≤I_{OUT}≤350mA	–5.25		–4.75	V
Current Dissipation	I_{CC}	Tj=25°C		1.0	2.5	mA
Current Dissipation Variation (Line)	ΔI_{CC} LINE	–25V≤V_{IN}≤–8V			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		125		µV
Ripple Rejection	Rrej	f=120Hz, –18V≤V_{IN}≤–8V, Tj=25°C, I_{OUT}=100mA	50			dB
		f=120Hz, –18V≤V_{IN}≤–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

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 Ta = 25˚C, V_{IN}=–11V, I_{OUT}=350mA, C_{IN}=2µF, C_{OUT}=1µF

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Voltage	V_{OUT}	Tj=25°C	–6.25	–6.0	–5.75	V
Line Regulation	ΔV_O LINE	Tj=25°C, –25V≤V_{IN}≤–8V		7.0	60	mV
		Tj=25°C, –19V≤V_{IN}≤–9V		3.0	40	mV
Load Regulation	ΔV_O LOAD	Tj=25°C, 5mA≤I_{OUT}≤500mA		10	120	mV
		Tj=25°C, 5mA≤I_{OUT}≤350mA		5		mV
Output Voltage	V_{OUT}	–25V≤V_{IN}≤–8V, 5mA≤I_{OUT}≤350mA	–6.3		–5.7	V
Current Dissipation	I_{CC}	Tj=25°C		1.0	2.5	mA
Current Dissipation Variation (Line)	ΔI_{CC} LINE	–25V≤V_{IN}≤–9V			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		150		µV
Ripple Rejection	Rrej	f=120Hz, –19V≤V_{IN}≤–9V, Tj=25°C, I_{OUT}=100mA	50			dB
		f=120Hz, –19V≤V_{IN}≤–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

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}	Tj=25°C	–8.3	–8.0	–7.7	V
Line Regulation	ΔV_O LINE	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_O LOAD	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_{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	Rrej	f=120Hz, –21.5V≤V_{IN}≤–11.5V, Tj=25°C, I_{OUT}=100mA	50			dB
		f=120Hz, –21.5V≤V_{IN}≤–11.5V, Tj=25°C, 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

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}	Tj=25°C	–9.4	–9.0	–8.6	V
Line Regulation	ΔV_O LINE	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_O LOAD	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_{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	Rrej	f=120Hz, –22.5V≤V_{IN}≤–12.5V, Tj=25°C, I_{OUT}=100mA	50			dB
		f=120Hz,–22.5V≤V_{IN}≤–12.5V, 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

[L79M10T]

Recommended Operating Conditions at Ta = 25˚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 Ta = 25˚C, V_{IN}=–17V, I_{OUT}=350mA, C_{IN}=2µF, C_{OUT}=1µF

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Voltage	V_{OUT}	Tj=25°C	–10.4	–10	–9.6	V
Line Regulation	ΔV_O LINE	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_O LOAD	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_{CC} LINE	–25V≤V_{IN}≤–12.5V			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		250		µV
Ripple Rejection	Rrej	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

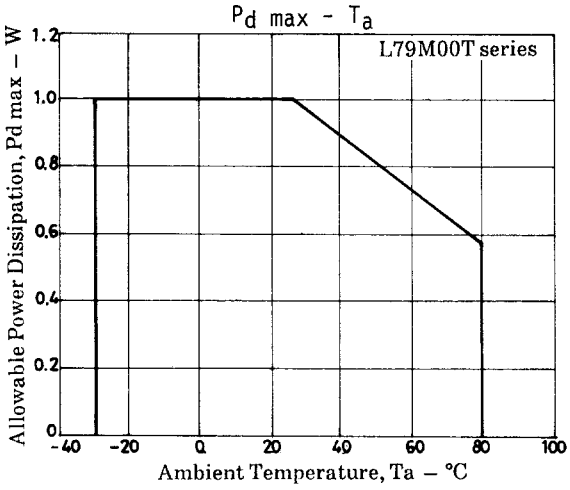
[L79M12T]

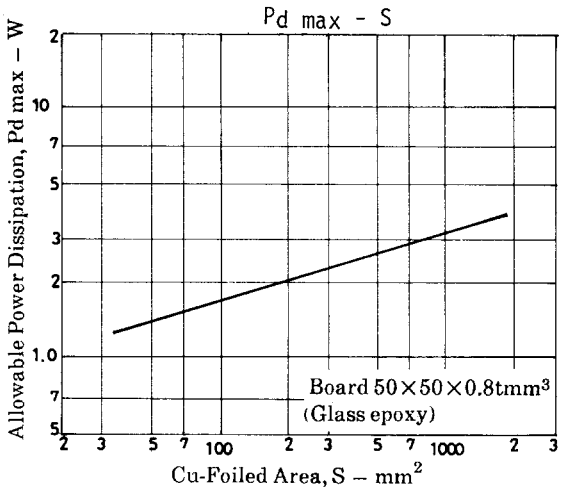
Recommended Operating Conditions at Ta = 25˚C

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

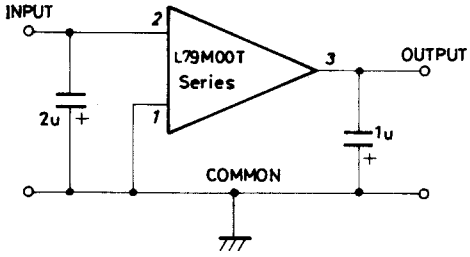
Operating Characteristics at Ta = 25˚C, V_{IN}=–19V, I_{OUT}=350mA, C_{IN}=2µF, C_{OUT}=1µF

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Voltage	V_{OUT}	Tj=25°C	–12.5	–12	–11.5	V
Line Regulation	ΔV_O LINE	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_O LOAD	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_{CC} LINE	–30V≤V_{IN}≤–14.5V			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		300		µV
Ripple Rejection	Rrej	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





Specified Test Circuit (Common to L79M00T series)



Unit (capacitance: F)

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