

SANYO

No.2609B

L78M00T Series

5 to 24V 0.5A 3-Pin Voltage Regulators

Features

- . Output voltage

L78M05T:5V	L78M06T:6V	L78M07T:7V	L78M08T:8V
L78M09T:9V	L78M10T:10V	L78M12T:12V	L78M15T:15V
L78M18T:18V	L78M20T:20V	L78M24T:24V	
- . 500mA output
- . On-chip thermal protector
- . On-chip overcurrent limiter
- . On-chip ASO protector
- . 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

[Common to L78M00T series]

Maximum Ratings at Ta=25°C

Maximum Supply Voltage	V _{CC} max	Pin 1	35	V
Allowable Power Dissipation	Pd max	No fin	1.0	W
Operating Temperature	T _{opr}		-20 to +80	°C
Storage Temperature	T _{stg}		-40 to +150	°C

[L78M05T]

Recommended Operating Conditions at Ta=25°C

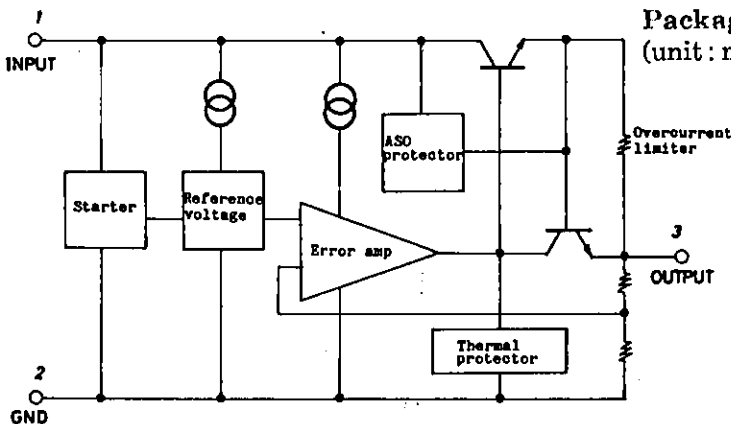
Input Voltage	V _{IN}	7.5 to 20	V
Output Current	I _{OUT}	5 to 500	mA

**Operating Characteristics at Ta=25°C, V_{IN}=10V, I_{OUT}=350mA,
See specified Test Circuit.**

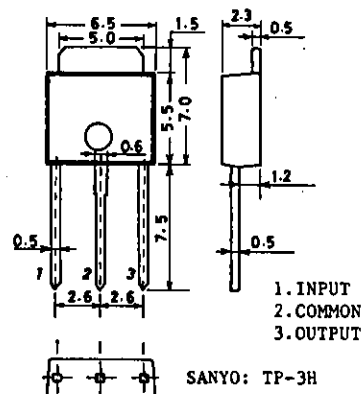
Output Voltage	V _{OUT}	T _j =25°C	4.8	5.0	5.2	V
Line Regulation	ΔV _{oline}	T _j =25°C, 7V ≤ V _{IN} ≤ 25V, I _{OUT} =200mA	3.0	50		mV
		T _j =25°C, 8V ≤ V _{IN} ≤ 20V, I _{OUT} =200mA	1.0	25		mV

Continued on next page.

Equivalent Circuit



Package Dimensions 3110 (unit: mm)



L78M00T Series

Continued from preceding page.

			min	typ	max	unit
Load Regulation	ΔV_{oload}	$T_j=25^\circ\text{C}, 5\text{mA} \leq I_{\text{OUT}} \leq 500\text{mA}$ $T_j=25^\circ\text{C}, 5\text{mA} \leq I_{\text{OUT}} \leq 200\text{mA}$			100	mV
Output Voltage	V_{OUT}	$7\text{V} \leq V_{\text{IN}} \leq 20\text{V}, 5\text{mA} \leq I_{\text{OUT}} \leq 350\text{mA}$	4.75		5.25	V
Current Dissipation	I_{CC}	$T_j=25^\circ\text{C}$		4.5	6.0	mA
Current Dissipation Variation (Line)	ΔI_{CCline}	$8\text{V} \leq V_{\text{IN}} \leq 25\text{V}, I_{\text{OUT}}=200\text{mA}$			0.8	mA
Current Dissipation Variation (Load)	ΔI_{CCload}	$5\text{mA} \leq I_{\text{OUT}} \leq 350\text{mA}$			0.5	mA
Output Noise Voltage	V_{NO}	$10\text{Hz} \leq f \leq 100\text{kHz}$		40		μV
Ripple Rejection	R_{rej}	$f=120\text{Hz}$ $8\text{V} \leq V_{\text{IN}} \leq 19\text{V}$ $T_j=25^\circ\text{C}$	62		80	dB
		$I_{\text{OUT}}=100\text{mA}$ $I_{\text{OUT}}=300\text{mA}$				dB
Minimum Input-Output Voltage Drop	V_{drop}	$I_{\text{OUT}}=350\text{mA}$		2.0		V
Short Current	I_{OS}	$T_j=25^\circ\text{C}, V_{\text{IN}}=35\text{V}, \text{to GND}$		300		mA
Peak Output Current	I_{op}	$T_j=25^\circ\text{C}$		0.7		A

[L78M06T]

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

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

Operating Characteristics at $T_a=25^\circ\text{C}, V_{\text{IN}}=11\text{V}, I_{\text{OUT}}=350\text{mA}$,
See specified Test Circuit.

			min	typ	max	unit
Output Voltage	V_{OUT}	$T_j=25^\circ\text{C}$	5.75	6.0	6.25	V
Line Regulation	ΔV_{oline}	$T_j=25^\circ\text{C}, 8\text{V} \leq V_{\text{IN}} \leq 25\text{V}, I_{\text{OUT}}=200\text{mA}$ $T_j=25^\circ\text{C}, 9\text{V} \leq V_{\text{IN}} \leq 20\text{V}, I_{\text{OUT}}=200\text{mA}$		5.0	60	mV
Load Regulation	ΔV_{oload}	$T_j=25^\circ\text{C}, 5\text{mA} \leq I_{\text{OUT}} \leq 500\text{mA}$ $T_j=25^\circ\text{C}, 5\text{mA} \leq I_{\text{OUT}} \leq 200\text{mA}$		1.5	30	mV
Output Voltage	V_{OUT}	$8\text{V} \leq V_{\text{IN}} \leq 21\text{V}, 5\text{mA} \leq I_{\text{OUT}} \leq 350\text{mA}$	5.7		6.3	V
Current Dissipation	I_{CC}	$T_j=25^\circ\text{C}$		4.5	6.0	mA
Current Dissipation Variation (Line)	ΔI_{CCline}	$9\text{V} \leq V_{\text{IN}} \leq 25\text{V}, I_{\text{OUT}}=200\text{mA}$			0.8	mA
Current Dissipation Variation (Load)	ΔI_{CCload}	$5\text{mA} \leq I_{\text{OUT}} \leq 350\text{mA}$			0.5	mA
Output Noise Voltage	V_{NO}	$10\text{Hz} \leq f \leq 100\text{kHz}$		45		μV
Ripple Rejection	R_{rej}	$f=120\text{Hz}$ $9\text{V} \leq V_{\text{IN}} \leq 20\text{V}$ $T_j=25^\circ\text{C}$	59		80	dB
		$I_{\text{OUT}}=100\text{mA}$ $I_{\text{OUT}}=300\text{mA}$				dB
Minimum Input-Output Voltage Drop	V_{drop}	$I_{\text{OUT}}=350\text{mA}$		2.0		V
Short Current	I_{OS}	$T_j=25^\circ\text{C}, V_{\text{IN}}=35\text{V}, \text{to GND}$		300		mA
Peak Output Current	I_{op}	$T_j=25^\circ\text{C}$		0.7		A

[L78M07T]

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

			unit
Input Voltage	V_{IN}	9.5 to 22	V
Output Current	I_{OUT}	5 to 500	mA

L78M00T Series

**Operating Characteristics at $T_a=25^\circ\text{C}$, $V_{IN}=12\text{V}$, $I_{OUT}=350\text{mA}$,
See specified Test Circuit.**

			min	typ	max	unit
Output Voltage	V_{OUT}	$T_j=25^\circ\text{C}$	6.72	7.0	7.28	V
Line Regulation	ΔV_{oline}	$T_j=25^\circ\text{C}$, $9\text{V} \leq V_{IN} \leq 25\text{V}$, $I_{OUT}=200\text{mA}$		6.0	60	mV
		$T_j=25^\circ\text{C}$, $10\text{V} \leq V_{IN} \leq 20\text{V}$, $I_{OUT}=200\text{mA}$		2.0	30	mV
Load Regulation	ΔV_{oload}	$T_j=25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 500\text{mA}$			140	mV
		$T_j=25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 200\text{mA}$			70	mV
Output Voltage	V_{OUT}	$9\text{V} \leq V_{IN} \leq 22\text{V}$, $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$	6.6		7.4	V
Current Dissipation	I_{CC}	$T_j=25^\circ\text{C}$		4.6	6.0	mA
Current Dissipation Variation (Line)	ΔI_{CCline}	$10\text{V} \leq V_{IN} \leq 25\text{V}$, $I_{OUT}=200\text{mA}$			0.8	mA
Current Dissipation Variation (Load)	ΔI_{CCload}	$5\text{mA} \leq I_{OUT} \leq 350\text{mA}$			0.5	mA
Output Noise Voltage	V_{NO}	$10\text{Hz} \leq f \leq 100\text{kHz}$		48		μV
Ripple Rejection	R_{rej}	$f=120\text{Hz}$	58			dB
		$10\text{V} \leq V_{IN} \leq 21\text{V}$	58	80		dB
		$T_j=25^\circ\text{C}$				
Minimum Input-Output Voltage Drop	V_{drop}	$I_{OUT}=350\text{mA}$		2.0		V
Short Current	I_{OS}	$T_j=25^\circ\text{C}$, $V_{IN}=35\text{V}$, to GND		300		mA
Peak Output Current	I_{op}	$T_j=25^\circ\text{C}$		0.7		A

[L78M08T]

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

			unit
Input Voltage	V_{IN}	10.5 to 23	V
Output Current	I_{OUT}	5 to 500	mA

**Operating Characteristics at $T_a=25^\circ\text{C}$, $V_{IN}=15\text{V}$, $I_{OUT}=350\text{mA}$,
See specified Test Circuit.**

			min	typ	max	unit
Output Voltage	V_{OUT}	$T_j=25^\circ\text{C}$	7.7	8.0	8.3	V
Line Regulation	ΔV_{oline}	$T_j=25^\circ\text{C}$, $10.5\text{V} \leq V_{IN} \leq 25\text{V}$, $I_{OUT}=200\text{mA}$		6.0	60	mV
		$T_j=25^\circ\text{C}$, $11\text{V} \leq V_{IN} \leq 20\text{V}$, $I_{OUT}=200\text{mA}$		2.0	30	mV
Load Regulation	ΔV_{oload}	$T_j=25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 500\text{mA}$			160	mV
		$T_j=25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 200\text{mA}$			80	mV
Output Voltage	V_{OUT}	$10.5\text{V} \leq V_{IN} \leq 23\text{V}$, $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$	7.6		8.4	V
Current Dissipation	I_{CC}	$T_j=25^\circ\text{C}$		4.6	6.0	mA
Current Dissipation Variation (Line)	ΔI_{CCline}	$11\text{V} \leq V_{IN} \leq 25\text{V}$, $I_{OUT}=200\text{mA}$			0.8	mA
Current Dissipation Variation (Load)	ΔI_{CCload}	$5\text{mA} \leq I_{OUT} \leq 350\text{mA}$			0.5	mA
Output Noise Voltage	V_{NO}	$10\text{Hz} \leq f \leq 100\text{kHz}$		50		μV
Ripple Rejection	R_{rej}	$f=120\text{Hz}$	56			dB
		$11.5\text{V} \leq V_{IN} \leq 22\text{V}$	56	80		dB
		$T_j=25^\circ\text{C}$				
Minimum Input-Output Voltage Drop	V_{drop}	$I_{OUT}=350\text{mA}$		2.0		V
Short Current	I_{OS}	$T_j=25^\circ\text{C}$, $V_{IN}=35\text{V}$, to GND		300		mA
Peak Output Current	I_{op}	$T_j=25^\circ\text{C}$		0.7		A

[L78M09T]

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

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

L78M00T Series

Operating Characteristics at $T_a=25^\circ\text{C}$, $V_{IN}=16\text{V}$, $I_{OUT}=350\text{mA}$,
See specified Test Circuit.

			min	typ	max	unit
Output Voltage	V_{OUT}	$T_j=25^\circ\text{C}$	8.6	9.0	9.4	V
Line Regulation	ΔV_{oline}	$T_j=25^\circ\text{C}$, $11.5\text{V} \leq V_{IN} \leq 25\text{V}$, $I_{OUT}=200\text{mA}$		6.0	100	mV
		$T_j=25^\circ\text{C}$, $12\text{V} \leq V_{IN} \leq 20\text{V}$, $I_{OUT}=200\text{mA}$		2.0	50	mV
Load Regulation	ΔV_{oload}	$T_j=25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 500\text{mA}$			180	mV
		$T_j=25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 200\text{mA}$			90	mV
Output Voltage	V_{OUT}	$11.5\text{V} \leq V_{IN} \leq 24\text{V}$, $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$	8.5		9.5	V
Current Dissipation	I_{CC}	$T_j=25^\circ\text{C}$		4.6	6.0	mA
Current Dissipation Variation (Line)	ΔI_{CCline}	$12.5\text{V} \leq V_{IN} \leq 25\text{V}$, $I_{OUT}=200\text{mA}$			0.8	mA
Current Dissipation Variation (Load)	ΔI_{CCload}	$5\text{mA} \leq I_{OUT} \leq 350\text{mA}$			0.5	mA
Output Noise Voltage	V_{NO}	$10\text{Hz} \leq f \leq 100\text{kHz}$		60		μV
Ripple Rejection	R_{rej}	$f=120\text{Hz}$		56		dB
		$12\text{V} \leq V_{IN} \leq 23\text{V}$		56	80	dB
		$T_j=25^\circ\text{C}$				
Minimum Input-Output Voltage Drop	V_{drop}	$I_{OUT}=350\text{mA}$		2.0		V
Short Current	I_{OS}	$T_j=25^\circ\text{C}$, $V_{IN}=35\text{V}$, to GND		300		mA
Peak Output Current	I_{op}	$T_j=25^\circ\text{C}$		0.7		A

[L78M10T]

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

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

Operating Characteristics at $T_a=25^\circ\text{C}$, $V_{IN}=17\text{V}$, $I_{OUT}=350\text{mA}$,
See specified Test Circuit.

			min	typ	max	unit
Output Voltage	V_{OUT}	$T_j=25^\circ\text{C}$	9.6	10.0	10.4	V
Line Regulation	ΔV_{oline}	$T_j=25^\circ\text{C}$, $12.5\text{V} \leq V_{IN} \leq 25\text{V}$, $I_{OUT}=200\text{mA}$		7.0	100	mV
		$T_j=25^\circ\text{C}$, $13\text{V} \leq V_{IN} \leq 22\text{V}$, $I_{OUT}=200\text{mA}$		2.0	50	mV
Load Regulation	ΔV_{oload}	$T_j=25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 500\text{mA}$			200	mV
		$T_j=25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 200\text{mA}$			100	mV
Output Voltage	V_{OUT}	$12.5\text{V} \leq V_{IN} \leq 25\text{V}$, $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$	9.5		10.5	V
Current Dissipation	I_{CC}	$T_j=25^\circ\text{C}$		4.6	6.0	mA
Current Dissipation Variation (Line)	ΔI_{CCline}	$13.5\text{V} \leq V_{IN} \leq 25\text{V}$, $I_{OUT}=200\text{mA}$			0.8	mA
Current Dissipation Variation (Load)	ΔI_{CCload}	$5\text{mA} \leq I_{OUT} \leq 350\text{mA}$			0.5	mA
Output Noise Voltage	V_{NO}	$10\text{Hz} \leq f \leq 100\text{kHz}$		65		μV
Ripple Rejection	R_{rej}	$f=120\text{Hz}$		55		dB
		$13\text{V} \leq V_{IN} \leq 25\text{V}$		55	80	dB
		$T_j=25^\circ\text{C}$				
Minimum Input-Output Voltage Drop	V_{drop}	$I_{OUT}=350\text{mA}$		2.0		V
Short Current	I_{OS}	$T_j=25^\circ\text{C}$, $V_{IN}=35\text{V}$, to GND		300		mA
Peak Output Current	I_{op}	$T_j=25^\circ\text{C}$		0.7		A

L78M00T Series

[L78M12T]

Recommended Operating Conditions at Ta=25°C				unit
Input Voltage	V _{IN}	15 to 25	V	
Output Current	I _{OUT}	5 to 500	mA	

Operating Characteristics at Ta=25°C, V_{IN}=19V, I_{OUT}=350mA,
See specified Test Circuit.

			min	typ	max	unit
Output Voltage	V _{OUT}	T _j =25°C	11.5	12.0	12.5	V
Line Regulation	ΔV _{oline}	T _j =25°C, 14.5V ≤ V _{IN} ≤ 30V, I _{OUT} =200mA	8.0	100		mV
Load Regulation	ΔV _{oload}	T _j =25°C, 16V ≤ V _{IN} ≤ 25V, I _{OUT} =200mA	2.0	50		mV
		T _j =25°C, 5mA ≤ I _{OUT} ≤ 500mA			240	mV
Output Voltage	V _{OUT}	T _j =25°C, 5mA ≤ I _{OUT} ≤ 200mA		120		mV
Output Voltage	V _{OUT}	14.5V ≤ V _{IN} ≤ 27V, 5mA ≤ I _{OUT} ≤ 350mA	11.4		12.6	V
Current Dissipation	I _{CC}	T _j =25°C	4.8	6.0		mA
Current Dissipation	ΔI _{CCline}	15V ≤ V _{IN} ≤ 30V, I _{OUT} =200mA		0.8		mA
Variation (Line)						
Current Dissipation	ΔI _{CCload}	5mA ≤ I _{OUT} ≤ 350mA		0.5		mA
Variation (Load)						
Output Noise Voltage	V _{NO}	10Hz ≤ f ≤ 100kHz		75		μV
Ripple Rejection	R _{rej}	f=120Hz		55		dB
		15V ≤ V _{IN} ≤ 25V T _j =25°C	I _{OUT} =100mA I _{OUT} =300mA	55	80	dB
Minimum Input-Output	V _{drop}	I _{OUT} =350mA	2.0			V
Voltage Drop						
Short Current	I _{OS}	T _j =25°C, V _{IN} =35V, to GND	300			mA
Peak Output Current	I _{op}	T _j =25°C	0.7			A

[L78M15T]

Recommended Operating Conditions at Ta=25°C				unit
Input Voltage	V _{IN}	18 to 30	V	
Output Current	I _{OUT}	5 to 500	mA	

Operating Characteristics at Ta=25°C, V_{IN}=23V, I_{OUT}=350mA,
See specified Test Circuit.

			min	typ	max	unit
Output Voltage	V _{OUT}	T _j =25°C	14.4	15.0	15.6	V
Line Regulation	ΔV _{oline}	T _j =25°C, 17.5V ≤ V _{IN} ≤ 30V, I _{OUT} =200mA	10.0	100		mV
Load Regulation	ΔV _{oload}	T _j =25°C, 19V ≤ V _{IN} ≤ 30V, I _{OUT} =200mA	3.0	50		mV
		T _j =25°C, 5mA ≤ I _{OUT} ≤ 500mA			300	mV
Output Voltage	V _{OUT}	T _j =25°C, 5mA ≤ I _{OUT} ≤ 200mA		150		mV
Output Voltage	V _{OUT}	17.5V ≤ V _{IN} ≤ 30V, 5mA ≤ I _{OUT} ≤ 350mA	14.25		15.75	V
Current Dissipation	I _{CC}	T _j =25°C	4.8	6.0		mA
Current Dissipation	ΔI _{CCline}	17.5V ≤ V _{IN} ≤ 30V, I _{OUT} =200mA		0.8		mA
Variation (Line)						
Current Dissipation	ΔI _{CCload}	5mA ≤ I _{OUT} ≤ 350mA		0.5		mA
Variation (Load)						
Output Noise Voltage	V _{NO}	10Hz ≤ f ≤ 100kHz		90		μV
Ripple Rejection	R _{rej}	f=120Hz		54		dB
		18.5V ≤ V _{IN} ≤ 28.5V T _j =25°C	I _{OUT} =100mA I _{OUT} =300mA	54	70	dB
Minimum Input-Output	V _{drop}	I _{OUT} =350mA	2.0			V
Voltage Drop						
Short Current	I _{OS}	T _j =25°C, V _{IN} =35V, to GND	300			mA
Peak Output Current	I _{op}	T _j =25°C	0.7			A

L78M00T Series

[L78M18T]

Recommended Operating Conditions at Ta=25°C		unit
Input Voltage	V _{IN}	21 to 33 V
Output Current	I _{OUT}	5 to 500 mA

Operating Characteristics at Ta=25°C, V_{IN}=27V, I_{OUT}=350mA,
See specified Test Circuit.

			min	typ	max	unit
Output Voltage	V _{OUT}	T _j =25°C	17.3	18.0	18.7	V
Line Regulation	ΔV _{oline}	T _j =25°C, 21V ≤ V _{IN} ≤ 35V, I _{OUT} =200mA	10.0	100		mV
		T _j =25°C, 22V ≤ V _{IN} ≤ 35V, I _{OUT} =200mA	5.0	50		mV
Load Regulation	ΔV _{oload}	T _j =25°C, 5mA ≤ I _{OUT} ≤ 500mA			360	mV
		T _j =25°C, 5mA ≤ I _{OUT} ≤ 200mA			180	mV
Output Voltage	V _{OUT}	21V ≤ V _{IN} ≤ 33V, 5mA ≤ I _{OUT} ≤ 350mA	17.1		18.9	V
Current Dissipation	I _{CC}	T _j =25°C	4.9	6.0		mA
Current Dissipation	ΔI _{CCline}	21V ≤ V _{IN} ≤ 33V, I _{OUT} =200mA			0.8	mA
Variation (Line)						
Current Dissipation	ΔI _{CCload}	5mA ≤ I _{OUT} ≤ 350mA			0.5	mA
Variation (Load)						
Output Noise Voltage	V _{NO}	10Hz ≤ f ≤ 100kHz		100		uV
Ripple Rejection	R _{rej}	f=120Hz		53		dB
		22V ≤ V _{IN} ≤ 33V	I _{OUT} =100mA	53	70	dB
		T _j =25°C				
Minimum Input-Output	V _{drop}	I _{OUT} =350mA		2.0		V
Voltage Drop						
Short Current	I _{OS}	T _j =25°C, V _{IN} =35V, to GND		300		mA
Peak Output Current	I _{op}	T _j =25°C		0.7		A

[L78M20T]

Recommended Operating Conditions at Ta=25°C		unit
Input Voltage	V _{IN}	23 to 35 V
Output Current	I _{OUT}	5 to 500 mA

Operating Characteristics at Ta=25°C, V_{IN}=29V, I_{OUT}=350mA,
See specified Test Circuit.

			min	typ	max	unit
Output Voltage	V _{OUT}	T _j =25°C	19.2	20.0	20.8	V
Line Regulation	ΔV _{oline}	T _j =25°C, 23V ≤ V _{IN} ≤ 35V, I _{OUT} =200mA	10.0	100		mV
		T _j =25°C, 24V ≤ V _{IN} ≤ 35V, I _{OUT} =200mA	5.0	50		mV
Load Regulation	ΔV _{oload}	T _j =25°C, 5mA ≤ I _{OUT} ≤ 500mA			400	mV
		T _j =25°C, 5mA ≤ I _{OUT} ≤ 200mA			200	mV
Output Voltage	V _{OUT}	23V ≤ V _{IN} ≤ 35V, 5mA ≤ I _{OUT} ≤ 350mA	19.0		21.0	V
Current Dissipation	I _{CC}	T _j =25°C	4.9	6.0		mA
Current Dissipation	ΔI _{CCline}	23V ≤ V _{IN} ≤ 35V, I _{OUT} =200mA			0.8	mA
Variation (Line)						
Current Dissipation	ΔI _{CCload}	5mA ≤ I _{OUT} ≤ 350mA			0.5	mA
Variation (Load)						
Output Noise Voltage	V _{NO}	10Hz ≤ f ≤ 100kHz		110		uV
Ripple Rejection	R _{rej}	f=120Hz		53		dB
		24V ≤ V _{IN} ≤ 34V	I _{OUT} =100mA	53	70	dB
		T _j =25°C				
Minimum Input-Output	V _{drop}	I _{OUT} =350mA		2.0		V
Voltage Drop						
Short Current	I _{OS}	T _j =25°C, V _{IN} =35V, to GND		300		mA
Peak Output Current	I _{op}	T _j =25°C		0.7		A

L78M00T Series

[L78M24T]

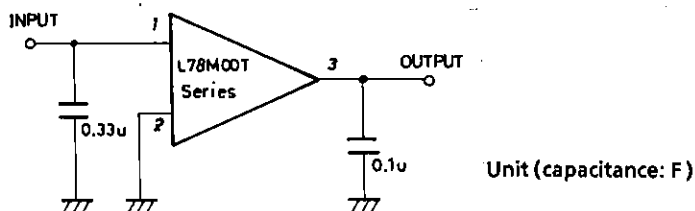
Recommended Operating Conditions at $T_a=25^\circ\text{C}$

Parameter	Symbol	Value	Unit
Input Voltage	V_{IN}	27 to 35	V
Output Current	I_{OUT}	5 to 500	mA

Operating Characteristics at $T_a=25^\circ\text{C}$, $V_{IN}=33\text{V}$, $I_{OUT}=350\text{mA}$, See specified Test Circuit.

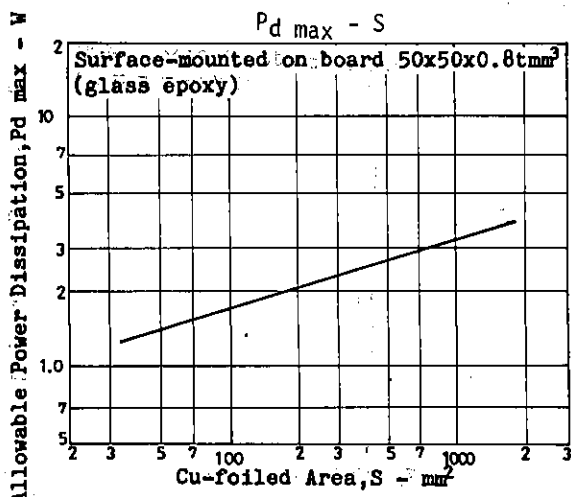
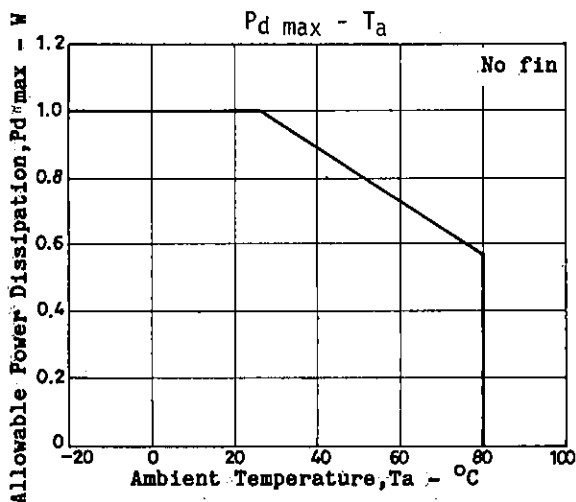
Parameter	Symbol	Conditions	min	typ	max	Unit
Output Voltage	V_{OUT}	$T_j=25^\circ\text{C}$	23.0	24.0	25.0	V
Line Regulation	ΔV_{oline}	$T_j=25^\circ\text{C}$, $27\text{V} \leq V_{IN} \leq 35\text{V}$, $I_{OUT}=200\text{mA}$	10.0		100	mV
		$T_j=25^\circ\text{C}$, $28\text{V} \leq V_{IN} \leq 35\text{V}$, $I_{OUT}=200\text{mA}$	5.0		50	mV
Load Regulation	ΔV_{oload}	$T_j=25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 500\text{mA}$			480	mV
		$T_j=25^\circ\text{C}$, $5\text{mA} \leq I_{OUT} \leq 200\text{mA}$			240	mV
Output Voltage	V_{OUT}	$27\text{V} \leq V_{IN} \leq 35\text{V}$, $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$	22.8		25.2	V
Current Dissipation	I_{CC}	$T_j=25^\circ\text{C}$		5.0	6.0	mA
Current Dissipation Variation (Line)	ΔI_{CCline}	$27\text{V} \leq V_{IN} \leq 35\text{V}$, $I_{OUT}=200\text{mA}$			0.8	mA
Current Dissipation Variation (Load)	ΔI_{CCload}	$5\text{mA} \leq I_{OUT} \leq 350\text{mA}$			0.5	mA
Output Noise Voltage	V_{NO}	$10\text{Hz} \leq f \leq 100\text{kHz}$		170		μV
Ripple Rejection	R_{rej}	$f=120\text{Hz}$		50		dB
		$28\text{V} \leq V_{IN} \leq 35\text{V}$, $T_j=25^\circ\text{C}$	$I_{OUT}=100\text{mA}$ $I_{OUT}=300\text{mA}$	50	70	dB
Minimum Input-Output Voltage Drop	V_{drop}	$I_{OUT}=350\text{mA}$		2.0		V
Short Current	I_{OS}	$T_j=25^\circ\text{C}$, $V_{IN}=35\text{V}$, to GND		300		mA
Peak Output Current	I_{op}	$T_j=25^\circ\text{C}$		0.7		A

Specified Test Circuit (Common to L78M00T series)



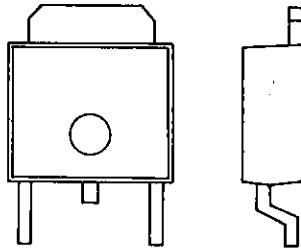
The allowable power dissipation ($P_d \text{ max}$) is 1.0W ($T_a=25^\circ\text{C}$) with no fin attached. When the L78M00T series are surface-mounted on a hybrid IC board or printed circuit board, a high allowable power dissipation can be obtained, though they are placed in a small-sized package.

Shown below is the relationship between the Cu-foiled area and the allowable power dissipation when the L78M00T series are surface-mounted on a glass epoxy board ($50 \times 50 \times 0.8 \text{mm}^3$).

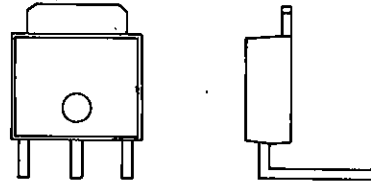


L78M00T Series

Lead Formings



FA forming



LR forming

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