



## L79M00T Series

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

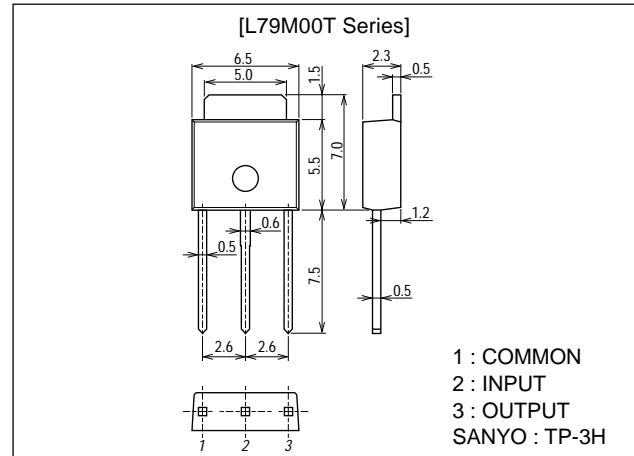
#### Features

- 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.

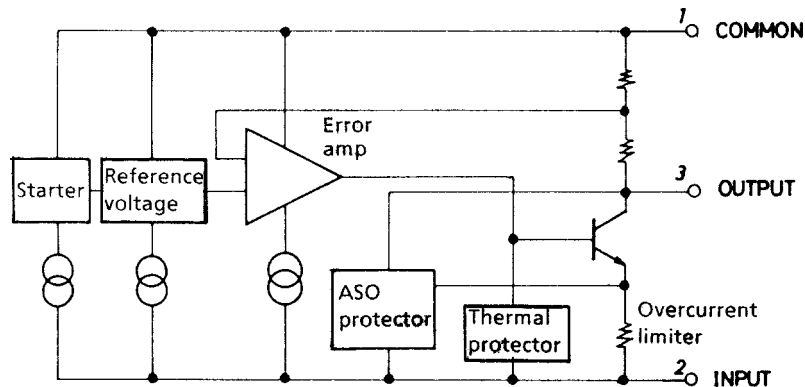
#### Package Dimensions

unit:mm

3110



#### Equivalent Circuit



■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

**SANYO Electric Co., Ltd. Semiconductor Company**

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

# 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		$\mu\text{V}$
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		$\mu\text{V}$
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 $T_a = 25^\circ\text{C}$

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

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Voltage	$V_{OUT}$	$T_j = 25^\circ\text{C}$	-8.3	-8.0	-7.7	V
Line Regulation	$\Delta V_o \text{ LINE}$	$T_j = 25^\circ\text{C}$ , $-25\text{V} \leq V_{IN} \leq -10.5\text{V}$		8.0	80	mV
		$T_j = 25^\circ\text{C}$ , $-21\text{V} \leq V_{IN} \leq -11\text{V}$		4.0	50	mV
Load Regulation	$\Delta V_o \text{ LOAD}$	$T_j = 25^\circ\text{C}$ , $5\text{mA} \leq I_{OUT} \leq 500\text{mA}$		11	160	mV
		$T_j = 25^\circ\text{C}$ , $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$		6		mV
Output Voltage	$V_{OUT}$	$-25\text{V} \leq V_{IN} \leq -10.5\text{V}$ , $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$	-8.4		-7.6	V
Current Dissipation	$I_{CC}$	$T_j = 25^\circ\text{C}$		1.0	2.5	mA
Current Dissipation Variation (Line)	$\Delta I_{CC} \text{ LINE}$	$-25\text{V} \leq V_{IN} \leq -10.5\text{V}$			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	$V_{NO}$	$10\text{Hz} \leq f \leq 100\text{kHz}$		200		$\mu\text{V}$
Ripple Rejection	Rrej	$f = 120\text{Hz}$ , $-21.5\text{V} \leq V_{IN} \leq -11.5\text{V}$ , $T_j = 25^\circ\text{C}$ , $I_{OUT} = 100\text{mA}$	50			dB
		$f = 120\text{Hz}$ , $-21.5\text{V} \leq V_{IN} \leq -11.5\text{V}$ , $T_j = 25^\circ\text{C}$ , $I_{OUT} = 300\text{mA}$	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 $T_a = 25^\circ\text{C}$

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

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Voltage	$V_{OUT}$	$T_j = 25^\circ\text{C}$	-9.4	-9.0	-8.6	V
Line Regulation	$\Delta V_o \text{ LINE}$	$T_j = 25^\circ\text{C}$ , $-25\text{V} \leq V_{IN} \leq -11.5\text{V}$		8.0	80	mV
		$T_j = 25^\circ\text{C}$ , $-20\text{V} \leq V_{IN} \leq -12\text{V}$		4.0	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	$V_{OUT}$	$-25\text{V} \leq V_{IN} \leq -11.5\text{V}$ , $5\text{mA} \leq I_{OUT} \leq 350\text{mA}$	-9.5		-8.5	V
Current Dissipation	$I_{CC}$	$T_j = 25^\circ\text{C}$		1.0	2.5	mA
Current Dissipation Variation (Line)	$\Delta I_{CC} \text{ LINE}$	$-25\text{V} \leq V_{IN} \leq -11.5\text{V}$			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	$V_{NO}$	$10\text{Hz} \leq f \leq 100\text{kHz}$		225		$\mu\text{V}$
Ripple Rejection	Rrej	$f = 120\text{Hz}$ , $-22.5\text{V} \leq V_{IN} \leq -12.5\text{V}$ , $T_j = 25^\circ\text{C}$ , $I_{OUT} = 100\text{mA}$	50			dB
		$f = 120\text{Hz}$ , $-22.5\text{V} \leq V_{IN} \leq -12.5\text{V}$ , $T_j = 25^\circ\text{C}$ , $I_{OUT} = 300\text{mA}$	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

## 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		$\mu\text{V}$
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]

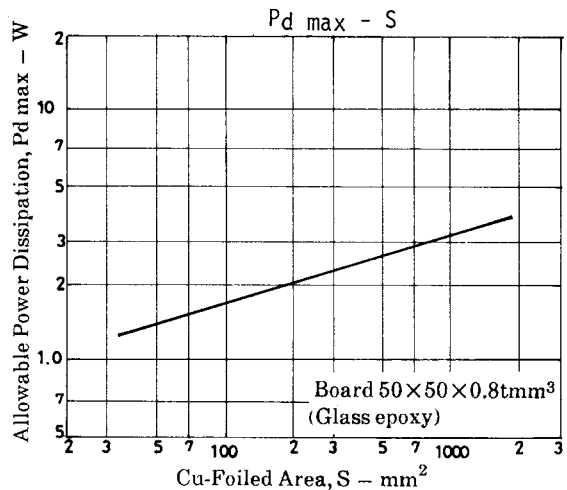
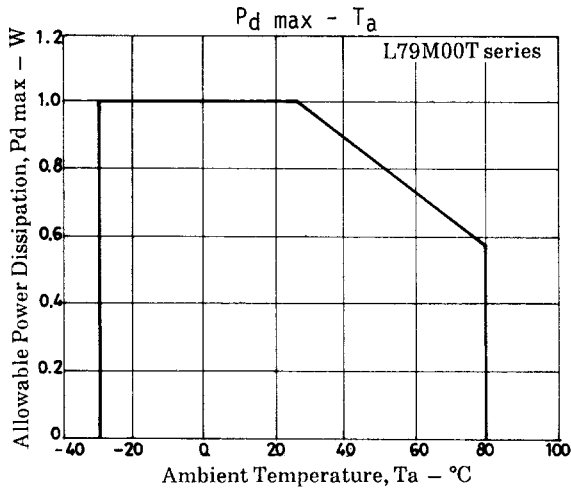
#### Recommended Operating Conditions at $T_a = 25^\circ\text{C}$

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

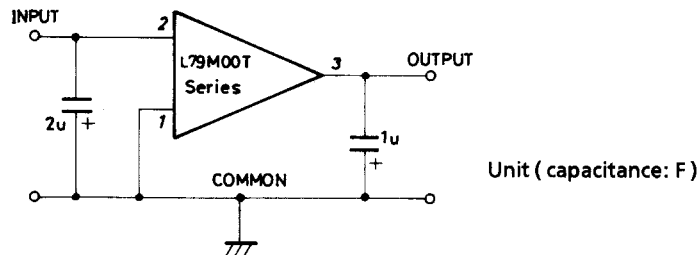
#### Operating Characteristics at $T_a = 25^\circ\text{C}$ , $V_{IN} = -19\text{V}$ , $I_{OUT} = 350\text{mA}$ , $C_{IN} = 2\mu\text{F}$ , $C_{OUT} = 1\mu\text{F}$

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		$\mu\text{V}$
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<sub>IN</sub> max must be in the range specified above, with regulation, etc. considered.

- Specifications of any and all SANYO products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.
- SANYO Electric Co., Ltd. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.
- In the event that any or all SANYO products (including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.
- No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of SANYO Electric Co., Ltd.
- Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the SANYO product that you intend to use.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provides information as of December, 1999. Specifications and information herein are subject to change without notice.