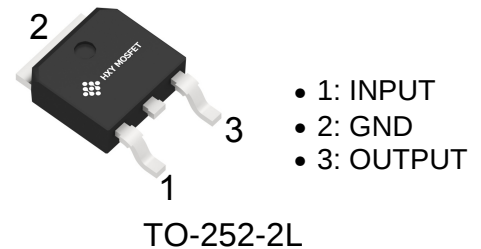




Features Pin Connection

- Maximum Output Current: 500mA
- Output Voltage is 5.0V, 6.0V, 8.0V ,12.0V,15V
- Internal Thermal Overload Protection
- Internal Short Circuit Current Limiting
- 78M05 is available in TO-252-2L package

Pin Connection



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Value	Units
Input Voltage	V_i	36	V
Operating Temperature Range	T_{opr}	-40~ +125	°C
Storage Temperature Range	T_{stg}	-85 ~ +150	°C

Electrical Characteristics

L78M05CDT(unless otherwise noted, $V_i=10V$, $I_o=250mA$, $0^{\circ}C < T_j < 125^{\circ}C$, $C_i=0.33\mu F$, $C_o=0.1\mu F$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$T_j=25^{\circ}C$	4.8	5.0	5.2	V
		$7.5V \leq V_i \leq 20V$ $I_o=5mA \sim 250mA$	4.75	5.0	5.25	
Load Regulation	ΔV_o	$T_j=25^{\circ}C, I_o=5mA \sim 500mA$		25	100	mV
		$T_j=25^{\circ}C, I_o=5mA \sim 200mA$		10	50	
Line Regulation	ΔV_o	$7.5V \leq V_i \leq 25V, T_j=25^{\circ}C$		4	100	mV
		$8V \leq V_i \leq 20V, T_j=25^{\circ}C$		2	50	
Quiescent Current	I_q	$T_j=25^{\circ}C$		4	6	mA
Quiescent Current Charge	ΔI_q	$8V \leq V_i \leq 25V, I_o=200mA$			0.8	mA
		$5mA \leq V_i \leq 350mA$			0.5	
Output noise Voltage	V_N	$10Hz \leq f \leq 100kHz$		40	200	μV
Dropout Voltage	V_d	$T_j=25^{\circ}C$		1.8		V
Ripple Rejection	RR	$8V \leq V_i \leq 20V, f=120Hz$, $T_j=25^{\circ}C$	56	80		dB
Short Circuit Current Limit	I_{sc}	$T_j=25^{\circ}C$		600		mA



Electrical Characteristics

L78M06CDT(unless otherwise noted, $V_i=11V$, $I_o=250mA$, $0^{\circ}C < T_j < 125^{\circ}C$, $C_i=0.33\mu F$, $C_o=0.1\mu F$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$T_j=25^{\circ}C$	5.76	6.0	6.24	V
		$8.5V \leq V_i \leq 21V$ $I_o=5mA \sim 250mA$	5.70	6.0	6.30	
Load Regulation	ΔV_o	$T_j=25^{\circ}C, I_o=5mA \sim 500mA$		25	120	mV
		$T_j=25^{\circ}C, I_o=5mA \sim 200mA$		10	60	
Line Regulation	ΔV_o	$8.5V \leq V_i \leq 26V, T_j=25^{\circ}C$		4	100	mV
		$9V \leq V_i \leq 21V, T_j=25^{\circ}C$		2	50	
Quiescent Current	I_q	$T_j=25^{\circ}C$		4	6	mA
Quiescent Current Charge	ΔI_q	$9V \leq V_i \leq 26V, I_o=200mA$			0.8	mA
		$5mA \leq V_i \leq 350mA$			0.5	
Output noise Voltage	V_N	$10Hz \leq f \leq 100kHz$		40	200	μV
Dropout Voltage	V_d	$T_j=25^{\circ}C$		1.8		V
Ripple Rejection	RR	$9V \leq V_i \leq 21V, f=120Hz$, $T_j=25^{\circ}C$	56	80		dB
Short Circuit Current Limit	Isc	$T_j=25^{\circ}C$		600		mA

L78M08CDT(unless otherwise noted, $V_i=14V$, $I_o=250mA$, $0^{\circ}C < T_j < 125^{\circ}C$, $C_i=0.33\mu F$, $C_o=0.1\mu F$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$T_j=25^{\circ}C$	7.68	8.0	8.32	V
		$10.5V \leq V_i \leq 23V$ $I_o=5mA \sim 250mA$	7.60	8.0	8.40	
Load Regulation	ΔV_o	$T_j=25^{\circ}C, I_o=5mA \sim 500mA$		30	160	mV
		$T_j=25^{\circ}C, I_o=5mA \sim 200mA$		10	80	
Line Regulation	ΔV_o	$10.5V \leq V_i \leq 28V, T_j=25^{\circ}C$		6	100	mV
		$11V \leq V_i \leq 23V, T_j=25^{\circ}C$		2	50	
Quiescent Current	I_q	$T_j=25^{\circ}C$		4	6	mA
Quiescent Current Charge	ΔI_q	$11V \leq V_i \leq 28V, I_o=200mA$			0.8	mA
		$5mA \leq V_i \leq 350mA$			0.5	
Output noise Voltage	V_N	$10Hz \leq f \leq 100kHz$		40	200	μV
Dropout Voltage	V_d	$T_j=25^{\circ}C$		1.8		V
Ripple Rejection	RR	$11V \leq V_i \leq 23V, f=120Hz$, $T_j=25^{\circ}C$	56	80		dB
Short Circuit Current Limit	Isc	$T_j=25^{\circ}C$		600		mA



L78M12CDT(unless otherwise noted, $V_i=19V$, $I_o=250mA$, $0^{\circ}C < T_j < 125^{\circ}C$, $C_i=0.33\mu F$, $C_o=0.1\mu F$)

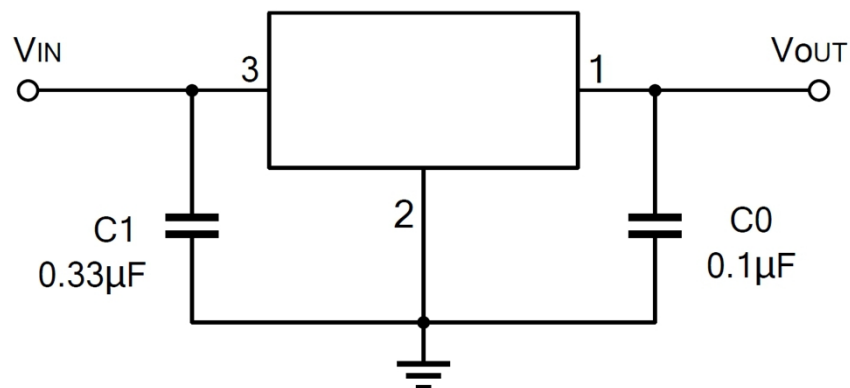
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$T_j=25^{\circ}C$	11.52	12.0	12.48	V
		$14.5V \leq V_i \leq 27V$ $I_o=5mA \sim 250mA$	11.40	12.0	12.60	
Load Regulation	ΔV_o	$T_j=25^{\circ}C, I_o=5mA \sim 500mA$		30	240	mV
		$T_j=25^{\circ}C, I_o=5mA \sim 200mA$		10	120	
Line Regulation	ΔV_o	$14.5V \leq V_i \leq 30V, T_j=25^{\circ}C$		7	100	mV
		$16V \leq V_i \leq 30V, T_j=25^{\circ}C$		3	50	
Quiescent Current	I_q	$T_j=25^{\circ}C$		4	6	mA
Quiescent Current Charge	ΔI_q	$15V \leq V_i \leq 30V, I_o=200mA$			0.8	mA
		$5mA \leq V_i \leq 350mA$			0.5	
Output noise Voltage	V_N	$10Hz \leq f \leq 100kHz$		40	200	μV
Dropout Voltage	V_d	$T_j=25^{\circ}C$		2.0		V
Ripple Rejection	RR	$16V \leq V_i \leq 30V, f=120Hz$, $T_j=25^{\circ}C$	56	80		dB
Short Circuit Current Limit	Isc	$T_j=25^{\circ}C$		600		mA

L78M15CDT(unless otherwise noted, $V_i=23V$, $I_o=250mA$, $0^{\circ}C < T_j < 125^{\circ}C$, $C_i=0.33\mu F$, $C_o=0.1\mu F$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$T_j=25^{\circ}C$	14.40	15.0	15.60	V
		$17.5V \leq V_i \leq 30V$ $I_o=5mA \sim 250mA$	14.25	15.0	15.75	
Load Regulation	ΔV_o	$T_j=25^{\circ}C, I_o=5mA \sim 500mA$		30	300	mV
		$T_j=25^{\circ}C, I_o=5mA \sim 200mA$		10	150	
Line Regulation	ΔV_o	$17.5V \leq V_i \leq 30V, T_j=25^{\circ}C$		8	100	mV
		$20V \leq V_i \leq 30V, T_j=25^{\circ}C$		4	50	
Quiescent Current	I_q	$T_j=25^{\circ}C$		4	6	mA
Quiescent Current Charge	ΔI_q	$18V \leq V_i \leq 30V, I_o=200mA$			0.8	mA
		$5mA \leq V_i \leq 350mA$			0.5	
Output noise Voltage	V_N	$10Hz \leq f \leq 100kHz$		70	300	μV
Dropout Voltage	V_d	$T_j=25^{\circ}C$		2.0		V
Ripple Rejection	RR	$18V \leq V_i \leq 30V, f=120Hz$, $T_j=25^{\circ}C$	48	55		dB
Short Circuit Current Limit	Isc	$T_j=25^{\circ}C$		600		mA



Application Circuit

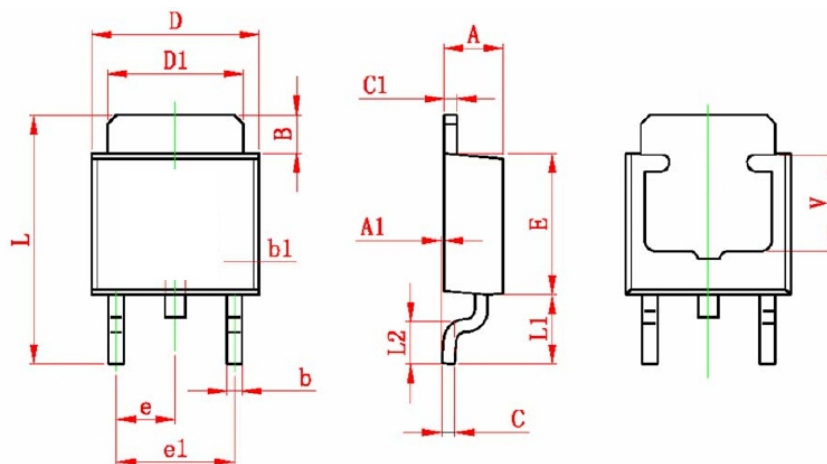


*Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

Outline Drawing

TO-252-2L

Unit: mm



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	5.700	0.213	0.224
e	2.300 TYP		0.091 TYP	
e1	4.500	4.700	0.177	0.185
L	9.500	9.900	0.374	0.390
L1	2.550	2.900	0.100	0.114
L2	1.400	1.780	0.055	0.070
V	3.80 REF		0.150 REF	



Attention

- Any and all HUA XUAN YANG ELECTRONICS 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 HUA XUAN YANG ELECTRONICS representative nearest you before using any HUA XUAN YANG ELECTRONICS products described or contained herein in such applications.
- HUA XUAN YANG ELECTRONICS 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 HUA XUAN YANG ELECTRONICS products described or contained herein.
- Specifications of any and all HUA XUAN YANG ELECTRONICS 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.
- HUA XUAN YANG ELECTRONICS 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 HUA XUAN YANG ELECTRONICS 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 HUA XUAN YANG ELECTRONICS CO.,LTD.
- Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. HUA XUAN YANG ELECTRONICS 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.
- 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 HUA XUAN YANG ELECTRONICS product that you intend to use.