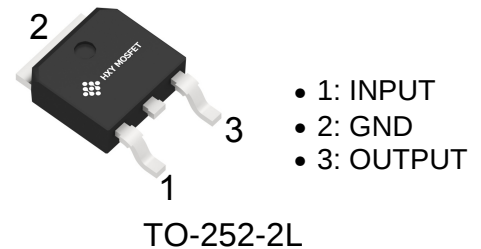




Features Pin Connection

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

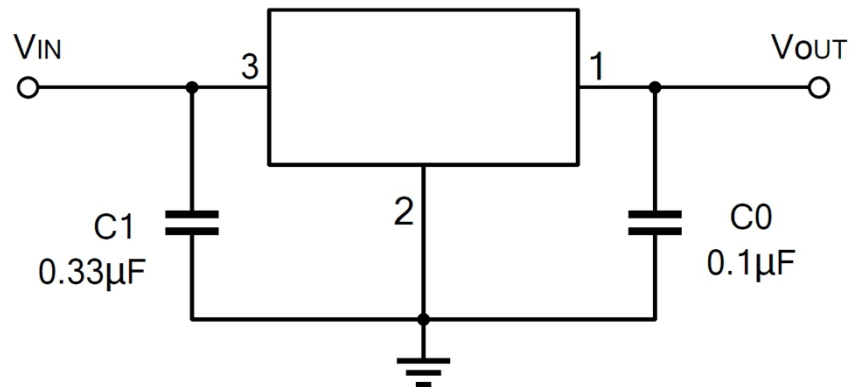
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$T_j=25^{\circ}C$	11.52	12.0	12.48	V
		$14.5V \leq V_i \leq 27V$ $I_o=5mA \sim 250mA$	11.40	12.0	12.60	
Load Regulation	ΔV_o	$T_j=25^{\circ}C, I_o=5mA \sim 500mA$		30	240	mV
		$T_j=25^{\circ}C, I_o=5mA \sim 200mA$		10	120	
Line Regulation	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

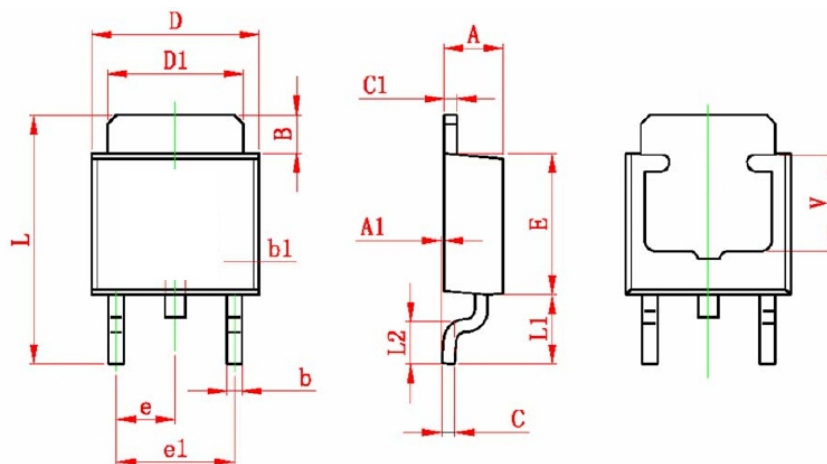


*Bypass capacitors are recommended for optimum stability and transient response and should be located as close as Possible to the regulators.

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	



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