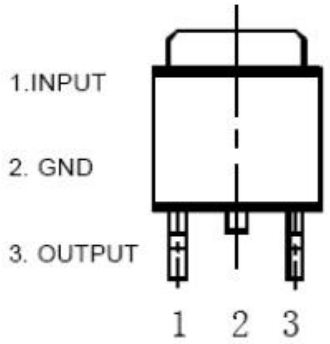
FEATURES PIN CONNECTION

- Maximum Output Current: 500mA
- Output Voltage is 3.3V,5.0V, 6.0V, 8.0V ,12.0V,15V
- Internal Thermal Overload Protection
- Internal Short Circuit Current Limiting
- L78M05 is available in TO-252-2L package

PIN CONNECTION



ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Parameter	Symbol	Value	Units
Input Voltage	Vi	36	V
Operating Temperature Range	Topr	-40~ +125	°C
Storage Temperature Range	Tstg	-85 ~ +150	°C

ELECTRICAL CHARACTERISTICS

78M33(unless otherwise noted, Vi=10V,Io=250mA, 0℃<Tj<125℃,Ci=0.33μF,Co=0.1μF)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	Vo	Tj=25°C	3.168	3.3	3.432	V
		5.8V≤Vi≤20V Io=5mA~250mA	3.135	3.3	3.465	
Load Regulation	Δ Vo	Tj=25°C,Io=5mA~500mA		25	100	mV
		Tj=25°C,Io=5mA~200mA		10	50	
Line Regulation	Δ Vo	5.8V≤Vi≤25V, Tj=25°C		4	100	mV
		6V≤Vi≤20V, Tj=25°C		2	50	
Quiescent Current	Iq	Tj=25°C		4	6	mA
Quiescent Current Charge	Δ Iq	6V≤Vi≤25V,Io=200mA			0.8	mA
		5mA≤Vi≤350mA			0.5	
Output noise Voltage	V_N	10Hz≤f≤100kHz		40	200	μV
Dropout Voltage	Vd	Tj=25°C		1.8		V
Ripple Rejection	RR	6V≤Vi≤20V,f=120Hz, Tj=25°C	56	80		dB
Short Circuit Current Limit	Isc	Tj=25°C		700		mA

78M05(unless otherwise noted, Vi=10V,Io=250mA, 0℃<Tj<125℃,Ci=0.33μF,Co=0.1μF)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	Vo	Tj=25°C	4.8	5.0	5.2	V
		7.5V≤Vi≤20V Io=5mA~250mA	4.75	5.0	5.25	
Load Regulation	Δ Vo	Tj=25°C,Io=5mA~500mA		25	100	mV
		Tj=25°C,Io=5mA~200mA		10	50	
Line Regulation	Δ Vo	7.5V≤Vi≤25V, Tj=25°C		4	100	mV
		8V≤Vi≤20V, Tj=25°C		2	50	
Quiescent Current	Iq	Tj=25°C		4	6	mA
Quiescent Current Charge	Δ Iq	8V≤Vi≤25V,Io=200mA			0.8	mA
		5mA≤Vi≤350mA			0.5	
Output noise Voltage	V_N	10Hz≤f≤100kHz		40	200	μV
Dropout Voltage	Vd	Tj=25°C		1.8		V
Ripple Rejection	RR	8V≤Vi≤20V,f=120Hz, Tj=25°C	56	80		dB
Short Circuit Current Limit	Isc	Tj=25°C		700		mA

ELECTRICAL CHARACTERISTICS

78M06(unless otherwise noted, Vi=11V,Io=250mA, 0℃<Tj<125℃,Ci=0.33μF,Co=0.1μF)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	Vo	Tj=25°C	5.76	6.0	6.24	V
		8.5V≤Vi≤21V Io=5mA~250mA	5.70	6.0	6.30	
Load Regulation	Δ Vo	Tj=25°C,Io=5mA~500mA		25	120	mV
		Tj=25°C,Io=5mA~200mA		10	60	
Line Regulation	Δ Vo	8.5V≤Vi≤26V, Tj=25°C		4	100	mV
		9V≤Vi≤21V, Tj=25°C		2	50	
Quiescent Current	Iq	Tj=25°C		4	6	mA
Quiescent Current Charge	Δ Iq	9V≤Vi≤26V,Io=200mA			0.8	mA
		5mA≤Vi≤350mA			0.5	
Output noise Voltage	V_N	10Hz≤f≤100kHz		40	200	μV
Dropout Voltage	Vd	Tj=25°C		1.8		V
Ripple Rejection	RR	9V≤Vi≤21V,f=120Hz, Tj=25°C	56	80		dB
Short Circuit Current Limit	Isc	Tj=25°C		700		mA

78M08(unless otherwise noted, Vi=14V,Io=250mA, 0℃<Tj<125℃,Ci=0.33μF,Co=0.1μF)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	Vo	Tj=25°C	7.68	8.0	8.32	V
		10.5V≤Vi≤23V Io=5mA~250mA	7.60	8.0	8.40	
Load Regulation	Δ Vo	Tj=25°C,Io=5mA~500mA		30	160	mV
		Tj=25°C,Io=5mA~200mA		10	80	
Line Regulation	Δ Vo	10.5V≤Vi≤28V, Tj=25°C		6	100	mV
		11V≤Vi≤23V, Tj=25°C		2	50	
Quiescent Current	Iq	Tj=25°C		4	6	mA
Quiescent Current Charge	Δ Iq	11V≤Vi≤28V,Io=200mA			0.8	mA
		5mA≤Vi≤350mA			0.5	
Output noise Voltage	V_N	10Hz≤f≤100kHz		40	200	μV
Dropout Voltage	Vd	Tj=25°C		1.8		V
Ripple Rejection	RR	11V≤Vi≤23V,f=120Hz, Tj=25°C	56	80		dB
Short Circuit Current Limit	Isc	Tj=25°C		700		mA

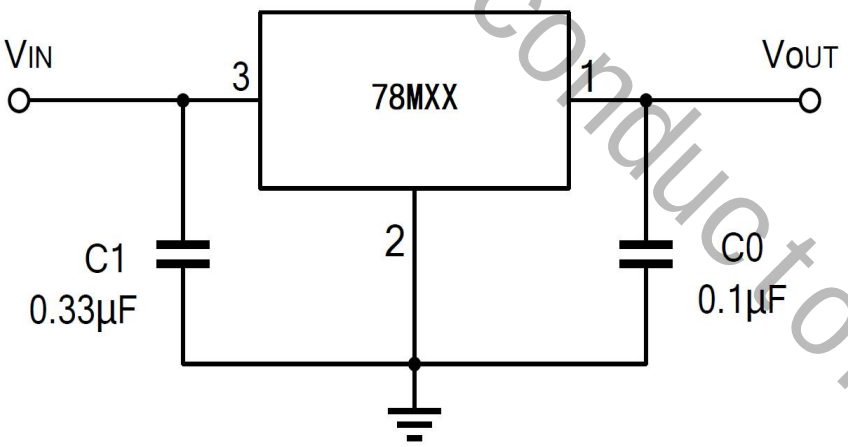
78M12(unless otherwise noted, Vi=19V,Io=250mA, 0℃<Tj<125℃,Ci=0.33μF,Co=0.1μF)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	Vo	Tj=25°C	11.52	12.0	12.48	V
		14.5V≤Vi≤27V Io=5mA~250mA	11.40	12.0	12.60	
Load Regulation	Δ Vo	Tj=25°C,Io=5mA~500mA		30	240	mV
		Tj=25°C,Io=5mA~200mA		10	120	
Line Regulation	Δ Vo	14.5V≤Vi≤30V, Tj=25°C		7	100	mV
		16V≤Vi≤30V, Tj=25°C		3	50	
Quiescent Current	Iq	Tj=25°C		4	6	mA
Quiescent Current Charge	Δ Iq	15V≤Vi≤30V,Io=200mA			0.8	mA
		5mA≤Vi≤350mA			0.5	
Output noise Voltage	V_N	10Hz≤f≤100kHz		40	200	μV
Dropout Voltage	Vd	Tj=25°C		2.0		V
Ripple Rejection	RR	16V≤Vi≤30V,f=120Hz, Tj=25°C	56	80		dB
Short Circuit Current Limit	Isc	Tj=25°C		700		mA

78M15(unless otherwise noted, Vi=23V,Io=250mA, 0℃<Tj<125℃,Ci=0.33μF,Co=0.1μF)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	Vo	Tj=25°C	14.40	15.0	15.60	V
		17.5V≤Vi≤30V Io=5mA~250mA	14.25	15.0	15.75	
Load Regulation	Δ Vo	Tj=25°C,Io=5mA~500mA		30	300	mV
		Tj=25°C,Io=5mA~200mA		10	150	
Line Regulation	Δ Vo	17.5V≤Vi≤30V, Tj=25°C		8	100	mV
		20V≤Vi≤30V, Tj=25°C		4	50	
Quiescent Current	Iq	Tj=25°C		4	6	mA
Quiescent Current Charge	Δ Iq	18V≤Vi≤30V,Io=200mA			0.8	mA
		5mA≤Vi≤350mA			0.5	
Output noise Voltage	V_N	10Hz≤f≤100kHz		70	300	μV
Dropout Voltage	Vd	Tj=25°C		2.0		V
Ripple Rejection	RR	18V≤Vi≤30V,f=120Hz, Tj=25°C	48	55		dB
Short Circuit Current Limit	Isc	Tj=25°C		700		mA

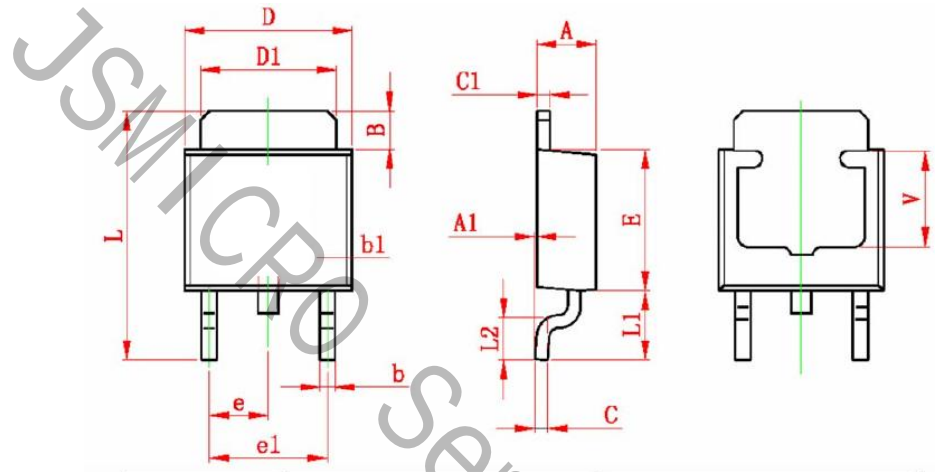
Application Circuit



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

Outline Drawing

TO252-2L 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	