贴片三端稳压器 NSP-78M05 Three-terminal positive voltage regulator

※ FEATURES

Maximum output Current

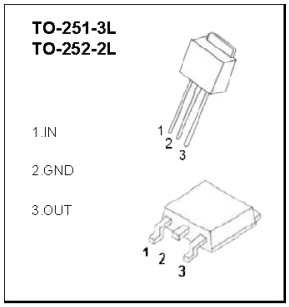
I_{OM}: 0.5 A

Output voltage

V_O: 5V

Continuous total dissipation

P_D: 1.25 W



※ ABSOLUTE MAXIMUM RATINGS

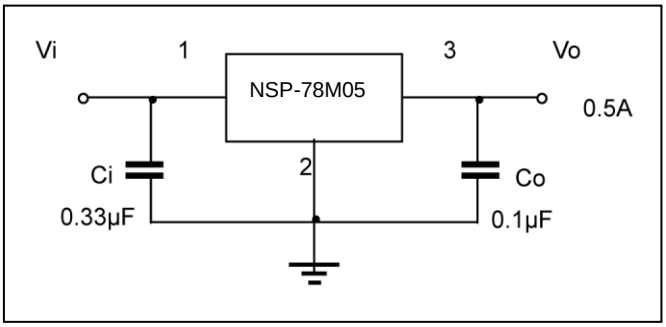
Parameter	Symbol	Value	Unit
Input Voltage	VI	25	V
Operating Junction Temperature Range	T_{OPR}	0-+125	℃
Storage Temperature Range	T_{STG}	-65-+150	℃

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JINCTION TEMPERATURE

(Vi=10V,Io=350mA, Ci=0.33μF,Co=0.1μF,unless otherwise specified)

Pa rameter	Symbol	Test conditions		Min	Typ	Max	Unit
Output Voltage	Vo		25℃	4.8	5	5.2	V
		7V≤V i≤20V, Io=5mA-350mA Po≤ 15W	0-125℃	4.75	5	5.25	V
Load Regulation	ΔVo	Io=5mA-0.5A	25℃		15	100	mV
		Io=5mA-200mA	25℃		5	50	mV
Line Regulation	ΔVo	7V≤V i≤25V, Io=200mA	25℃		3	100	mV
		8V≤V i≤25V, Io=200mA	25℃		1	50	mV
Quiescent Current	Iq		25℃		4.2	6	mA
Quiescent Current Change	ΔIq	8V≤V i≤25V, Io=200mA	0-125℃			0.8	mA
	ΔIq	5mA≤IO≤350mA	0-125℃			0.5	mA
Output Noise Voltage	V_N	10Hz≤ f ≤100KHz	25℃		40	200	μ V
Ripple Rejection	RR	8V≤Vi≤18V,f=120Hz,Io=300mA	0-125℃	62	80		dB
Dropout Voltage	Vd	Io=350mA	25℃		2	2.5	V
Short Circuit Current	Isc	Vi=10V	25℃		300		mA
Peak Current	Ipk		25℃		0.5		A

TYPICAL APPLICATION



贴片三端稳压器 NSP-78M06 Three-terminal positive voltage regulator

※ FEATURES

Maximum output Current

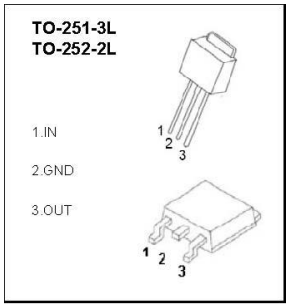
I_{OM}: 0.5 A

Output voltage

V_O: 6V

Continuous total dissipation

P_D: 1.25 W



※ ABSOLUTE MAXIMUM RATINGS

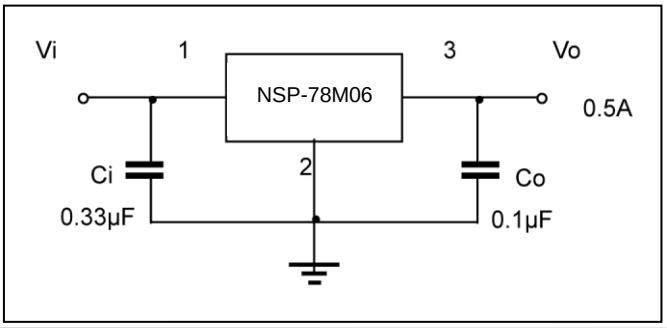
Parameter	Symbol	Value	Unit
Input Voltage	VI	25	V
Operating Junction Temperature Range	T_{OPR}	0-+125	℃
Storage Temperature Range	T_{STG}	-65-+150	℃

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JINCTION TEMPERATURE

(Vi=11V, IO=350mA,Ci=0.33μF,Co=0.1μF, unless otherwise specified)

Pa rameter	Symbol	Test conditions		Min	Typ	Max	Unit
Output Voltage	Vo		25℃	5.75	6	6.25	V
		8V≤V i≤21V, Io=5mA-350mA Po≤ 15W	0-125℃	5.7	6	6.3	V
Load Regulation	ΔVo	Io=5mA-0.5A	25℃		18	120	mV
		Io=5mA-200mA	25℃		10	60	mV
Line Regulation	ΔVo	8V≤V i≤25V, Io=200mA	25℃		5	100	mV
		9V≤V i≤25V, Io=200mA	25℃		1.5	50	mV
Quiescent Current	Iq		25℃		4.3	6	mA
Quiescent Current Change	ΔIq	9V≤V i≤25V, Io=200mA	0-125℃			0.8	mA
	ΔIq	5mA≤I O≤350mA	0-125℃			0.5	mA
Output Noise Voltage	V_N	10Hz≤ f ≤100KHz	25℃		45		uV
Ripple Rejection	RR	9V≤Vi≤19V,f=120Hz,Io=300mA	0-125℃	59	80		dB
Dropout Voltage	Vd	Io=350mA	25℃		2		V
Short Circuit Current	Isc	Vi=11V	25℃		270		mA
Peak Current	Ipk		25℃		0.5		A

TYPICAL APPLICATION



贴片三端稳压器 NSP-78M08 Three-terminal positive voltage regulator

※ FEATURES

Maximum output Current

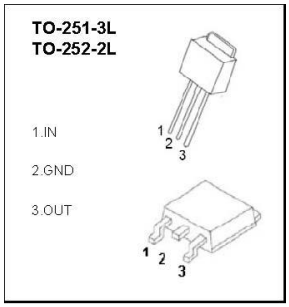
I_{OM}: 0.5 A

Output voltage

V_O: 8V

Continuous total dissipation

P_D: 1.25 W (Ta = 25 ℃)



※ ABSOLUTE MAXIMUM RATINGS

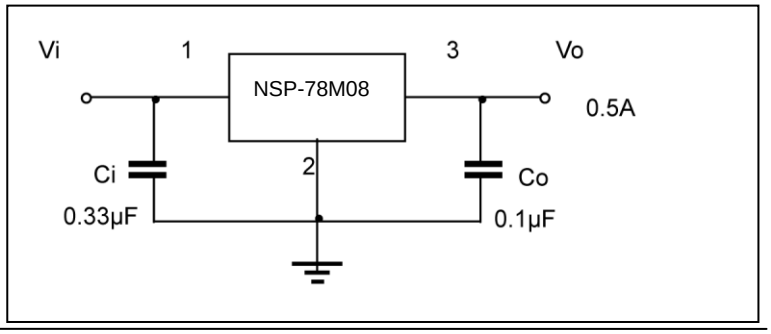
Parameter	Symbol	Value	Unit
Input Voltage	VI	25	V
Operating Junction Temperature Range	T_{OPR}	0-+125	℃
Storage Temperature Range	T_{STG}	-65-+150	℃

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JINCTION TEMPERATURE

(Vi=14V,Io=350mA,Ci=0.33μF,Co=0.1μF,unless otherwise specified)

Pa rameter	Symbol	Test conditions		Min	Typ	Max	Unit
Output Voltage	Vo		25℃	7.7	8	8.3	V
		10.5≤V i≤23V, Io=5mA-350mA Po≤ 15W	0-125℃	7.6	8	8.4	V
Load Regulation	ΔVo	Io=5mA-500mA	25℃		20	160	mV
		Io=5mA-200mA	25℃		10	80	mV
Line Regulation	ΔVo	10.5V≤V i≤25V, Io=200mA	25℃		6	100	mV
		11V≤V i≤25V, Io=200mA	25℃		2	50	mV
Quiescent Current	Iq		25℃		4.6	6	mA
Quiescent Current Change	ΔIq	10.5V≤V i≤25V, Io=200mA	0-125℃			0.8	mA
	ΔIq	5mA≤I O≤350mA	0-125℃			0.5	mA
Output Noise Voltage	V_N	10Hz≤ f ≤100KHz	25℃		52		μV
Ripple Rejection	RR	11.5V≤Vi≤21.5V,f=120Hz,Io=300mA	0-125℃	56	80		dB
Dropout Voltage	Vd	Io=350mA	25℃		2		V
Short Circuit Current	Isc	Vi=14V	25℃		250		mA
Peak Current	Ipk		25℃		0.5		A

TYPICAL APPLICATION



贴片三端稳压器 NSP-78M09 Three-terminal positive voltage regulator

※ FEATURES

Maximum output Current

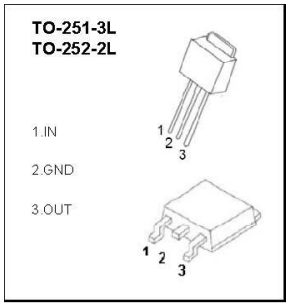
I_{OM}: 0.5 A

Output voltage

V_O: 9V

Continuous total dissipation

P_D: 1.25 W (Ta = 25 ℃)



※ ABSOLUTE MAXIMUM RATINGS

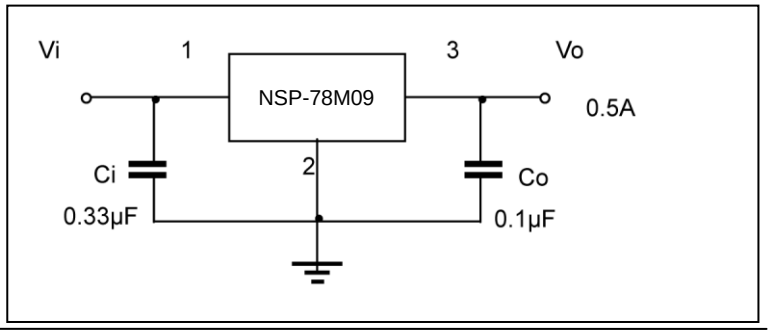
Parameter	Symbol	Value	Unit
Input Voltage	VI	25	V
Operating Junction Temperature Range	T_{OPR}	0-+125	℃
Storage Temperature Range	T_{STG}	-65-+150	℃

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JINCTION TEMPERATURE

(Vi=16V, Io=350mA,Ci=0.33μF,Co=0.1μF, unless otherwise specified)

Pa rameter	Symbol	Test conditions		Min	Typ	Max	Unit
Output Voltage	Vo		25℃	8.65	9	9.35	V
		11.5≤V i≤24V, Io=5mA-350mA, Po≤ 15W	0-125℃	8.55	9	9.45	V
Load Regulation	ΔVo	Io=5mA-500mA	25℃		20	180	mV
		Io=5mA-200mA	25℃		10	90	mV
Line Regulation	ΔVo	11.5V≤V i≤26V, Io=200mA	25℃		6	100	mV
		12V≤V i≤26V, Io=200mA	25℃		2	50	mV
Quiescent Current	Iq		25℃		4.6	6	mA
Quiescent Current Change	ΔIq	11.5V≤V i≤26V, Io=200mA	0-125℃			0.8	mA
	ΔIq	5mA≤I O≤350mA	0-125℃			0.5	mA
Output Noise Voltage	V_N	10Hz≤ f ≤100KHz	25℃		60		μV
Ripple Rejection	RR	13≤Vi≤23V,f=120Hz,Io=300mA	0-125℃	56	80		dB
Dropout Voltage	Vd	Io=350mA	25℃		2		V
Short Circuit Current	Isc	Vi=16V	25℃		250		mA
Peak Current	Ipk		25℃		0.5		A

TYPICAL APPLICATION



贴片三端稳压器 NSP-78M12 Three-terminal positive voltage regulator

※ FEATURES

Maximum output Current

I_{OM}：0.5 A

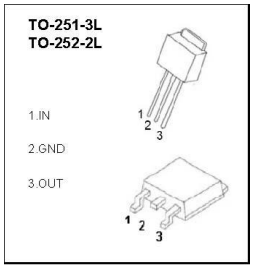
Output voltage

V_O：12V

Continuous total dissipation

P_D：1.25 W (Ta= 25 ℃)

15W (Tc= 25 ℃)



※ ABSOLUTE MAXIMUM RATINGS

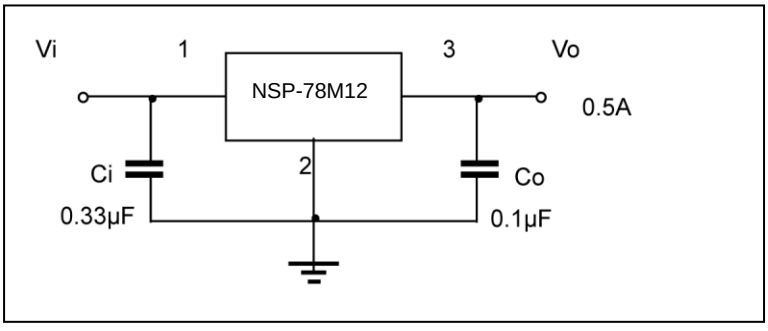
Parameter	Symbol	Value	Unit
Input Voltage	V_I	35	V
Operating Junction Temperature Range	T_{OPR}	0-+125	℃
Storage Temperature Range	T_{STG}	-65-+150	℃

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JINCTION TEMPERATURE

(Vi=19V,Io=350mA,Ci=0.33μF,Co=0.1μF,unless otherwise specified)

Pa rameter	Symbol	Test conditions		Min	Typ	Max	Unit
Output Voltage	Vo		25℃	11.5	12	12.5	V
		14.5≤Vi≤27V, Io=5mA-350mA Po≤ 1.25W	0-125℃	11.4	12	12.6	V
Load Regulation	ΔVo	Io=5mA-500mA	25℃		25	240	mV
		Io=5mA-200mA	25℃		10	120	mV
Line Regulation	ΔVo	14.5V≤Vi≤30V, Io=200mA	25℃		10	100	mV
		16V≤Vi≤30V, Io=200mA	25℃		3	50	mV
Quiescent Current	Iq		25℃		4.6	6	mA
Quiescent Current	ΔIq	14.5V≤Vi≤30V, Io=200mA	0-125℃			0.8	mA
Change	ΔIq	5mA≤IO≤350mA	0-125℃			0.5	mA
Output Noise Voltage	V_N	10Hz≤f≤100KHz	25℃		75		μV
Ripple Rejection	RR	15≤Vi≤25V,f=120Hz,Io=300mA	0-125℃	55	80		dB
Dropout Voltage	Vd	Io=350mA	25℃		2		V
Short Circuit Current	Isc	Vi=19V	25℃		240		mA
Peak Current	Ipk		25℃		0.7		A

TYPICAL APPLICATION



贴片三端稳压器 NSP-78M15 Three-terminal positive voltage regulator

※ FEATURES

Maximum output Current

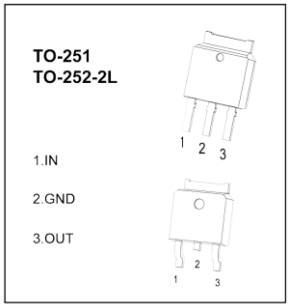
I_{OM}：0.5 A

Output voltage

V_O：15V

Continuous total dissipation

P_D：1.25 W (Ta= 25 ℃)



※ ABSOLUTE MAXIMUM RATINGS

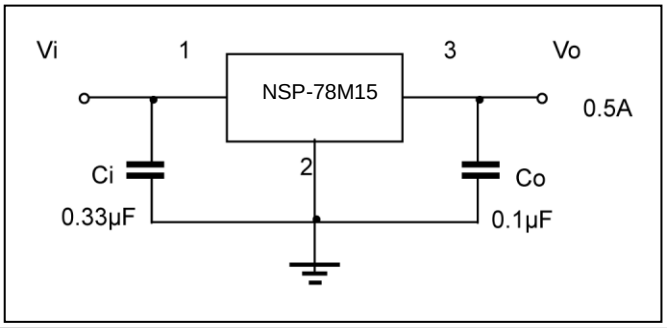
Parameter	Symbol	Value	Unit
Input Voltage	V_I	35	V
Operating Junction Temperature Range	T_{OPR}	0-+125	℃
Storage Temperature Range	T_{STG}	-65-+150	℃

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JINCTION TEMPERATURE

(Vi=23V,Io=350mA,Ci=0.33μF,Co=0.1μF,unless otherwise specified)

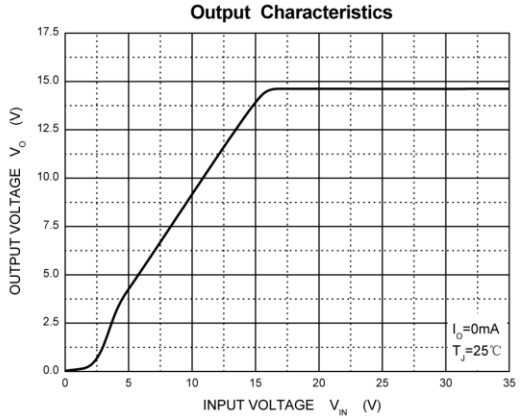
Pa rameter	Symbol	Test conditions		Min	Typ	Max	Unit
Output Voltage	Vo	Vi=23V,Io=350mA	25℃	14.4	15	15.6	V
		17.5≤Vi≤30V, Io=5mA~350mA Po≤15W	0-125℃	14.25	15	15.75	V
Load Regulation	ΔVo	Io=5mA~500mA	25℃			300	mV
		Io=5mA~200mA	25℃			150	mV
Line Regulation	ΔVo	17.5V≤Vi≤30V, Io=200mA	25℃			100	mV
		20V≤Vi≤26V, Io=200mA	25℃			50	mV
Quiescent Current	Iq	Vi=23V,Io=350mA	25℃			6	mA
Quiescent Current	ΔIq	17.5V≤Vi≤30V, Io=200mA	0-125℃			0.8	mA
Change	ΔIq	Vi=23V, Io=5mA~350mA	0-125℃			0.5	mA
Output Noise Voltage	V_N	10Hz≤f≤100KHz	25℃		90		μV
Ripple Rejection	RR	18.5≤Vi≤28.5V,f=120Hz,Io=300mA	0-125℃	54			dB
Dropout Voltage	Vd		25℃		2		V
Short Circuit Current	Isc	Vi=23V,Io=350mA	25℃	14.4	15	15.6	V
Peak Current	Ipk	17.5≤Vi≤30V, Io=5mA~350mA Po≤15W	0-125℃	14.25	15	15.75	V

TYPICAL APPLICATION

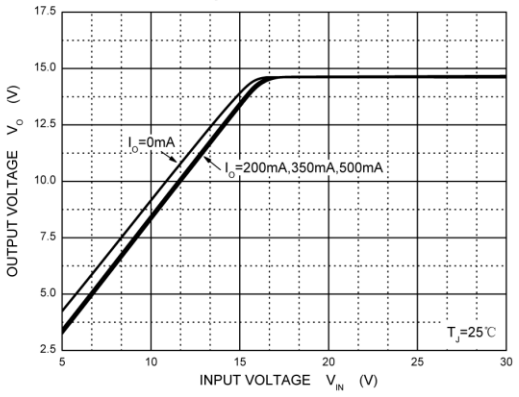


※ NSP-78M15Typical Characterisitics

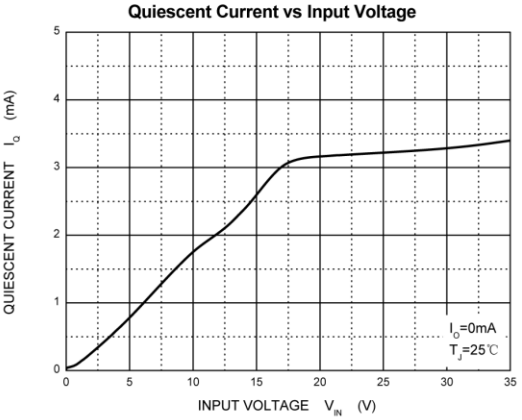
Output Characteristics



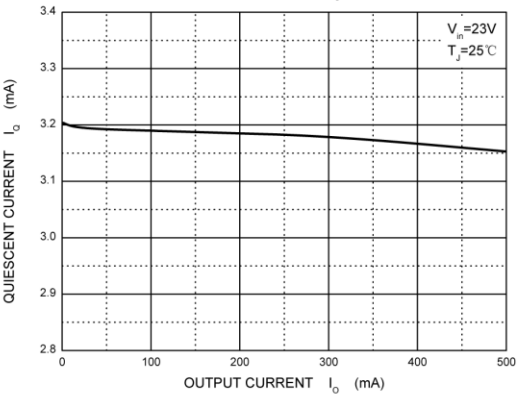
Dropout Characteristics



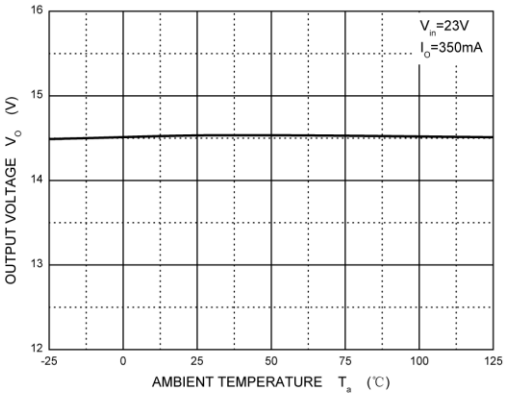
Quiescent Current vs Input Voltage



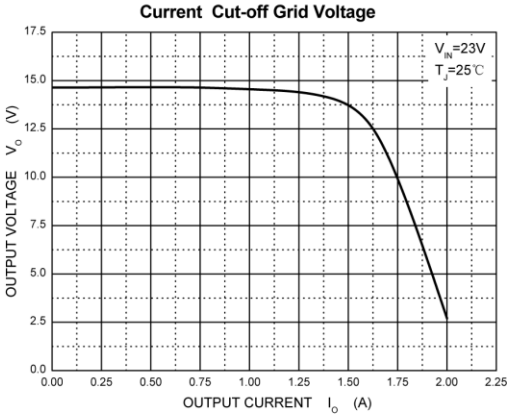
Quiescent Current vs Output Current



Output Voltage vs Ambient Temperature



Current Cut-off Grid Voltage



Power Derating Curve