

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

※ FEATURES

Maximum output Current

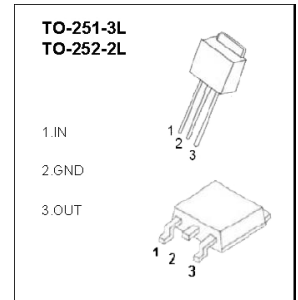
I_{OM} : 0.5 A

Output voltage

V_o : 5V

Continuous total dissipation

P_D : 1.25 W



※ ABSOLUTE MAXIMUM RATINGS

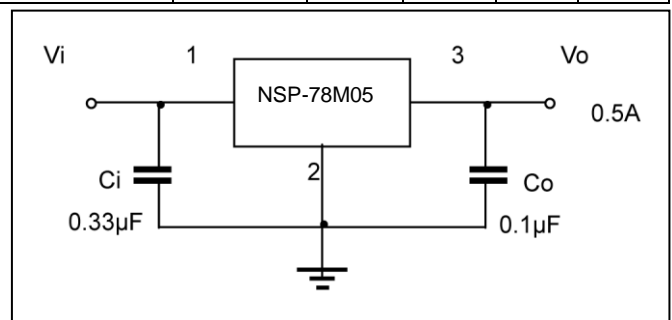
Parameter	Symbol	Value	Unit
Input Voltage	V_I	25	V
Operating Junction Temperature Range	T_{OPR}	0-+125	°C
Storage Temperature Range	T_{STG}	-65-+150	°C

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE

($V_i=10V, I_o=350mA, C_i=0.33\mu F, C_o=0.1\mu F$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	V_o	25°C	4.8	5	5.2	V
		$7V \leq V_i \leq 20V, I_o=5mA-350mA, P_o \leq 15W$	0-125°C	4.75	5	5.25
Load Regulation	ΔV_o	$I_o=5mA-0.5A$	25°C	15	100	mV
		$I_o=5mA-200mA$	25°C	5	50	mV
Line Regulation	ΔV_o	$7V \leq V_i \leq 25V, I_o=200mA$	25°C	3	100	mV
		$8V \leq V_i \leq 25V, I_o=200mA$	25°C	1	50	mV
Quiescent Current	I_q	25°C	4.2	6	mA	
Quiescent Current Change	ΔI_q	$8V \leq V_i \leq 25V, I_o=200mA$	0-125°C		0.8	mA
	ΔI_q	$5mA \leq I_o \leq 350mA$	0-125°C		0.5	mA
Output Noise Voltage	V_N	$10Hz \leq f \leq 100KHz$	25°C	40	200	μV
Ripple Rejection	RR	$8V \leq V_i \leq 18V, f=120Hz, I_o=300mA$	0-125°C	62	80	dB
Dropout Voltage	V_d	$I_o=350mA$	25°C	2	2.5	V
Short Circuit Current	I_{sc}	$V_i=10V$	25°C	300		mA
Peak Current	I_{pk}	25°C		0.5		A

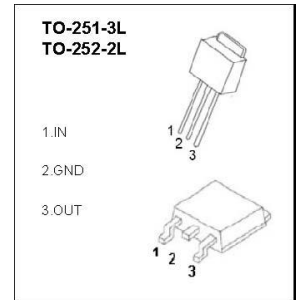
TYPICAL APPLICATION



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

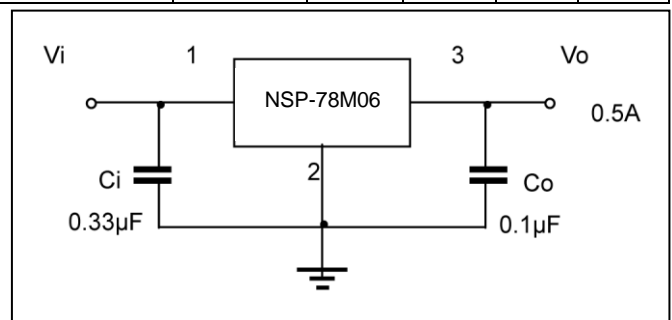
Parameter	Symbol	Value	Unit
Input Voltage	V_I	25	V
Operating Junction Temperature Range	T_{OPR}	0-+125	°C
Storage Temperature Range	T_{STG}	-65-+150	°C

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE

($V_i=11V, I_O=350mA, C_i=0.33\mu F, C_o=0.1\mu F$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Output Voltage	V_O		25°C	5.75	6	6.25	V
		$8V \leq V_i \leq 21V, I_o=5mA-350mA, P_o \leq 15W$	0-125°C	5.7	6	6.3	V
Load Regulation	ΔV_O	$I_o=5mA-0.5A$	25°C		18	120	mV
		$I_o=5mA-200mA$	25°C		10	60	mV
Line Regulation	ΔV_O	$8V \leq V_i \leq 25V, I_o=200mA$	25°C		5	100	mV
		$9V \leq V_i \leq 25V, I_o=200mA$	25°C		1.5	50	mV
Quiescent Current	I_q		25°C	4.3	6	mA	
Quiescent Current Change	ΔI_q	$9V \leq V_i \leq 25V, I_o=200mA$	0-125°C		0.8	mA	
	ΔI_q	$5mA \leq I_O \leq 350mA$	0-125°C		0.5	mA	
Output Noise Voltage	V_N	$10Hz \leq f \leq 100KHz$	25°C		45	uV	
Ripple Rejection	RR	$9V \leq V_i \leq 19V, f=120Hz, I_o=300mA$	0-125°C	59	80	dB	
Dropout Voltage	V_d	$I_o=350mA$	25°C		2	V	
Short Circuit Current	I_{sc}	$V_i=11V$	25°C		270	mA	
Peak Current	I_{pk}		25°C		0.5	A	

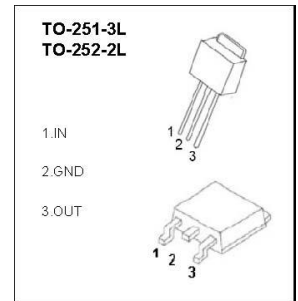
TYPICAL APPLICATION



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 ($T_a = 25\text{ }^\circ\text{C}$)



※ ABSOLUTE MAXIMUM RATINGS

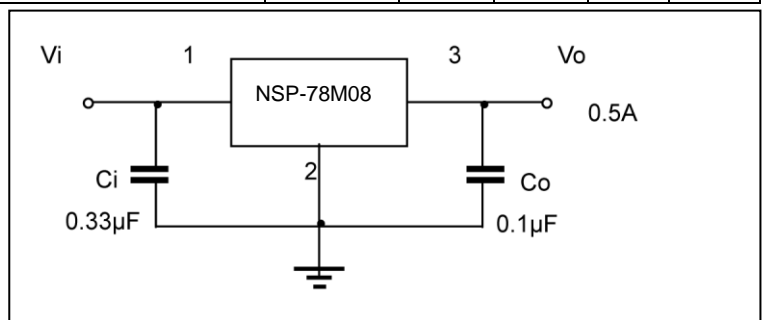
Parameter	Symbol	Value	Unit
Input Voltage	V_I	25	V
Operating Junction Temperature Range	T_{OPR}	0-+125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65-+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE

($V_i=14\text{V}$, $I_o=350\text{mA}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	V_o	25°C	7.7	8	8.3	V
		$10.5 \leq V_i \leq 23\text{V}$, $I_o=5\text{mA}-350\text{mA}$ $P_o \leq 15\text{W}$	$0-125^\circ\text{C}$	7.6	8	8.4
Load Regulation	ΔV_o	$I_o=5\text{mA}-500\text{mA}$	25°C	20	160	mV
		$I_o=5\text{mA}-200\text{mA}$	25°C	10	80	mV
Line Regulation	ΔV_o	$10.5\text{V} \leq V_i \leq 25\text{V}$, $I_o=200\text{mA}$	25°C	6	100	mV
		$11\text{V} \leq V_i \leq 25\text{V}$, $I_o=200\text{mA}$	25°C	2	50	mV
Quiescent Current	I_q	25°C		4.6	6	mA
Quiescent Current Change	ΔI_q	$10.5\text{V} \leq V_i \leq 25\text{V}$, $I_o=200\text{mA}$	$0-125^\circ\text{C}$		0.8	mA
	ΔI_q	$5\text{mA} \leq I_o \leq 350\text{mA}$	$0-125^\circ\text{C}$		0.5	mA
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$	25°C	52		μV
Ripple Rejection	RR	$11.5\text{V} \leq V_i \leq 21.5\text{V}$, $f=120\text{Hz}$, $I_o=300\text{mA}$	$0-125^\circ\text{C}$	56	80	dB
Dropout Voltage	V_d	$I_o=350\text{mA}$	25°C	2		V
Short Circuit Current	I_{sc}	$V_i=14\text{V}$	25°C	250		mA
Peak Current	I_{pk}	25°C		0.5		A

TYPICAL APPLICATION



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

※ FEATURES

Maximum output Current

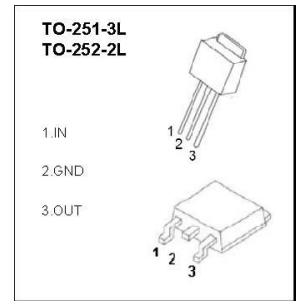
I_{OM} : 0.5 A

Output voltage

V_O : 9V

Continuous total dissipation

P_D : 1.25 W ($T_a = 25\text{ }^\circ\text{C}$)



※ ABSOLUTE MAXIMUM RATINGS

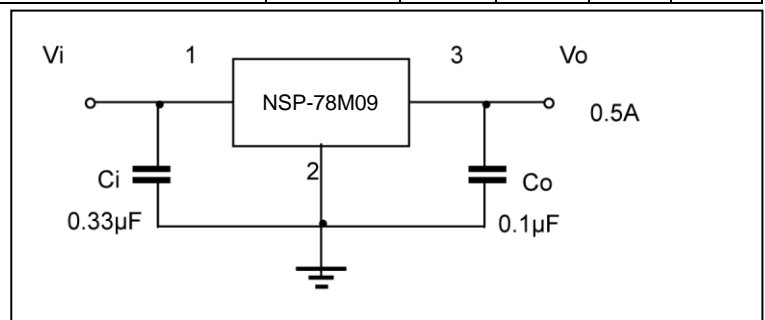
Parameter	Symbol	Value	Unit
Input Voltage	V_I	25	V
Operating Junction Temperature Range	T_{OPR}	0-+125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65-+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE

($V_i=16\text{V}$, $I_o=350\text{mA}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Output Voltage	V_o		25 $^\circ\text{C}$	8.65	9	9.35	V
		$11.5\text{V} \leq V_i \leq 24\text{V}$, $I_o=5\text{mA}-350\text{mA}$, $P_o \leq 15\text{W}$	0-125 $^\circ\text{C}$	8.55	9	9.45	V
Load Regulation	ΔV_o	$I_o=5\text{mA}-500\text{mA}$	25 $^\circ\text{C}$		20	180	mV
		$I_o=5\text{mA}-200\text{mA}$	25 $^\circ\text{C}$		10	90	mV
Line Regulation	ΔV_o	$11.5\text{V} \leq V_i \leq 26\text{V}$, $I_o=200\text{mA}$	25 $^\circ\text{C}$		6	100	mV
		$12\text{V} \leq V_i \leq 26\text{V}$, $I_o=200\text{mA}$	25 $^\circ\text{C}$		2	50	mV
Quiescent Current	I_q		25 $^\circ\text{C}$		4.6	6	mA
Quiescent Current Change	ΔI_q	$11.5\text{V} \leq V_i \leq 26\text{V}$, $I_o=200\text{mA}$	0-125 $^\circ\text{C}$			0.8	mA
	ΔI_q	$5\text{mA} \leq I_o \leq 350\text{mA}$	0-125 $^\circ\text{C}$			0.5	mA
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$	25 $^\circ\text{C}$		60	μV	
Ripple Rejection	RR	$13 \leq V_i \leq 23\text{V}$, $f=120\text{Hz}$, $I_o=300\text{mA}$	0-125 $^\circ\text{C}$	56	80	dB	
Dropout Voltage	V_d	$I_o=350\text{mA}$	25 $^\circ\text{C}$		2	V	
Short Circuit Current	I_{sc}	$V_i=16\text{V}$	25 $^\circ\text{C}$		250	mA	
Peak Current	I_{pk}		25 $^\circ\text{C}$		0.5	A	

TYPICAL APPLICATION



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

※ FEATURES

Maximum output Current

$I_{OM} : 0.5 \text{ A}$

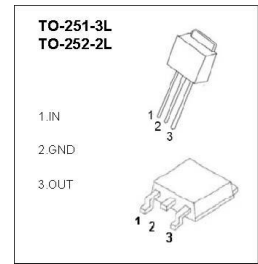
Output voltage

$V_O : 12\text{V}$

Continuous total dissipation

$P_D : 1.25 \text{ W (} T_a = 25 \text{ } ^\circ\text{C)}$

$15\text{W (} T_c = 25 \text{ } ^\circ\text{C)}$



※ ABSOLUTE MAXIMUM RATINGS

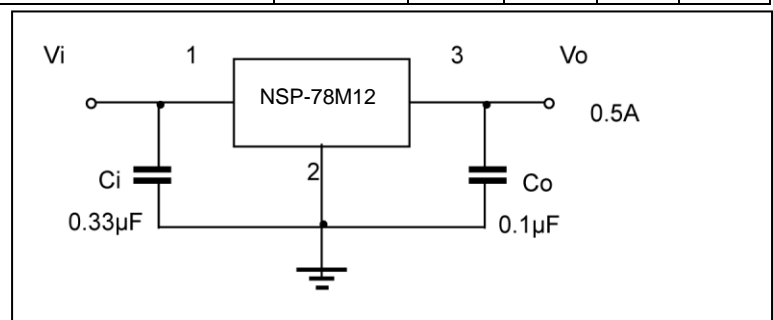
Parameter	Symbol	Value	Unit
Input Voltage	V_I	35	V
Operating Junction Temperature Range	T_{OPR}	0-+125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65-+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE

($V_i=19\text{V}, I_o=350\text{mA}, C_i=0.33\mu\text{F}, C_o=0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	V_o	25°C	11.5	12	12.5	V
		$14.5 \leq V_i \leq 27\text{V}, I_o=5\text{mA}-350\text{mA } P_o \leq 1.25\text{W}$	0-125 $^\circ\text{C}$	11.4	12	12.6
Load Regulation	ΔV_o	$I_o=5\text{mA}-500\text{mA}$	25°C	25	240	mV
		$I_o=5\text{mA}-200\text{mA}$	25°C	10	120	mV
Line Regulation	ΔV_o	$14.5\text{V} \leq V_i \leq 30\text{V}, I_o=200\text{mA}$	25°C	10	100	mV
		$16\text{V} \leq V_i \leq 30\text{V}, I_o=200\text{mA}$	25°C	3	50	mV
Quiescent Current	I_q	25°C		4.6	6	mA
Quiescent Current Change	ΔI_q	$14.5\text{V} \leq V_i \leq 30\text{V}, I_o=200\text{mA}$	0-125 $^\circ\text{C}$		0.8	mA
	ΔI_q	$5\text{mA} \leq I_o \leq 350\text{mA}$	0-125 $^\circ\text{C}$		0.5	mA
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$	25°C	75		μV
Ripple Rejection	RR	$15 \leq V_i \leq 25\text{V}, f=120\text{Hz}, I_o=300\text{mA}$	0-125 $^\circ\text{C}$	55	80	dB
Dropout Voltage	V_d	$I_o=350\text{mA}$	25°C	2		V
Short Circuit Current	I_{sc}	$V_i=19\text{V}$	25°C	240		mA
Peak Current	I_{pk}	25°C		0.7		A

TYPICAL APPLICATION



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

※ FEATURES

Maximum output Current

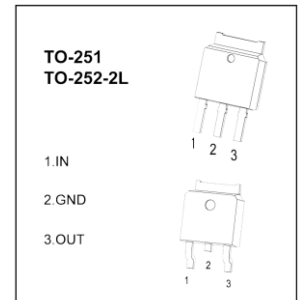
$I_{OM} : 0.5 A$

Output voltage

$V_O : 15V$

Continuous total dissipation

$P_D : 1.25 W (T_a = 25 ^\circ C)$



※ ABSOLUTE MAXIMUM RATINGS

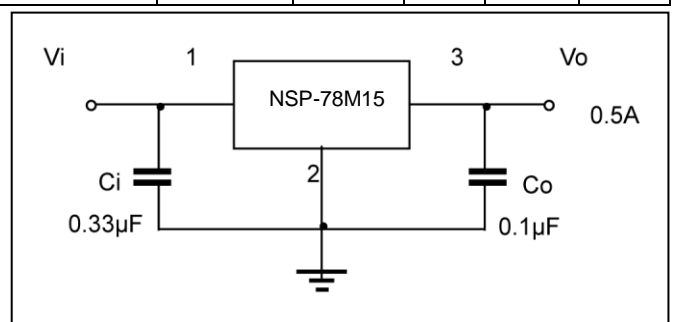
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Operating Junction Temperature Range	T_{OPR}	0-+125	$^\circ C$
Storage Temperature Range	T_{STG}	-65-+150	$^\circ C$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE

($V_i=23V, I_o=350mA, C_i=0.33\mu F, C_o=0.1\mu F$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Output Voltage	V_o	$V_i=23V, I_o=350mA$	25 $^\circ C$	14.4	15	15.6	V
		$17.5 \le V_i \le 30V, I_o=5mA \sim 350mA, P_o \le 15W$	0-125 $^\circ C$	14.25	15	15.75	V
Load Regulation	ΔV_o	$I_o=5mA \sim 500mA$	25 $^\circ C$			300	mV
		$I_o=5mA \sim 200mA$	25 $^\circ C$			150	mV
Line Regulation	ΔV_o	$17.5V \le V_i \le 30V, I_o=200mA$	25 $^\circ C$			100	mV
		$20V \le V_i \le 26V, I_o=200mA$	25 $^\circ C$			50	mV
Quiescent Current	I_q	$V_i=23V, I_o=350mA$	25 $^\circ C$			6	mA
Quiescent Current Change	ΔI_q	$17.5V \le V_i \le 30V, I_o=200mA$	0-125 $^\circ C$			0.8	mA
		$V_i=23V, I_o=5mA \sim 350mA$	0-125 $^\circ C$			0.5	mA
Output Noise Voltage	V_N	10Hz $\le f \le$ 100KHz	25 $^\circ C$			90	μV
Ripple Rejection	RR	$18.5 \le V_i \le 28.5V, f=120Hz, I_o=300mA$	0-125 $^\circ C$	54			dB
Dropout Voltage	V_d		25 $^\circ C$			2	V
Short Circuit Current	I_{sc}	$V_i=23V, I_o=350mA$	25 $^\circ C$	14.4	15	15.6	V
Peak Current	I_{pk}	$17.5 \le V_i \le 30V, I_o=5mA \sim 350mA, P_o \le 15W$	0-125 $^\circ C$	14.25	15	15.75	V

TYPICAL APPLICATION



※ NSP-78M15 Typical Characteristics

