

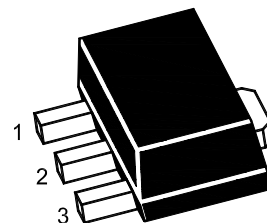
## Features

- Input voltage: up to 35V
- Output voltage: 5V、12V
- Output current up to 500 mA, internal thermal overload protection and short-circuit current limiting.

## Marking Code

- TN78M05SQ: 78M05
- TN78M12SQ: 78M12

## SOT-89



1. VOUT 2. GND 3. VIN

## Absolute Maximum Ratings

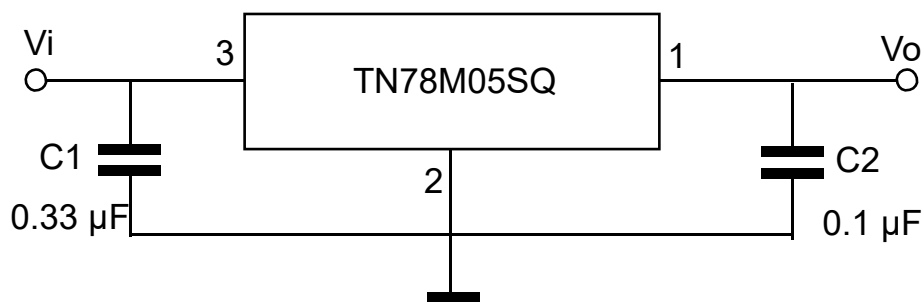
Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Input Voltage	$V_I$	35	V
Output Current	$I_O$	500	mA
Maximum Power Dissipation <sup>Note1</sup>	$P_D$	1	W
Junction Temperature	$T_J$	150	°C
Operating Temperature Range	$T_{OPR}$	-40 to +125	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C

### Note:

1. P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.

## Typical Application Circuit



TN78M05SQ Electrical Characteristics

Ratings at  $V_I=10V, I_O=300mA, C_I=0.33\mu F, C_O=0.1\mu F$ , With heat sink, unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$V_O$		4.8	5.0	5.2	V
		$I_O=5mA$ to $350mA$ , $V_I=7V$ to $20V$	4.75	5.0	5.25	V
Line Regulation	$\Delta V_O$	$V_I=7V$ to $25V, I_O=200mA$	--	--	100	mV
		$V_I=8V$ to $25V, I_O=200mA$	--	--	50	mV
Load Regulation	$\Delta V_O$	$I_O=5mA$ to $500mA, T_J=25^{\circ}C$	--	--	100	mV
		$I_O=5mA$ to $200mA, T_J=25^{\circ}C$	--	--	50	mV
Ripple Rejection	RR	$V_I=8V$ to $18V$ , $f=120Hz, I_O=300mA$	62	--	--	dB
Dropout Voltage	$V_D$		--	2	--	V
Quiescent Current	$I_Q$		--	--	6	mA
Quiescent Current Change	$\Delta I_Q$	$V_I=8V$ to $25V, I_O=200mA$	--	--	0.8	mA
		$I_O=5mA$ to $350mA$	--	--	0.5	mA
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100KHz$	--	40	--	$\mu V$

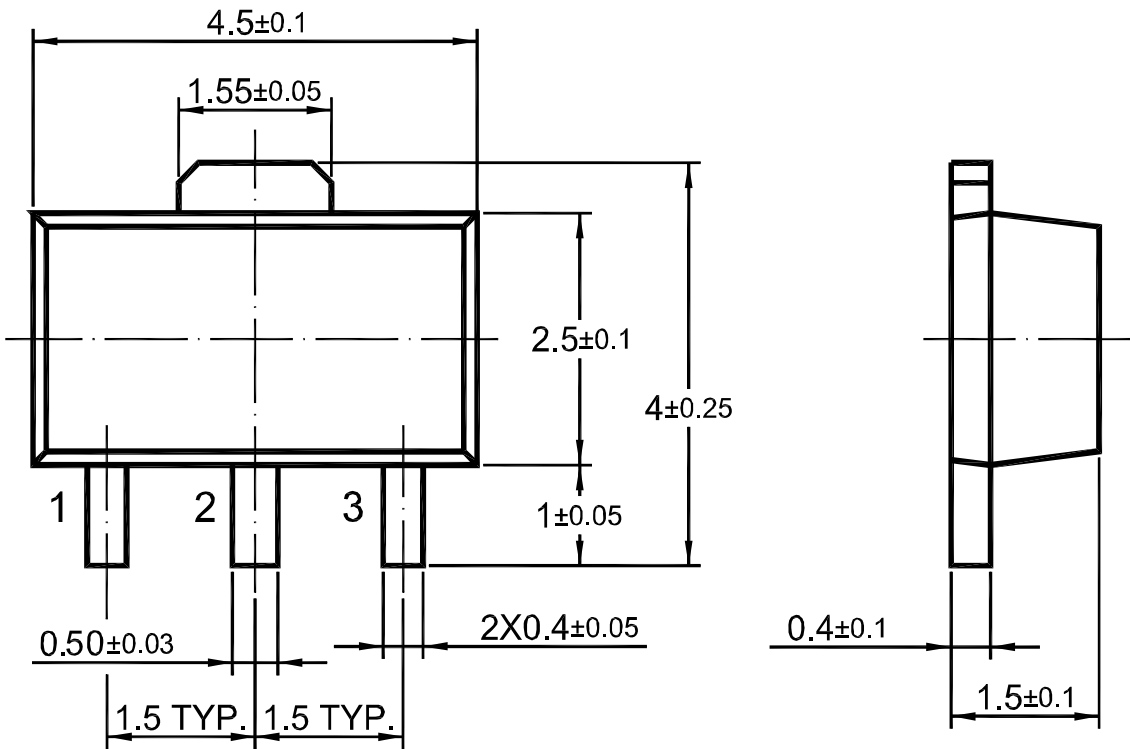
TN78M12SQ Electrical Characteristics

Ratings at T<sub>A</sub> = 25°C , With heak sink, V<sub>I</sub>=19V, I<sub>O</sub>=40mA, C<sub>I</sub>=0.33μF,C<sub>O</sub>=0.1μF,unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	V <sub>O</sub>		11.5	12	12.5	V
		I <sub>O</sub> =5mA to 350mA, V <sub>I</sub> =14.5V to 27V	11.4	12	12.6	V
Line Regulation	ΔV <sub>O</sub>	V <sub>I</sub> =14.5V to 30V, I <sub>O</sub> =200mA	--	--	240	mV
		V <sub>I</sub> =16V to 30V, I <sub>O</sub> =200mA	--	--	120	mV
Load Regulation	ΔV <sub>O</sub>	I <sub>O</sub> =5mA to 500mA, T <sub>J</sub> =25°C	--	--	240	mV
		I <sub>O</sub> =5mA to 200 mA, T <sub>J</sub> =25°C	--	--	120	mV
Ripple Rejection	RR	V <sub>I</sub> =15V to 25V, f=120Hz, I <sub>O</sub> =300mA	55	--	--	dB
Dropout Voltage	V <sub>D</sub>		--	2	--	V
Quiescent Current	I <sub>Q</sub>		--	--	6	mA
Quiescent Current Change	ΔI <sub>Q</sub>	V <sub>I</sub> =14.5V to 30V,I <sub>O</sub> =200mA	--	--	0.8	mA
		I <sub>O</sub> =5mA to 350mA	--	--	0.5	mA
Output Noise Voltage	V <sub>N</sub>	10Hz≤f≤100kHz	--	75	--	μV/V <sub>O</sub>

Package Outline

SOT-89 Dimensions in mm



Ordering Information

Device	Package	Shipping
TN78MXXSQ	SOT-89	1,000PCS/Reel&7inches
		3,000PCS/Reel&13inches

Contact Information

TANI website: <http://www.tanisemi.com> Email:tani@tanisemi.com

For additional information, please contact your local Sales Representative.

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