

Description

The TN79MXXTE series of three-terminal negative regulators are available in TO-252 package. Each type employs internal current limiting, thermal shut-down and safe area protection, making it essentially indestructible. If adequate heat sinking is provided, It can deliver 0.5A output current, Although designed as fixed voltage regulator, This device can be used with external components to obtain adjustable voltage and currents.

Features

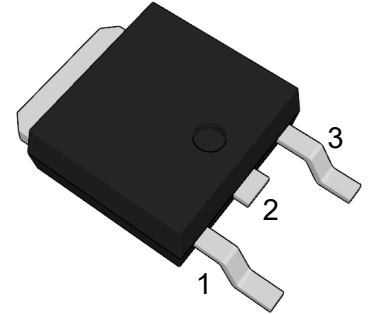
- Input voltage: up to -35V
- Output voltage: -5V,-12V,-15V
- Output current up to 500 mA
- Thermal overload protection
- Short circuit current limiting

Applications

- DC motor drivers
- Household electric appliances
- Industrial power supplies
- Test and measurement equipment

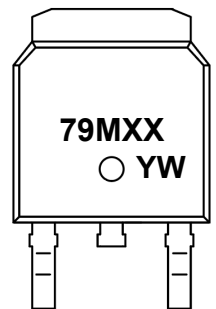
3-Terminal Voltage Regulators

TO-252



1. GND 2. VIN 3. VOUT

Ordering Information

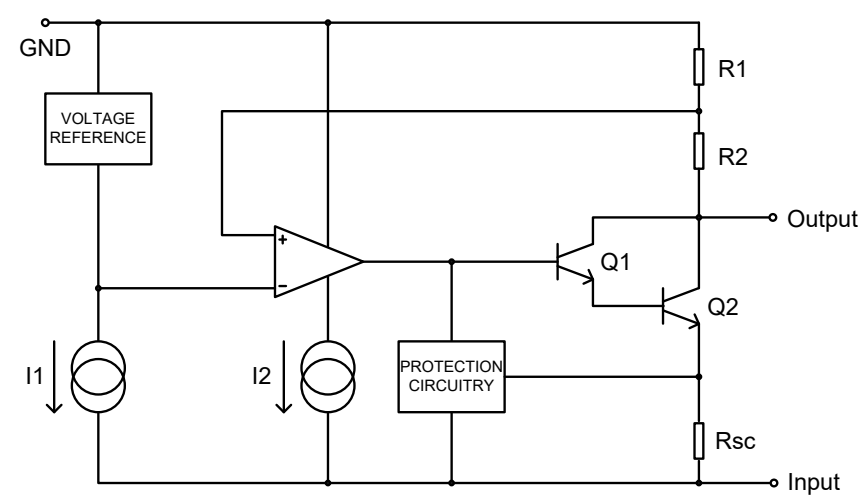
Orderable Device	Package	Reel (inch)	Package Qty (PCS)	Eco Plan ^{Note}	MSL Level	Marking Code
TN79M05TE	TO-252	13	2500	RoHS & Green	MSL3	 <p>79MXX: Product code e.g. TN79M05TE:79M05 YW: Year code and Week code</p>
TN79M12TE						
TN79M15TE						

Note:

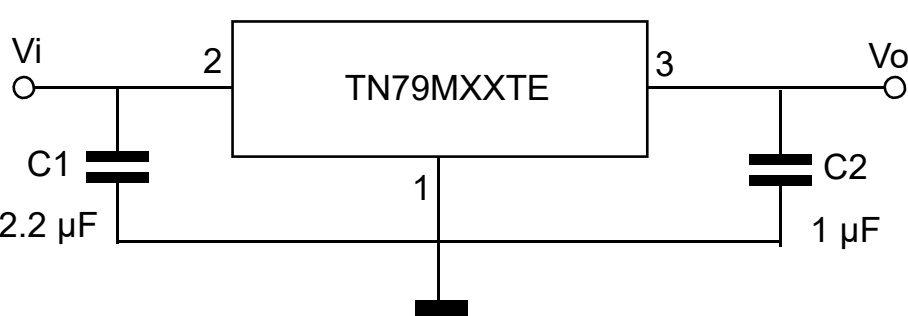
RoHS: TN defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials.

Green: TN defines "Green" to mean Halogen-Free and Antimony-Free.

Function Block Diagram



Typical Application Circuit



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	P_D	1.25	W
Operating Temperature Range	T_{OPR}	-40 to +125	°C
Storage Temperature Range	T_{STG}	-65 to +150	°C

TN79M05TE Electrical Characteristics

$V_I = -10V$, $I_O = 250mA$, $T_J = 25^{\circ}C$, $C_I = 2.2\mu F$, $C_O = 1\mu F$, 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	ΔV_O	$V_I = -7V$ to $-25V$	--	--	100	mV
		$V_I = -8V$ to $-12V$	--	--	50	mV
Load Regulation	ΔV_O	$I_O = 5mA$ to $0.5A$	--	--	100	mV
		$I_O = 150mA$ to $350mA$	--	--	50	mV
Ripple Rejection	RR	$\Delta V_I = 10V$, $f = 120Hz$	45	54	--	dB
Dropout Voltage	V_D	$I_O = 0.5A$	--	2	--	V
Quiescent Current	I_Q		--	--	6	mA
Temperature coefficient of V_O	$\Delta V_O / \Delta T$	$I_O = 5mA$	--	0.5	--	mV/ $^{\circ}C$
Quiescent Current Change	ΔI_Q	$I_O = 5mA$ to $0.5A$	--	--	0.5	mA
		$V_I = -8V$ to $-25V$	--	--	1	mA
Output Noise Voltage	V_N	$10Hz \leq f \leq 100kHz$, $T_A = 25^{\circ}C$	--	200	--	μV

TN79M12TE Electrical Characteristics

$V_I = -19V$, $I_O = 250mA$, $T_J = 25^{\circ}C$, $C_I = 2.2\mu F$, $C_O = 1\mu F$, unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$-V_O$		11.5	12	12.5	V
		$I_O = 5mA$ to $350mA$ $V_I = -14.5V$ to $-20V$	11.4	12	12.6	V
Line Regulation	ΔV_O	$V_I = -14.5V$ to $-30V$	--	--	240	mV
		$V_I = -16V$ to $-22V$	--	--	120	mV
Load Regulation	ΔV_O	$I_O = 5mA$ to $0.5A$	--	--	240	mV
		$I_O = 150mA$ to $350mA$	--	--	120	mV
Ripple Rejection	RR	$\Delta V_I = 10V$, $f = 120Hz$	45	54	--	dB
Dropout Voltage	V_D	$I_O = 0.5A$	--	2	--	V
Quiescent Current	I_Q		--	--	6	mA
Temperature coefficient of V_O	$\Delta V_O / \Delta T$	$I_O = 5mA$	--	0.5	--	mV/ $^{\circ}C$
Quiescent Current Change	ΔI_Q	$I_O = 5mA$ to $0.5A$	--	--	0.5	mA
		$V_I = -14.5V$ to $-30V$	--	--	0.8	mA
Output Noise Voltage	V_N	$10Hz \leq f \leq 100kHz$, $T_A = 25^{\circ}C$	--	200	--	μV

TN79M15TE Electrical Characteristics

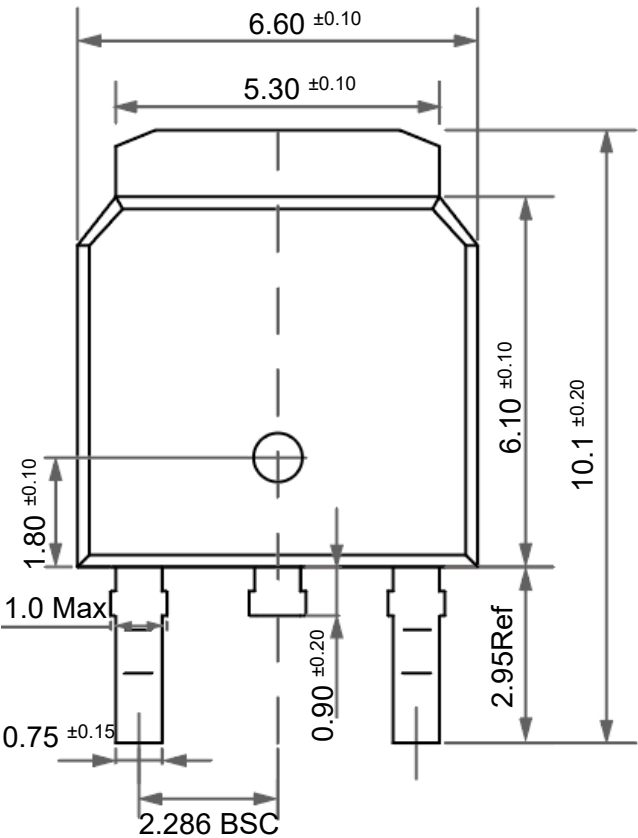
$V_I = -23V$, $I_O = 250mA$, $T_J = 25^{\circ}C$, $C_I = 2.2\mu F$, $C_O = 1\mu F$, unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$-V_O$		11.5	12	12.5	V
		$I_O = 5mA$ to $350mA$ $V_I = -14.5V$ to $-20V$	11.4	12	12.6	V
Line Regulation	ΔV_O	$V_I = -14.5V$ to $-30V$	--	--	240	mV
		$V_I = -16V$ to $-22V$	--	--	120	mV
Load Regulation	ΔV_O	$I_O = 5mA$ to $0.5A$	--	--	240	mV
		$I_O = 150mA$ to $350mA$	--	--	120	mV
Ripple Rejection	RR	$\Delta V_I = 10V$, $f = 120Hz$	45	54	--	dB
Dropout Voltage	V_D	$I_O = 0.5A$	--	2	--	V
Quiescent Current	I_Q		--	--	6	mA
Temperature coefficient of V_O	$\Delta V_O / \Delta T$	$I_O = 5mA$	--	0.5	--	mV/ $^{\circ}C$
Quiescent Current Change	ΔI_Q	$I_O = 5mA$ to $0.5A$	--	--	0.5	mA
		$V_I = -14.5V$ to $-30V$	--	--	0.8	mA
Output Noise Voltage	V_N	$10Hz \leq f \leq 100kHz$, $T_A = 25^{\circ}C$	--	200	--	μV

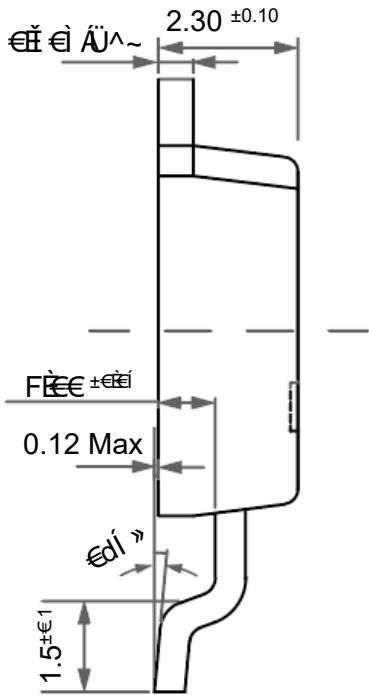
Package Outline

TO-252

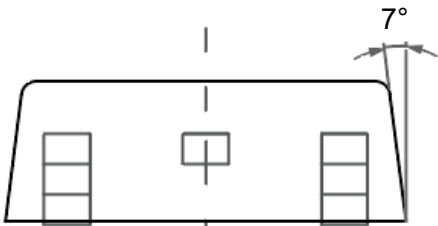
Dimensions in mm



Front View



Side View




Bottom View

Contact Information

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For additional information, please contact your local Sales Representative.

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The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. TANI shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and TANI assumes no responsibility for the application of the product. TANI strives to provide accurate and up -to- date information to the best of our ability. However, due to technical, human, or other reasons, TANI cannot guarantee that the information provided in the product specification is entirely accurate and error-free. TANI shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications.

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