

Description

The TN79LXXSQ series of fixed voltage monolithic integrated circuit voltage three-terminal positive regulators are suitable for applications that required supply up to 100mA.

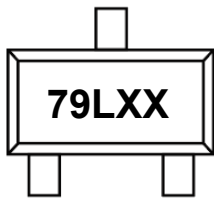
Features

- Input voltage: up to -30V
- Output voltage: -5V ~ -12V
- Output current: up to 100 mA
- Thermal overload shutdown protection
- Short-circuit current limiting

Marking Code

- TN79L05SQ: 79L05
- TN79L06SQ: 79L06
- TN79L09SQ: 79L09
- TN79L12SQ: 79L12

Ordering Information

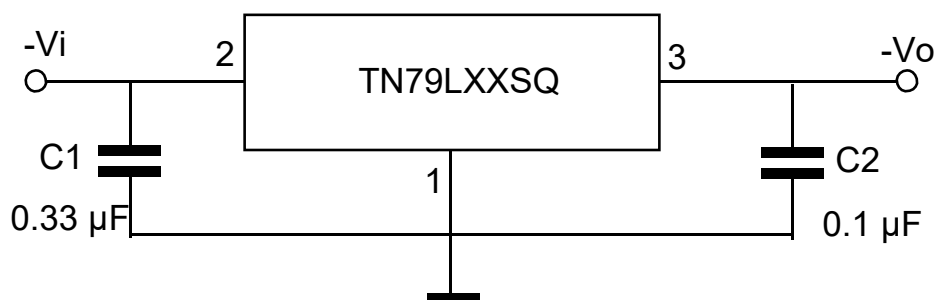
Orderable Device	Package	Reel (inch)	Package Qty (PCS)	Eco Plan ^{Note}	MSL Level	Marking Code
TN79L05SQ	SOT-89	7	1,000PCS/Reel&7inches 3,000PCS/Reel&13inches	RoHS & Green	MSL1	
TN79L08SQ						
TN79L09SQ						
TN79L12SQ						

Note:

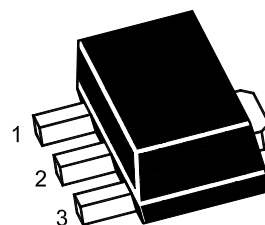
RoHS: TN defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials.

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

Typical Application Circuit



SOT-89



1. GND 2. VIN 3. VOUT

Absolute Maximum Ratings

operating temperature range applies unless otherwise specified

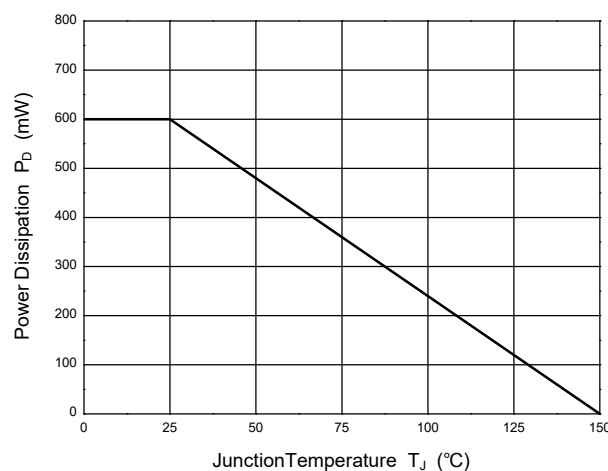
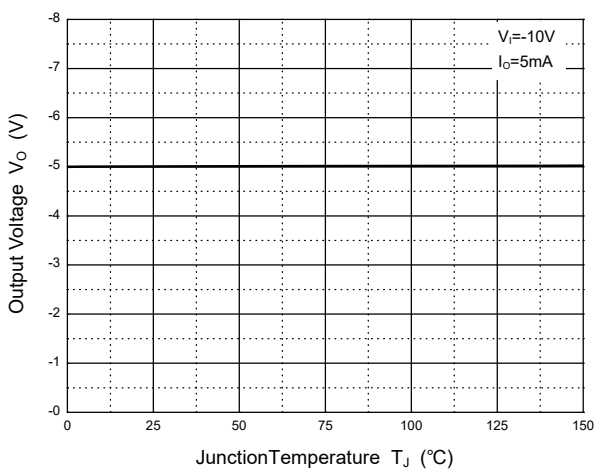
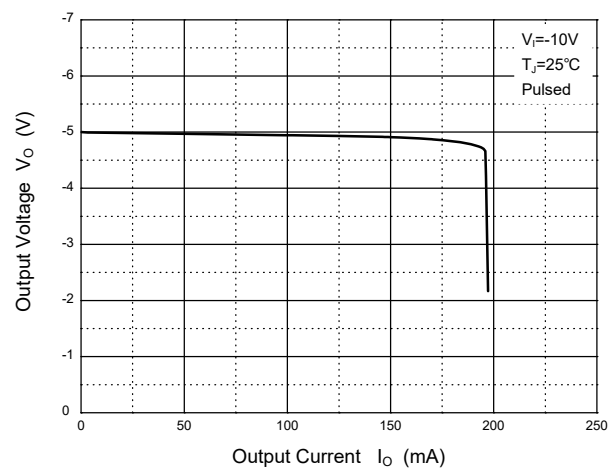
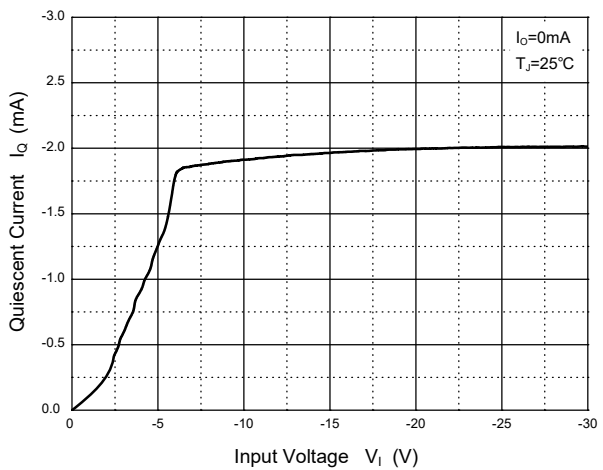
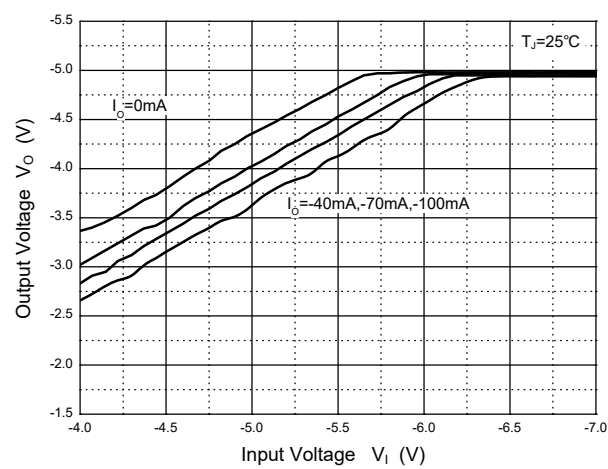
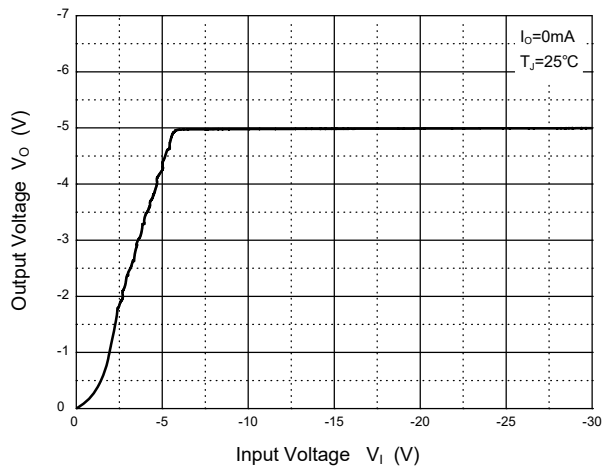
Parameter	Symbol	Value	Unit
Input Voltage	$-V_I$	30	V
Junction Temperature	T_J	150	°C
Operating Temperature Range	T_{OPR}	0 to +125	°C
Storage Temperature Range	T_{STG}	-65 to +150	°C

TN79L05SQ Electrical Characteristics

$-V_I=10\text{ V}$, $I_O=40\text{mA}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$-V_O$	$I_O=40\text{mA}$, $T_J=25^\circ\text{C}$	4.80	5.0	5.2	V
		$I_O=1\text{mA to }40\text{mA}$, $V_I=-7\text{V to }-20\text{V}$, $T_J=0^\circ\text{C}\sim125^\circ\text{C}$	4.75	5.0	5.25	V
		$I_O=1\text{mA to }70\text{mA}$	4.75	5.0	5.25	V
Line Regulation	ΔV_O	$V_I=-7\text{V to }-20\text{V}$, $T_J=25^\circ\text{C}$	--	15	150	mV
		$V_I=-8\text{V to }-20\text{V}$, $T_J=25^\circ\text{C}$	--	12	100	mV
Load Regulation	ΔV_O	$I_O=1\text{mA to }100\text{mA}$, $T_J=25^\circ\text{C}$	--	20	60	mV
		$I_O=1\text{mA to }40\text{ mA}$, $T_J=25^\circ\text{C}$	--	10	30	mV
Ripple Rejection	RR	$V_I=-8\text{V to }-18\text{V}$, $f=120\text{Hz}$, $T_J=0^\circ\text{C}\sim125^\circ\text{C}$	41	49	--	dB
Dropout Voltage	V_D	$T_J=25^\circ\text{C}$	--	1.7	--	V
Quiescent Current	I_Q	$T_J=25^\circ\text{C}$	--	--	6	mA
Quiescent Current Change	ΔI_Q	$V_I=-8\text{V to }-20\text{V}$, $T_J=0^\circ\text{C}\sim125^\circ\text{C}$	--	--	1.5	mA
		$I_O=1\text{mA to }40\text{mA}$, $T_J=0^\circ\text{C}\sim125^\circ\text{C}$	--	--	0.1	mA
Output Noise Voltage	V_N	$10\text{Hz}\leq f\leq100\text{KHz}$, $T_J=25^\circ\text{C}$	--	40	--	$\mu\text{V}/V_O$

TN79L05SQ Typical Characteristic Curves

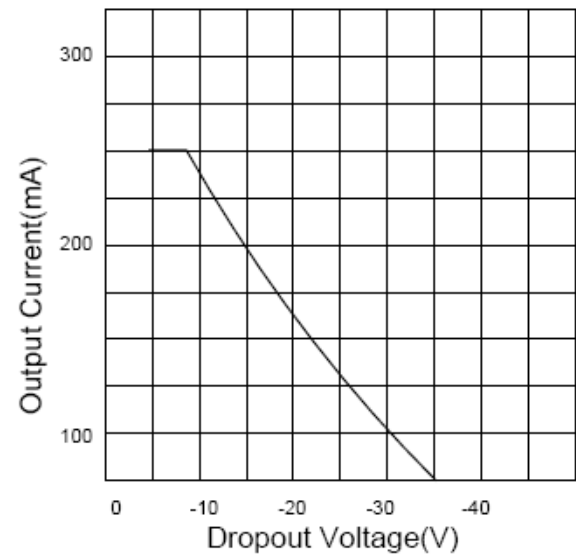
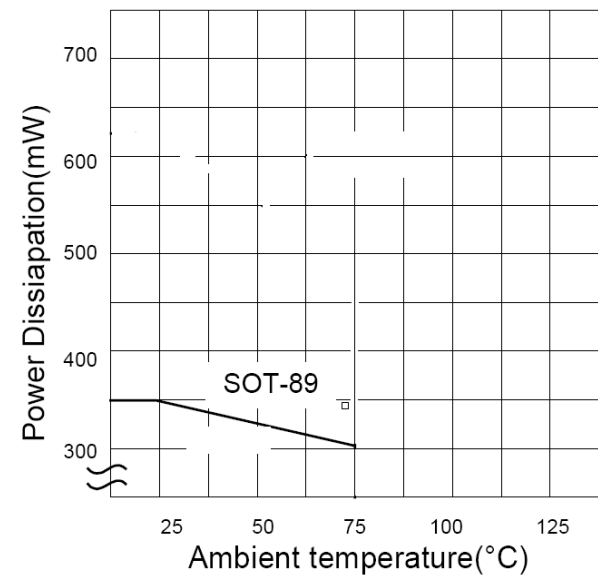


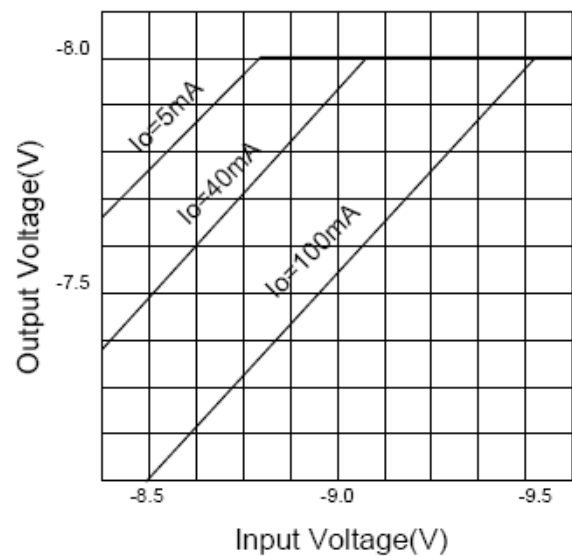
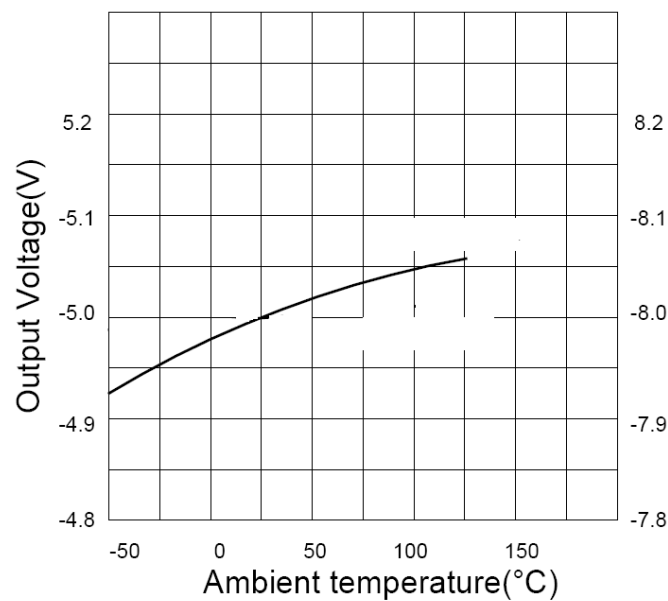
TN79L08SQ Electrical Characteristics

T_J=25°C, I_O=40mA, V_I=-14V, C_I=0.33μF, C_O=0.1μF, unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	-V _O		7.68	8.0	8.32	V
		V _I =-10.5V≤V _I ≤-23V, I _O =1mA~40mA	7.6	8.0	8.4	V
		I _O =1mA to 70mA	7.6	8.0	8.4	V
Line Regulation	ΔV _O	V _I =-10.5V to -23V	--	--	175	mV
		V _I =-11V≤V _I ≤-23V	--	--	150	mV
Load Regulation	ΔV _O	I _O =1mA to 100mA	--	--	80	mV
		I _O =1mA to 40 mA	--	--	50	mV
Ripple Rejection	RR	V _I =-11V to -21V, I _O =40mA f=140Hz, e _{in} =1Vp-p	39	68	--	dB
Dropout Voltage	V _D	T _J =25°C	--	1.7	--	V
Quiescent Current	I _Q		--	--	6.0	mA
Quiescent Current Change	ΔI _Q	V _I =-11V to -23V	--	--	1.5	mA
		I _O =1mA to 40mA	--	--	0.1	mA
Output Noise Voltage	V _N	BW=10Hz~100kHz, I _O =40mA	--	190	--	μV

TN79L08SQ Typical Characteristic Curves



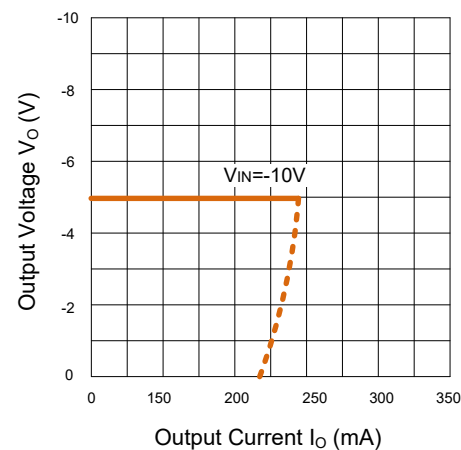
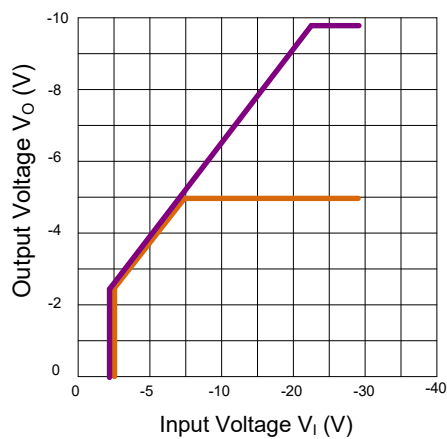


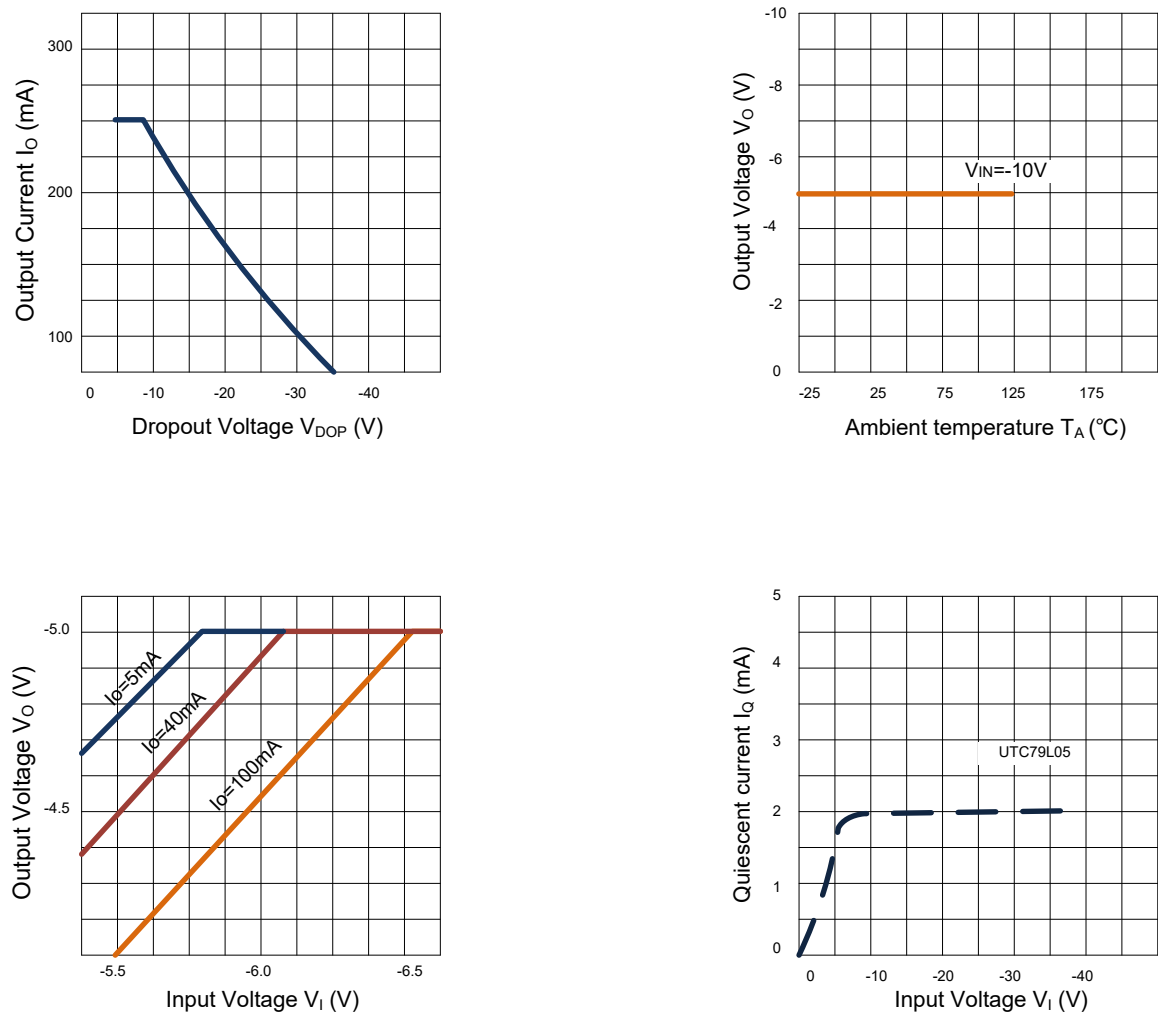
TN79L09SQ Electrical Characteristics

T_J=25°C, C_i=0.33μF, C_o=1.0μF, unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	-V _O	V _I =-15V, I _O =40mA	8.64	9.0	9.36	V
Line Regulation	ΔV _O	V _I =-12.5~-24V, I _O =40mA	--	27	200	mV
Load Regulation	ΔV _O	V _I =-15V, I _O =1~100mA	--	12	90	mV
Ripple Rejection	RR	V _I =-12V to -22V f=150Hz, I _O =40mA, e _{in} =1Vp-p	38	67	--	dB
Quiescent Current	I _Q	V _I =-15V, I _O =40mA	--	2.0	6.0	mA
Output Noise Voltage	V _N	V _I =-15V, I _O =40mA 10Hz≤f≤100KHz	--	210	--	μV

TN79L09SQ Typical Characteristic Curves



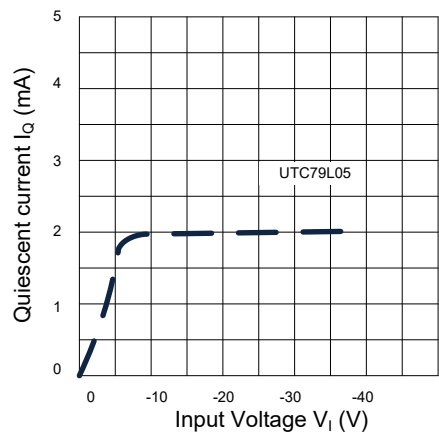
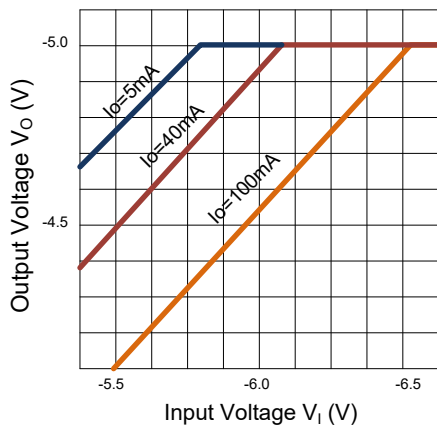
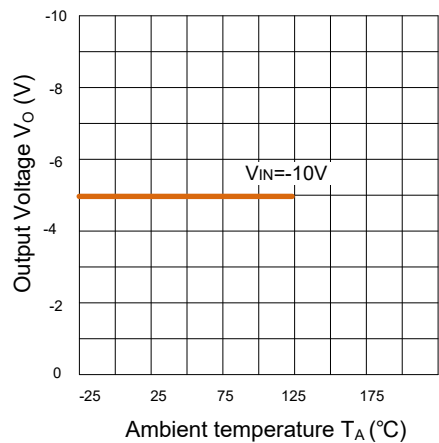
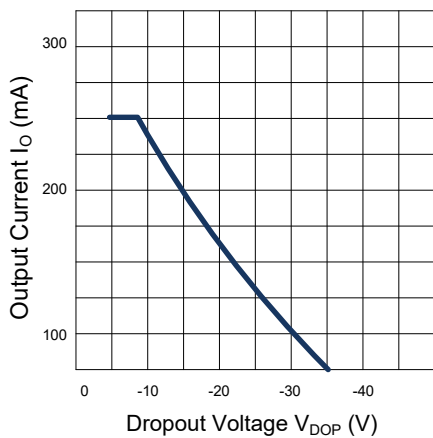
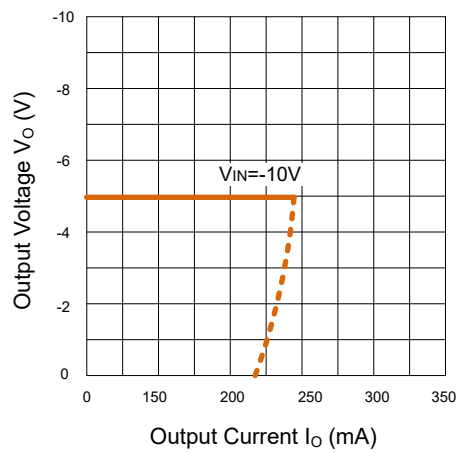
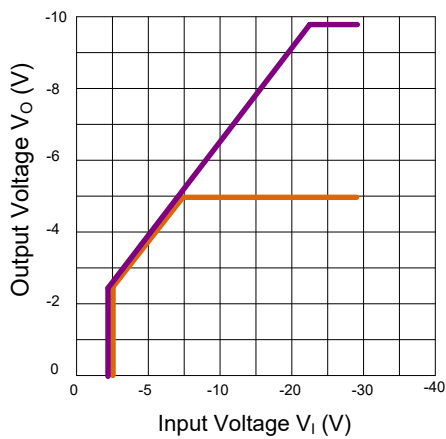


TN79L12SQ Electrical Characteristics

$T_J=25^{\circ}C, C_I=0.33\mu F, C_O=1.0\mu F$, unless otherwise specified.

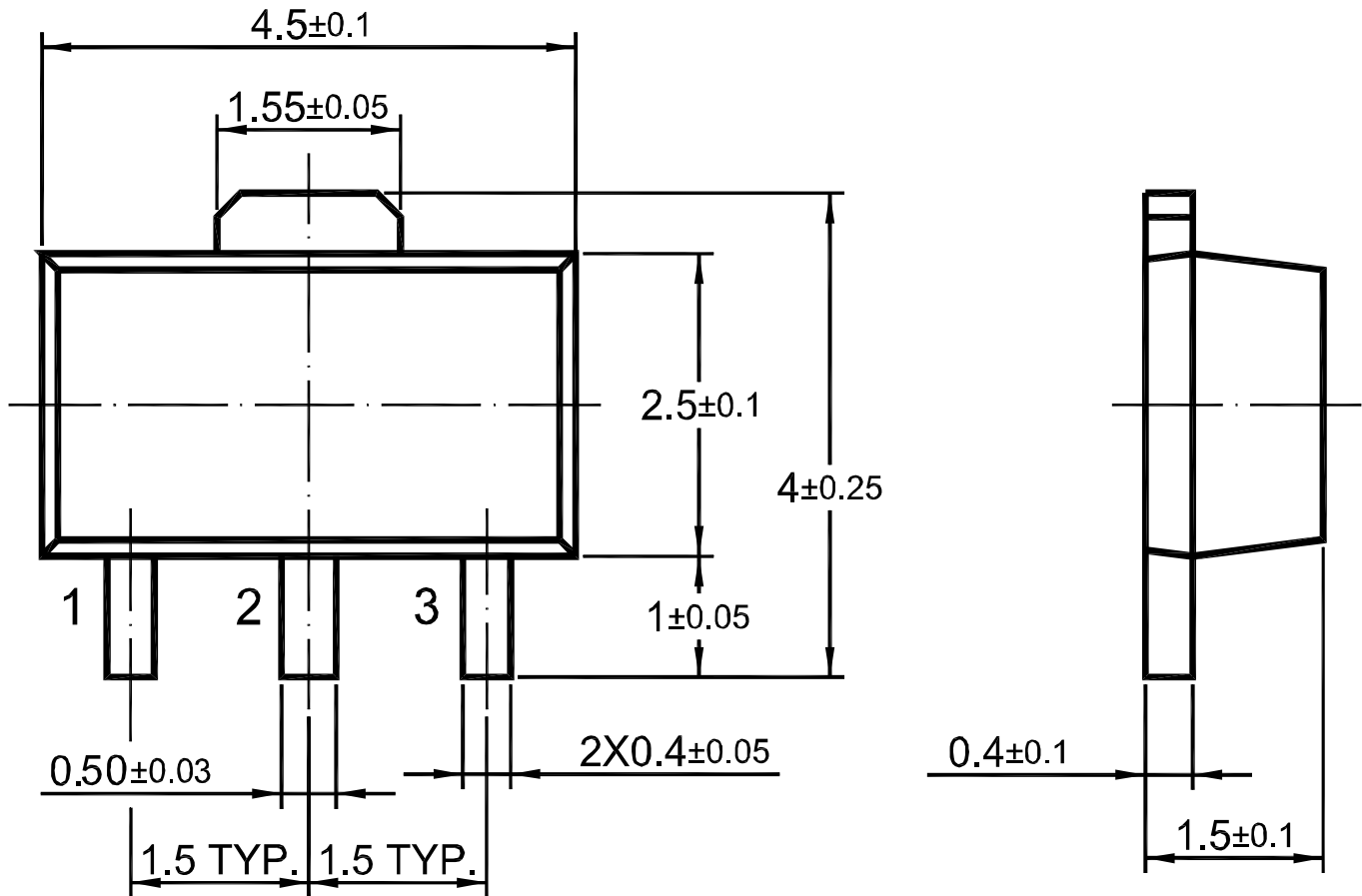
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$-V_O$	$V_I=-19V, I_O=40mA$	11.5	12.0	12.5	V
Line Regulation	ΔV_O	$V_I=-14.5\sim-27V, I_O=40mA$	--	36	250	mV
Load Regulation	ΔV_O	$V_I=-19V, I_O=1\sim100mA$	--	16	100	mV
Ripple Rejection	RR	$V_I=-15V$ to $-25V$ $f=190Hz, I_O=40mA, e_{in}=1Vp-p$	36	65	--	dB
Quiescent Current	I_Q	$V_I=-19V, I_O=40mA$	--	2.0	6.0	mA
Output Noise Voltage	V_N	$V_I=-19V, I_O=40mA$ $10Hz\leq f\leq 100KHz$	--	290	--	μV

TN79L12SQ Typical Characteristic Curves



Package Outline

SOT-89 Dimensions in mm



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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Product Specification Statement

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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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Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.

The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. TANI shall assume no responsibility for any consequences resulting from such usage.

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