

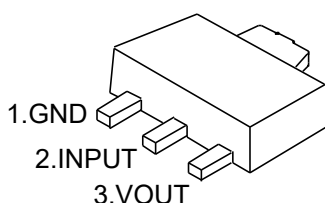
1.Description

The 79Lxx-150 series of fixed voltage monolithic integrated circuit voltage regulators are suitable for applications that required supply up to 150mA.

2.Features

- Maximum output current of 150mA
- Output voltage of -5V,-6V,-8V,-9V,-10V
-12V,-15V,-18V and -24V
- Thermal overload protection
- Short circuit current limiting
- Output voltage accuracy: 1%

3.Pinning Information



SOT-89

4.Absolute Maximum Ratings

Characteristics		Symbol	Value	Units
Input voltage($T_A=25^{\circ}\text{C}$)	79L05~79L15	V_I	-35	V
	79L18~79L24		-40	V
Output current		I_O	0.15	A
High power dissipation		P_D	800	mW
Junction Temperature Range		T_{OPR}	-20 to 120	$^{\circ}\text{C}$
Storage Temperature Range		T_{STG}	-55 to 150	$^{\circ}\text{C}$



5.1 Electrical Characteristics (79L33)

($V_I = -5.3V$, $I_O = 40mA$, $0 < T_J < 125^\circ C$, $C_1 = 0.33\mu F$, $C_O = 0.1\mu F$, unless otherwise specified) (Note 1)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Output Voltage	V_O	$T_J = 25^\circ C$	-3.267	-3.3	-3.333	V
Output Voltage (note 2)		$T_J = 25^\circ C$	-3.267		-3.333	V
Load Regulation	ΔV_O	$T_J = 25^\circ C$, $I_O = 1mA \sim 130mA$		10	60	mV
		$T_J = 25^\circ C$, $I_O = 1mA \sim 70mA$		7	30	mV
Line regulation	ΔV_O	$-5.3V \leq V_I \leq -20V$, $T_J = 25^\circ C$		7	150	mV
		$-6.3V \leq V_I \leq -20V$, $T_J = 25^\circ C$		4	100	mV
Quiescent Current	I_q	$T_J = 25^\circ C$		2	5.5	mA
Quiescent Current Change	ΔI_q	$-6.3V \leq V_I \leq -20V$			1.5	mA
	ΔI_q	$1mA \leq I_O \leq 40mA$			0.1	mA
Output Noise Voltage	V_N	$10Hz \leq f \leq 100kHz$, $T_J = 25^\circ C$		40		μV
Temperature coefficient of V_O	$\Delta V_O / \Delta T$	$I_O = 5mA$		0.45		$mV/^\circ C$
Ripple Rejection	RR	$-6.3V \leq V_I \leq -16.3V$, $f = 120Hz$, $T_J = 25^\circ C$	40	49		dB
Dropout Voltage	V_d	$T_J = 25^\circ C$		1.7		V



5.2 Electrical Characteristics (79L05)

($V_i = -10V$, $I_o = 40mA$, $0 < T_J < 125^\circ C$, $C_1 = 0.33\mu F$, $C_o = 0.1\mu F$, unless otherwise specified) (Note 1)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Output Voltage	V_o	$T_J = 25^\circ C$	-4.95	-5	-5.05	V
Output Voltage (note 2)		$T_J = 25^\circ C$	-4.95	-5	-5.05	V
Load Regulation	ΔV_o	$T_J = 25^\circ C$, $I_o = 1mA \sim 130mA$		11	60	mV
		$T_J = 25^\circ C$, $I_o = 1mA \sim 40mA$		5	30	mV
Line regulation	ΔV_o	$-7V \leq V_i \leq -20V$, $T_J = 25^\circ C$		8	150	mV
		$-8V \leq V_i \leq -20V$, $T_J = 25^\circ C$		6	100	mV
Quiescent Current	I_q			2	5.5	mA
Quiescent Current Change	ΔI_q	$-8V \leq V_i \leq -20V$			1.5	mA
	ΔI_q	$1mA \leq V_i \leq 40mA$			0.1	mA
Output Noise Voltage	V_N	$10Hz \leq f \leq 100kHz$		40		μV
Temperature coefficient of V_o	$\Delta V_o / \Delta T$	$I_o = 5mA$		0.65		$mV/^\circ C$
Ripple Rejection	RR	$-8V \leq V_i \leq -20V$, $f = 120Hz$, $T_J = 25^\circ C$	40	49		dB
Dropout Voltage	V_d	$T_J = 25^\circ C$		1.7		V



5.3 Electrical Characteristics (79L06)

($V_I = -12V$, $I_O = 40mA$, $0 < T_J < 125^\circ C$, $C_1 = 0.33\mu F$, $C_O = 0.1\mu F$, unless otherwise specified) (Note 1)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Output Voltage	V_O	$T_J = 25^\circ C$	-5.94	-6	-6.06	V
Output Voltage (note 2)		$T_J = 25^\circ C$	-5.94	-6	-6.06	V
Load Regulation	ΔV_O	$T_J = 25^\circ C$, $I_O = 1mA \sim 130mA$		12.8	80	mV
		$T_J = 25^\circ C$, $I_O = 1mA \sim 70mA$		5.8	40	mV
Line regulation	ΔV_O	$-8.5V \leq V_I \leq -20V$, $T_J = 25^\circ C$		64	175	mV
		$-9V \leq V_I \leq -20V$, $T_J = 25^\circ C$		54	125	mV
Quiescent Current	I_q			2	5.5	mA
Quiescent Current Change	ΔI_q	$-9V \leq V_I \leq -20V$			1.5	mA
	ΔI_q	$1mA \leq V_I \leq 40mA$			0.1	mA
Output Noise Voltage	V_N	$10Hz \leq f \leq 100kHz$		49		μV
Temperature coefficient of V_O	$\Delta V_O / \Delta T$	$I_O = 5mA$		0.75		$mV/^\circ C$
Ripple Rejection	RR	$-10V \leq V_I \leq -20V$, $f = 120Hz$, $T_J = 25^\circ C$	38	46		dB
Dropout Voltage	V_d	$T_J = 25^\circ C$		1.7		V



5.4 Electrical Characteristics (79L08)

($V_I = -14V$, $I_O = 40mA$, $0 < T_J < 125^\circ C$, $C_1 = 0.33\mu F$, $C_O = 0.1\mu F$, unless otherwise specified) (Note 1)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Output Voltage	V_O	$T_J = 25^\circ C$	-7.92	-8	-8.08	V
Output Voltage (note 2)		$T_J = 25^\circ C$	-7.92	-8	-8.08	V
Load Regulation	ΔV_O	$T_J = 25^\circ C$, $I_O = 1mA \sim 130mA$		15	80	mV
		$T_J = 25^\circ C$, $I_O = 1mA \sim 70mA$		8	40	mV
Line regulation	ΔV_O	$-10.5V \leq V_I \leq -23V$, $T_J = 25^\circ C$		10	175	mV
		$-11V \leq V_I \leq -23V$, $T_J = 25^\circ C$		8	125	mV
Quiescent Current	I_q			2	5.5	mA
Quiescent Current Change	ΔI_q	$-11V \leq V_I \leq -23V$			1.5	mA
	ΔI_q	$1mA \leq V_I \leq 40mA$			0.1	mA
Output Noise Voltage	V_N	$10Hz \leq f \leq 100kHz$		49		μV
Temperature coefficient of V_O	$\Delta V_O / \Delta T$	$I_O = 5mA$		0.75		$mV/^\circ C$
Ripple Rejection	RR	$-11V \leq V_I \leq -23V$, $f = 120Hz$, $T_J = 25^\circ C$	36	45		dB
Dropout Voltage	V_d	$T_J = 25^\circ C$		1.7		V



5.5 Electrical Characteristics (79L09)

($V_I = -15V$, $I_O = 40mA$, $0 < T_J < 125^\circ C$, $C_1 = 0.33\mu F$, $C_O = 0.1\mu F$, unless otherwise specified) (Note 1)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Output Voltage	V_O	$T_J = 25^\circ C$	-8.91	-9	-9.09	V
Output Voltage (note 2)		$T_J = 25^\circ C$	-8.91	-9	-9.09	V
Load Regulation	ΔV_O	$T_J = 25^\circ C$, $I_O = 1mA \sim 130mA$		20	90	mV
		$T_J = 25^\circ C$, $I_O = 1mA \sim 40mA$		10	45	mV
Line regulation	ΔV_O	$-11.5V \leq V_I \leq -24V$, $T_J = 25^\circ C$		90	200	mV
		$-13V \leq V_I \leq -24V$, $T_J = 25^\circ C$		100	150	mV
Quiescent Current	I_q			2	5.5	mA
Quiescent Current Change	ΔI_q	$-13V \leq V_I \leq -24V$			1.5	mA
	ΔI_q	$1mA \leq V_I \leq 40mA$			0.1	mA
Output Noise Voltage	V_N	$10Hz \leq f \leq 100kHz$		49		μV
Temperature coefficient of V_O	$\Delta V_O / \Delta T$	$I_O = 5mA$		0.75		$mV/^\circ C$
Ripple Rejection	RR	$-12V \leq V_I \leq -23V$, $f = 120Hz$, $T_J = 25^\circ C$	36	44		dB
Dropout Voltage	V_d	$T_J = 25^\circ C$		1.7		V



5.6 Electrical Characteristics (79L12)

($V_I = -19V$, $I_O = 40mA$, $0 < T_J < 125^\circ C$, $C_1 = 0.33\mu F$, $C_O = 0.1\mu F$, unless otherwise specified) (Note 1)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Output Voltage	V_O	$T_J = 25^\circ C$	-11.88	-12	-12.12	V
Output Voltage (note 2)		$T_J = 25^\circ C$	-11.88	-12	-12.12	V
Load Regulation	ΔV_O	$T_J = 25^\circ C$, $I_O = 1mA \sim 130mA$		25	150	mV
		$T_J = 25^\circ C$, $I_O = 1mA \sim 40mA$		12	75	mV
Line regulation	ΔV_O	$-14.5V \leq V_I \leq -27V$, $T_J = 25^\circ C$		25	300	mV
		$-16V \leq V_I \leq -27V$, $T_J = 25^\circ C$		20	250	mV
Quiescent Current	I_q			2	5.5	mA
Quiescent Current Change	ΔI_q	$-16V \leq V_I \leq -27V$			1.5	mA
	ΔI_q	$1mA \leq V_I \leq 40mA$			0.1	mA
Output Noise Voltage	V_N	$10Hz \leq f \leq 100kHz$		80		μV
Temperature coefficient of V_O	$\Delta V_O / \Delta T$	$I_O = 5mA$		1		$mV/^\circ C$
Ripple Rejection	RR	$-15V \leq V_I \leq -25V$, $f = 120Hz$, $T_J = 25^\circ C$	36	42		dB
Dropout Voltage	V_d	$T_J = 25^\circ C$		1.7		V



5.7 Electrical Characteristics (79L15)

($V_i = -23V$, $I_o = 40mA$, $0 < T_j < 125^\circ C$, $C_1 = 0.33\mu F$, $C_o = 0.1\mu F$, unless otherwise specified) (Note 1)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Output Voltage	V_o	$T_j = 25^\circ C$	-14.85	-15	-15.15	V
Output Voltage (note 2)		$T_j = 25^\circ C$	-14.85	-15	-15.15	V
Load Regulation	ΔV_o	$T_j = 25^\circ C$, $I_o = 1mA \sim 130mA$		20	150	mV
		$T_j = 25^\circ C$, $I_o = 1mA \sim 70mA$		25	150	mV
Line regulation	ΔV_o	$-17.5V \leq V_i \leq -30V$, $T_j = 25^\circ C$		25	150	mV
		$-20V \leq V_i \leq -30V$, $T_j = 25^\circ C$		15	75	mV
Quiescent Current	I_q			2.2	6	mA
Quiescent Current Change	ΔI_q	$-20V \leq V_i \leq -30V$			1.5	mA
	ΔI_q	$1mA \leq V_i \leq 40mA$			0.1	mA
Output Noise Voltage	V_N	$10Hz \leq f \leq 100kHz$		90		μV
Temperature coefficient of V_o	$\Delta V_o / \Delta T$	$I_o = 5mA$		1.3		$mV/^\circ C$
Ripple Rejection	RR	$-18.5V \leq V_i \leq -28.5V$, $f = 120Hz$, $T_j = 25^\circ C$	33	39		dB
Dropout Voltage	V_d	$T_j = 25^\circ C$		1.7		V



5.8 Electrical Characteristics (79L18)

($V_I = -27V$, $I_O = 40mA$, $0 < T_J < 125^\circ C$, $C_1 = 0.33\mu F$, $C_O = 0.1\mu F$, unless otherwise specified) (Note 1)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Output Voltage	V_O	$T_J = 25^\circ C$	-17.82	-18	-18.18	V
Output Voltage (note 2)		$T_J = 25^\circ C$	-17.82	-18	-18.18	V
Load Regulation	ΔV_O	$T_J = 25^\circ C$, $I_O = 1mA \sim 130mA$		30	170	mV
		$T_J = 25^\circ C$, $I_O = 1mA \sim 40mA$		15	85	mV
Line regulation	ΔV_O	$-21V \leq V_I \leq -33V$, $T_J = 25^\circ C$		145	300	mV
		$-22V \leq V_I \leq -33V$, $T_J = 25^\circ C$		135	250	mV
Quiescent Current	I_q			2.2	6	mA
Quiescent Current Change	ΔI_q	$-21V \leq V_I \leq -33V$			1.5	mA
	ΔI_q	$1mA \leq V_I \leq 40mA$			0.1	mA
Output Noise Voltage	V_N	$10Hz \leq f \leq 100kHz$		150		μV
Temperature coefficient of V_O	$\Delta V_O / \Delta T$	$I_O = 5mA$		1.8		$mV/^\circ C$
Ripple Rejection	RR	$-23V \leq V_I \leq -33V$, $f = 120Hz$, $T_J = 25^\circ C$	32	38		dB
Dropout Voltage	V_d	$T_J = 25^\circ C$		1.7		V



5.9 Electrical Characteristics (79L24)

($V_i = -33V$, $I_o = 40mA$, $0 < T_j < 125^\circ C$, $C_1 = 0.33\mu F$, $C_o = 0.1\mu F$, unless otherwise specified) (Note 1)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Output Voltage	V_o	$T_j = 25^\circ C$	-23.76	-24	-24.24	V
Output Voltage (note 2)		$T_j = 25^\circ C$	-23.76	-24	-24.24	V
Load Regulation	ΔV_o	$T_j = 25^\circ C$, $I_o = 1mA \sim 130mA$		40	200	mV
		$T_j = 25^\circ C$, $I_o = 1mA \sim 40mA$		20	100	mV
Line regulation	ΔV_o	$-27V \leq V_i \leq -38V$, $T_j = 25^\circ C$		160	300	mV
		$-28V \leq V_i \leq -38V$, $T_j = 25^\circ C$		150	250	mV
Quiescent Current	I_q			2.2	6	mA
Quiescent Current Change	ΔI_q	$-21V \leq V_i \leq -38V$			1.5	mA
	ΔI_q	$1mA \leq V_i \leq 40mA$			0.1	mA
Output Noise Voltage	V_N	$10Hz \leq f \leq 100kHz$		200		μV
Temperature coefficient of V_o	$\Delta V_o / \Delta T$	$I_o = 5mA$		2		$mV/^\circ C$
Ripple Rejection	RR	$-27V \leq V_i \leq -38V$, $f = 120Hz$, $T_j = 25^\circ C$	30	37		dB
Dropout Voltage	V_d	$T_j = 25^\circ C$		1.7		V

Notes

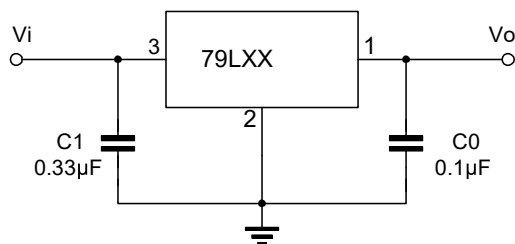
1: The Maximum steady state usable output current and input voltage are very dependent on the heating sinking and/or lead temperature length of the package. The data above represent pulse test conditions with junction temperatures as indicated at the initiation of test.

Note 2: Power dissipation $< 0.75W$.

Note 3: Output voltage of 79Lxx.



6. Typical Application

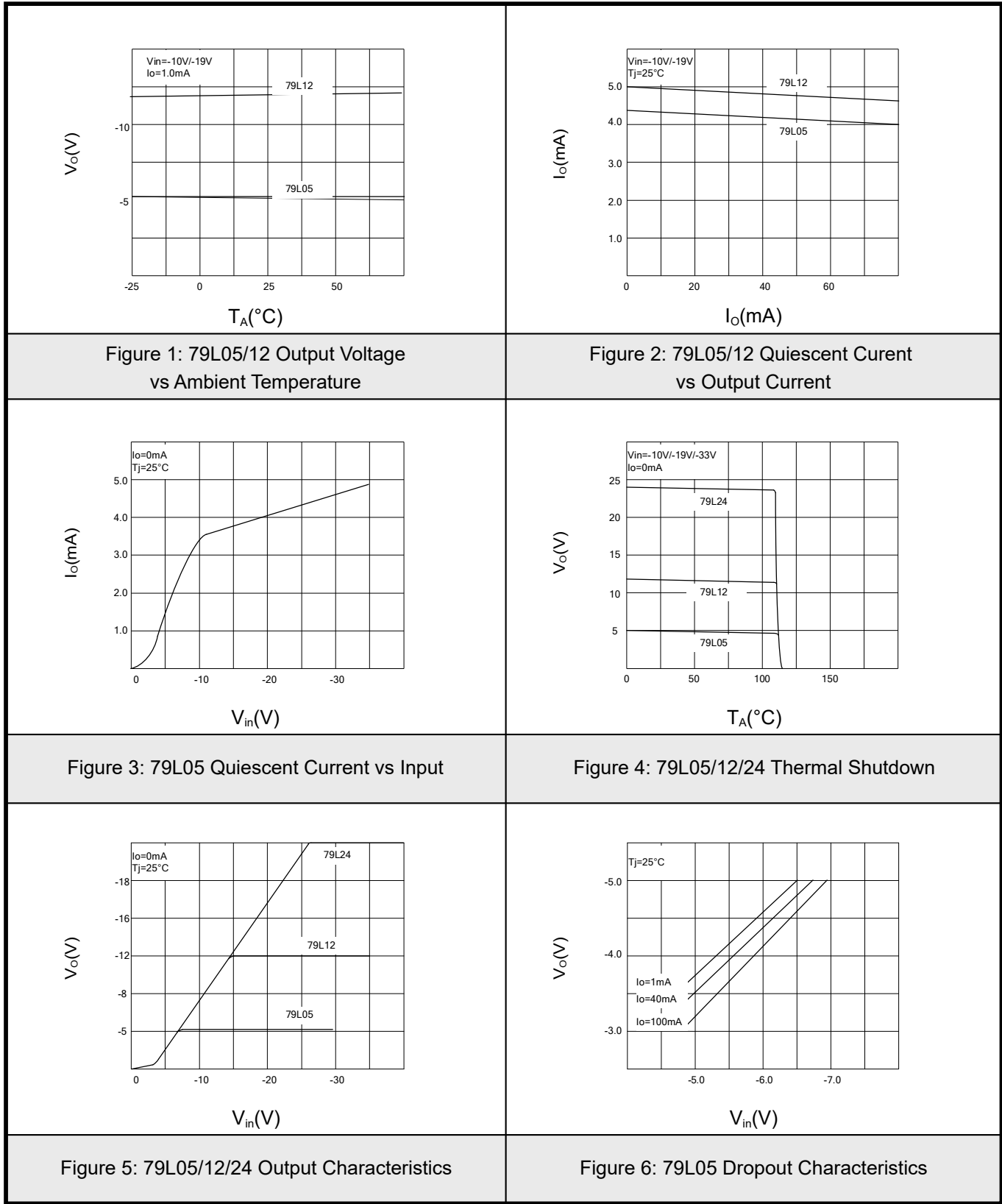


Note 1: To specify an output voltage, substitute voltage value for "XX".

Note 2: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators

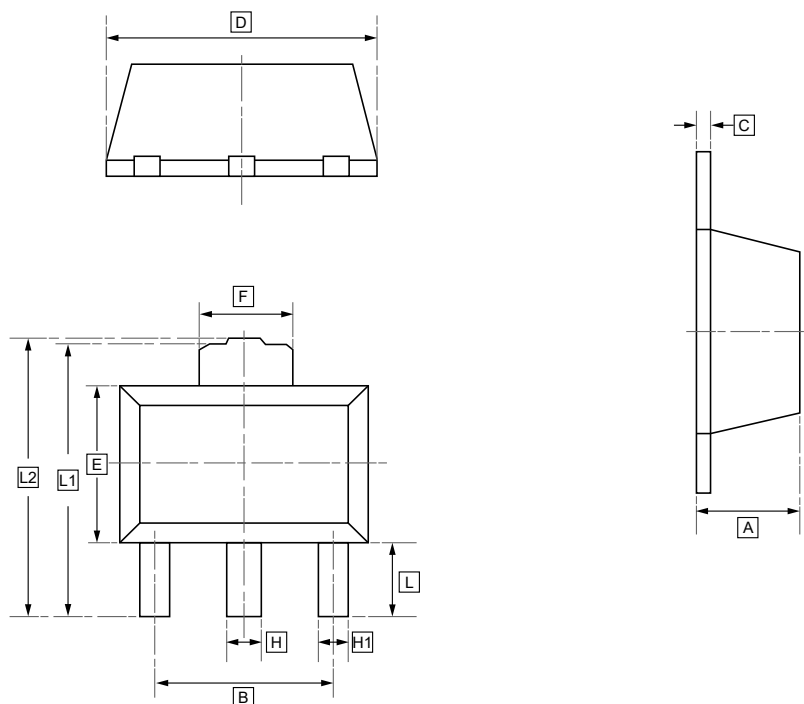


7. Typical characteristic





8.SOT-89 Package Outline Dimensions

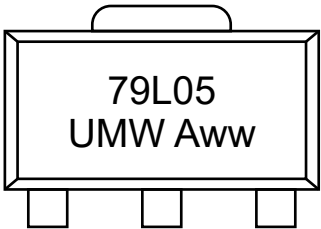


DIMENSIONS (mm are the original dimensions)

Symbol	A	B	C	D	E	F	H	H1	L	L1	L2
Min	1.450	2.950	0.330	4.500	2.450	1.650	0.450	0.370	0.900	4.100	4.100
Max	1.550	3.050	0.430	4.700	2.550	1.750	0.580	0.480	1.000	4.300	4.350



9.Ordering Information



ww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW 79Lxx-150	SOT-89	1000	Tape and reel



10.Disclaimer

UMW reserves the right to make changes to all products, specifications. Customers should obtain the latest version of product documentation and verify the completeness and currency of the information before placing an order.

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