TOSHIBA Bipolar Linear Integrated Circuit Silicon Monolithic

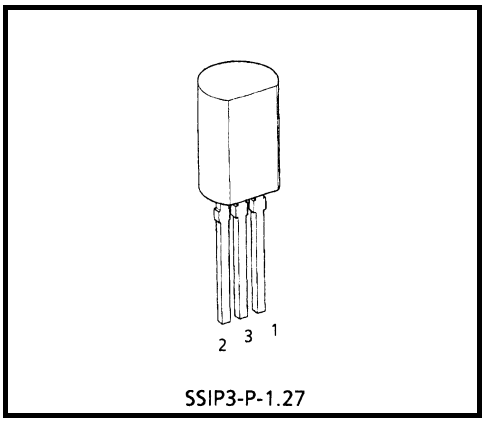
TA79L005P,TA79L006P,TA79L008P,TA79L009P,TA79L010P, TA79L012P,TA79L015P,TA79L018P,TA79L020P,TA79L024P

−5 V, −6 V, −8 V, −9 V, −10 V, −12 V, −15 V, −18 V, −20 V, −24 V

Three-Terminal Negative Voltage Regulators

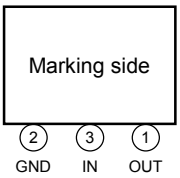
Features

- Best suited to a power supply for TTL and C^2MOS.
- Built-in overcurrent protection.
- Built-in overheating protection.
- Maximum output current of 150 mA (T_j = 25°C).
- Packaged in TO-92MOD.

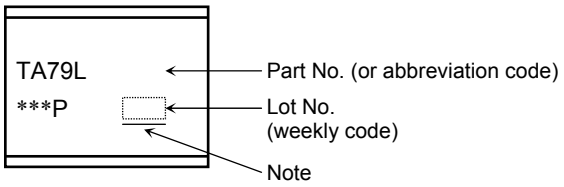


Weight: 0.36 g (Typ.)

Pin Assignment



Marking

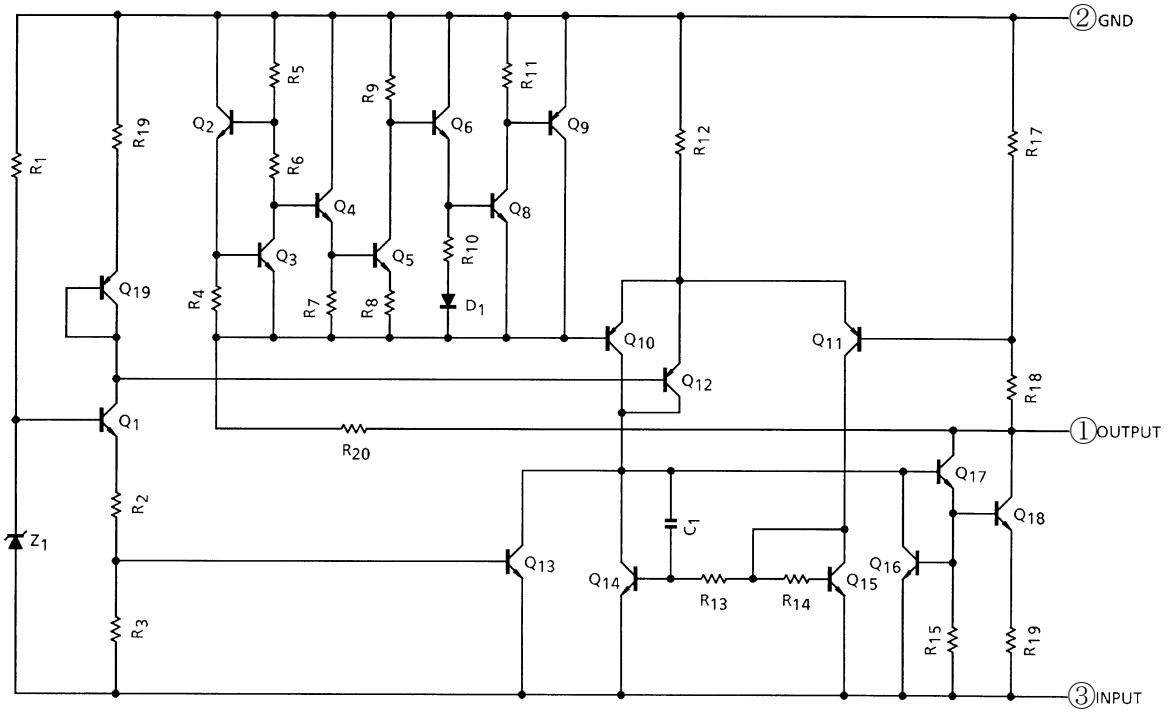


Note: A line under a Lot No. identifies the indication of product Labels.
Not underlined: [[Pb]]/INCLUDES > MCV
Underlined: [[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product. The RoHS is the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

The product(s) in this document (“Product”) contain functions intended to protect the Product from temporary small overloads such as minor short-term overcurrent or overheating. The protective functions do not necessarily protect Product under all circumstances. When incorporating Product into your system, please design the system (1) to avoid such overloads upon the Product, and (2) to shut down or otherwise relieve the Product of such overload conditions immediately upon occurrence. For details, please refer to the notes appearing below in this document and other documents referenced in this document.

Equivalent Circuit



Absolute Maximum Ratings (Ta = 25°C)

Characteristics		Symbol	Rating	Unit
Input voltage	TA79L005P	V_{IN}	−35	V
	TA79L006P			
	TA79L008P			
	TA79L009P			
	TA79L010P			
	TA79L012P			
	TA79L015P			
	TA79L018P		−40	
	TA79L020P			
	TA79L024P			
Output current		I_{OUT}	0.15	A
Power dissipation	(Ta = 25°C)	P_D	800	mW
Operating temperature		T_{opr}	−30 to 85	°C
Storage temperature		T_{stg}	−55 to 150	°C
Junction temperature		T_j	150	°C
Thermal resistance		$R_{th\ (j-a)}$	156	°C/W

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings and the operating ranges.
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook (“Handling Precautions”/“Derating Concept and Methods”) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

TA79L005P
Electrical Characteristics
(Unless otherwise specified, V_{IN} = −10 V, I_{OUT} = 40 mA, C_{IN} = 0.33 μF, C_{OUT} = 0.1 μF, 0°C ≤ T_j ≤ 125°C)

Characteristics	Symbol	Test Circuit	Test Condition		Min	Typ.	Max	Unit
Output voltage	V_{OUT}	1	T_j = 25°C		−5.2	−5.0	−4.8	V
Line regulation	Reg·line	1	T_j = 25°C	−20 V ≤ V_{IN} ≤ −7.0 V	—	55	150	mV
				−20 V ≤ V_{IN} ≤ −8.0 V	—	45	100	
Load regulation	Reg·load	1	T_j = 25°C	1.0 mA ≤ I_{OUT} ≤ 100 mA	—	11	60	mV
				1.0 mA ≤ I_{OUT} ≤ 40 mA	—	5.0	30	
Output voltage	V_{OUT}	1	T_j = 25°C	−20 V ≤ V_{IN} ≤ −7.0 V, 1.0 mA ≤ I_{OUT} ≤ 40 mA	−5.25	—	−4.75	V
				1.0 mA ≤ I_{OUT} ≤ 70 mA	−5.25	—	−4.75	
Quiescent current	I_B	1	T_j = 25°C		—	3.1	6.0	mA
			T_j = 125°C		—	—	5.5	
Quiescent current change	ΔI_{BI}	1	T_j = 25°C	−20 V ≤ V_{IN} ≤ −8.0 V	—	—	1.5	mA
	ΔI_{BO}	1		1.0 mA ≤ I_{OUT} ≤ 40 mA	—	—	0.1	
Output noise voltage	V_{NO}	2	Ta = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	40	—	μV_{rms}
Long term stability	$\Delta V_{OUT}/\Delta t$	1	—		—	12	—	mV/kh
Ripple rejection ratio	R.R.	3	−18 V ≤ V_{IN} ≤ −8.0 V, T_j = 25°C, f = 120 Hz		41	49	—	dB
Dropout voltage	V_D	1	T_j = 25°C		—	1.7	—	V
Average temperature coefficient of output voltage	T_{CVO}	1	I_{OUT} = 5 mA		—	0.6	—	mV/°C

TA79L006P
Electrical Characteristics
(Unless otherwise specified, V_{IN} = −11 V, I_{OUT} = 40 mA, C_{IN} = 0.33 μF, C_{OUT} = 0.1 μF, 0°C ≤ T_j ≤ 125°C)

Characteristics	Symbol	Test Circuit	Test Condition		Min	Typ.	Max	Unit
Output voltage	V_{OUT}	1	T_j = 25°C		−6.24	−6.0	−5.76	V
Line regulation	Reg·line	1	T_j = 25°C	−21 V ≤ V_{IN} ≤ −8.1 V	—	50	150	mV
				−21 V ≤ V_{IN} ≤ −9.0 V	—	45	110	
Load regulation	Reg·load	1	T_j = 25°C	1.0 mA ≤ I_{OUT} ≤ 100 mA	—	12	70	mV
				1.0 mA ≤ I_{OUT} ≤ 40 mA	—	5.5	35	
Output voltage	V_{OUT}	1	T_j = 25°C	−21 V ≤ V_{IN} ≤ −8.1 V, 1.0 mA ≤ I_{OUT} ≤ 40 mA	−6.3	—	−5.7	V
				1.0 mA ≤ I_{OUT} ≤ 70 mA	−6.3	—	−5.7	
Quiescent current	I_B	1	T_j = 25°C		—	3.1	6.0	mA
			T_j = 125°C		—	—	5.5	
Quiescent current change	ΔI_{BI}	1	T_j = 25°C	−21 V ≤ V_{IN} ≤ −9.0 V	—	—	1.5	mA
	ΔI_{BO}	1		1.0 mA ≤ I_{OUT} ≤ 40 mA	—	—	0.1	
Output noise voltage	V_{NO}	2	Ta = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	40	—	μV_{rms}
Long term stability	$\Delta V_{OUT}/\Delta t$	1	—		—	14	—	mV/kh
Ripple rejection ratio	R.R.	3	−19 V ≤ V_{IN} ≤ −9.0 V, T_j = 25°C, f = 120 Hz		39	47	—	dB
Dropout voltage	V_D	1	T_j = 25°C		—	1.7	—	V
Average temperature coefficient of output voltage	T_{CVO}	1	I_{OUT} = 5 mA		—	0.7	—	mV/°C

TA79L008P
Electrical Characteristics
(Unless otherwise specified, V_{IN} = −14 V, I_{OUT} = 40 mA, C_{IN} = 0.33 μF, C_{OUT} = 0.1 μF, 0°C ≤ T_j ≤ 125°C)

Characteristics	Symbol	Test Circuit	Test Condition		Min	Typ.	Max	Unit
Output voltage	V_{OUT}	1	T_j = 25°C		−8.3	−8.0	−7.7	V
Line regulation	Reg·line	1	T_j = 25°C	−23 V ≤ V_{IN} ≤ −10.5 V	—	20	175	mV
				−23 V ≤ V_{IN} ≤ −11 V	—	12	125	
Load regulation	Reg·load	1	T_j = 25°C	1.0 mA ≤ I_{OUT} ≤ 100 mA	—	15	80	mV
				1.0 mA ≤ I_{OUT} ≤ 40 mA	—	7.0	40	
Output voltage	V_{OUT}	1	T_j = 25°C	−23 V ≤ V_{IN} ≤ −10.5 V, 1.0 mA ≤ I_{OUT} ≤ 40 mA	−8.4	—	−7.6	V
				1.0 mA ≤ I_{OUT} ≤ 70 mA	−8.4	—	−7.6	
Quiescent current	I_B	1	T_j = 25°C		—	3.1	6.5	mA
			T_j = 125°C		—	—	6.0	
Quiescent current change	ΔI_{BI}	1	T_j = 25°C	−23 V ≤ V_{IN} ≤ −11 V	—	—	1.5	mA
	ΔI_{BO}	1		1.0 mA ≤ I_{OUT} ≤ 40 mA	—	—	0.1	
Output noise voltage	V_{NO}	2	Ta = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	60	—	μV_{rms}
Long term stability	$\Delta V_{OUT}/\Delta t$	1	—		—	20	—	mV/kh
Ripple rejection ratio	R.R.	3	−23 V ≤ V_{IN} ≤ −12 V, T_j = 25°C, f = 120 Hz		37	45	—	dB
Dropout voltage	V_D	1	T_j = 25°C		—	1.7	—	V
Average temperature coefficient of output voltage	T_{CVO}	1	I_{OUT} = 5 mA		—	0.8	—	mV/°C

TA79L009P
Electrical Characteristics
(Unless otherwise specified, V_{IN} = −15 V, I_{OUT} = 40 mA, C_{IN} = 0.33 μF, C_{OUT} = 0.1 μF, 0°C ≤ T_j ≤ 125°C)

Characteristics	Symbol	Test Circuit	Test Condition		Min	Typ.	Max	Unit
Output voltage	V_{OUT}	1	T_j = 25°C		−9.36	−9.0	−8.64	V
Line regulation	Reg·line	1	T_j = 25°C	−24 V ≤ V_{IN} ≤ −11.4 V	—	80	200	mV
				−24 V ≤ V_{IN} ≤ −12 V	—	20	160	
Load regulation	Reg·load	1	T_j = 25°C	1.0 mA ≤ I_{OUT} ≤ 100 mA	—	17	90	mV
				1.0 mA ≤ I_{OUT} ≤ 40 mA	—	8.0	45	
Output voltage	V_{OUT}	1	T_j = 25°C	−24 V ≤ V_{IN} ≤ −11.4 V, 1.0 mA ≤ I_{OUT} ≤ 40 mA	−9.45	—	−8.55	V
				1.0 mA ≤ I_{OUT} ≤ 70 mA	−9.45	—	−8.55	
Quiescent current	I_B	1	T_j = 25°C		—	3.2	6.5	mA
			T_j = 125°C		—	—	6.0	
Quiescent current change	ΔI_{BI}	1	T_j = 25°C	−24 V ≤ V_{IN} ≤ −12 V	—	—	1.5	mA
	ΔI_{BO}	1		1.0 mA ≤ I_{OUT} ≤ 40 mA	—	—	0.1	
Output noise voltage	V_{NO}	2	Ta = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	65	—	μV_{rms}
Long term stability	$\Delta V_{OUT}/\Delta t$	1	—		—	21	—	mV/kh
Ripple rejection ratio	R.R.	3	−24 V ≤ V_{IN} ≤ −12 V, T_j = 25°C, f = 120 Hz		36	44	—	dB
Dropout voltage	V_D	1	T_j = 25°C		—	1.7	—	V
Average temperature coefficient of output voltage	T_{CVO}	1	I_{OUT} = 5 mA		—	0.85	—	mV/°C

TA79L010P
Electrical Characteristics
(Unless otherwise specified, V_{IN} = −16 V, I_{OUT} = 40 mA, C_{IN} = 0.33 μF, C_{OUT} = 0.1 μF, 0°C ≤ T_j ≤ 125°C)

Characteristics	Symbol	Test Circuit	Test Condition		Min	Typ.	Max	Unit
Output voltage	V_{OUT}	1	T_j = 25°C		−10.4	−10.0	−9.6	V
Line regulation	Reg·line	1	T_j = 25°C	−25 V ≤ V_{IN} ≤ −12.5 V	—	80	230	mV
				−25 V ≤ V_{IN} ≤ −13 V	—	30	170	
Load regulation	Reg·load	1	T_j = 25°C	1.0 mA ≤ I_{OUT} ≤ 100 mA	—	18	90	mV
				1.0 mA ≤ I_{OUT} ≤ 40 mA	—	8.5	45	
Output voltage	V_{OUT}	1	T_j = 25°C	−25 V ≤ V_{IN} ≤ −12.5 V, 1.0 mA ≤ I_{OUT} ≤ 40 mA	−10.5	—	−9.5	V
				1.0 mA ≤ I_{OUT} ≤ 70 mA	−10.5	—	−9.5	
Quiescent current	I_B	1	T_j = 25°C		—	3.2	6.5	mA
			T_j = 125°C		—	—	6.0	
Quiescent current change	ΔI_{BI}	1	T_j = 25°C	−25 V ≤ V_{IN} ≤ −13 V	—	—	1.5	mA
	ΔI_{BO}	1		1.0 mA ≤ I_{OUT} ≤ 40 mA	—	—	0.1	
Output noise voltage	V_{NO}	2	Ta = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	70	—	μV_{rms}
Long term stability	$\Delta V_{OUT}/\Delta t$	1	—		—	22	—	mV/kh
Ripple rejection ratio	R.R.	3	−24 V ≤ V_{IN} ≤ −13 V, T_j = 25°C, f = 120 Hz		36	43	—	dB
Dropout voltage	V_D	1	T_j = 25°C		—	1.7	—	V
Average temperature coefficient of output voltage	T_{CVO}	1	I_{OUT} = 5 mA		—	0.9	—	mV/°C

TA79L012P
Electrical Characteristics
(Unless otherwise specified, V_{IN} = −19 V, I_{OUT} = 40 mA, C_{IN} = 0.33 μF, C_{OUT} = 0.1 μF, 0°C ≤ T_j ≤ 125°C)

Characteristics	Symbol	Test Circuit	Test Condition		Min	Typ.	Max	Unit
Output voltage	V_{OUT}	1	T_j = 25°C		−12.5	−12.0	−11.5	V
Line regulation	Reg·line	1	T_j = 25°C	−27 V ≤ V_{IN} ≤ −14.5 V	—	120	250	mV
				−27 V ≤ V_{IN} ≤ −16 V	—	100	200	
Load regulation	Reg·load	1	T_j = 25°C	1.0 mA ≤ I_{OUT} ≤ 100 mA	—	20	100	mV
				1.0 mA ≤ I_{OUT} ≤ 40 mA	—	10	50	
Output voltage	V_{OUT}	1	T_j = 25°C	−27 V ≤ V_{IN} ≤ −14.5 V, 1.0 mA ≤ I_{OUT} ≤ 40 mA	−12.6	—	−11.4	V
				1.0 mA ≤ I_{OUT} ≤ 70 mA	−12.6	—	−11.4	
Quiescent current	I_B	1	T_j = 25°C		—	3.2	6.5	mA
			T_j = 125°C		—	—	6.0	
Quiescent current change	ΔI_{BI}	1	T_j = 25°C	−27 V ≤ V_{IN} ≤ −16 V	—	—	1.5	mA
	ΔI_{BO}	1		1.0 mA ≤ I_{OUT} ≤ 40 mA	—	—	0.1	
Output noise voltage	V_{NO}	2	Ta = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	80	—	μV_{rms}
Long term stability	$\Delta V_{OUT}/\Delta t$	1	—		—	24	—	mV/kh
Ripple rejection ratio	R.R.	3	−25 V ≤ V_{IN} ≤ −15 V, T_j = 25°C, f = 120 Hz		37	42	—	dB
Dropout voltage	V_D	1	T_j = 25°C		—	1.7	—	V
Average temperature coefficient of output voltage	T_{CVO}	1	I_{OUT} = 5 mA		—	1.0	—	mV/°C

TA79L015P
Electrical Characteristics
(Unless otherwise specified, V_{IN} = −23 V, I_{OUT} = 40 mA, C_{IN} = 0.33 μF, C_{OUT} = 0.1 μF, 0°C ≤ T_j ≤ 125°C)

Characteristics	Symbol	Test Circuit	Test Condition		Min	Typ.	Max	Unit
Output voltage	V_{OUT}	1	T_j = 25°C		−15.6	−15.0	−14.4	V
Line regulation	Reg·line	1	T_j = 25°C	−30 V ≤ V_{IN} ≤ −17.5 V	—	130	300	mV
				−30 V ≤ V_{IN} ≤ −20 V	—	110	250	
Load regulation	Reg·load	1	T_j = 25°C	1.0 mA ≤ I_{OUT} ≤ 100 mA	—	25	150	mV
				1.0 mA ≤ I_{OUT} ≤ 40 mA	—	12	75	
Output voltage	V_{OUT}	1	T_j = 25°C	−30 V ≤ V_{IN} ≤ −17.5 V, 1.0 mA ≤ I_{OUT} ≤ 40 mA	−15.75	—	−14.25	V
				1.0 mA ≤ I_{OUT} ≤ 70 mA	−15.75	—	−14.25	
Quiescent current	I_B	1	T_j = 25°C		—	3.3	6.5	mA
			T_j = 125°C		—	—	6.0	
Quiescent current change	ΔI_{BI}	1	T_j = 25°C	−30 V ≤ V_{IN} ≤ −20 V	—	—	1.5	mA
	ΔI_{BO}	1		1.0 mA ≤ I_{OUT} ≤ 40 mA	—	—	0.1	
Output noise voltage	V_{NO}	2	Ta = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	90	—	μV_{rms}
Long term stability	$\Delta V_{OUT}/\Delta t$	1	—		—	30	—	mV/kh
Ripple rejection ratio	R.R.	3	−28.5 V ≤ V_{IN} ≤ −18.5 V, T_j = 25°C, f = 120 Hz		34	39	—	dB
Dropout voltage	V_D	1	T_j = 25°C		—	1.7	—	V
Average temperature coefficient of output voltage	T_{CVO}	1	I_{OUT} = 5 mA		—	1.3	—	mV/°C

TA79L018P
Electrical Characteristics
(Unless otherwise specified, V_{IN} = −27 V, I_{OUT} = 40 mA, C_{IN} = 0.33 μF, C_{OUT} = 0.1 μF, 0°C ≤ T_j ≤ 125°C)

Characteristics	Symbol	Test Circuit	Test Condition		Min	Typ.	Max	Unit
Output voltage	V_{OUT}	1	T_j = 25°C		−18.7	−18.0	−17.3	V
Line regulation	Reg·line	1	T_j = 25°C	−33 V ≤ V_{IN} ≤ 20.7 V	—	32	325	mV
				−33 V ≤ V_{IN} ≤ −21 V	—	27	275	
Load regulation	Reg·load	1	T_j = 25°C	1.0 mA ≤ I_{OUT} ≤ 100 mA	—	30	170	mV
				1.0 mA ≤ I_{OUT} ≤ 40 mA	—	15	75	
Output voltage	V_{OUT}	1	T_j = 25°C	−33 V ≤ V_{IN} ≤ −20.9 V, 1.0 mA ≤ I_{OUT} ≤ 40 mA	−18.9	—	−17.1	V
				1.0 mA ≤ I_{OUT} ≤ 70 mA	−18.9	—	−17.1	
Quiescent current	I_B	1	T_j = 25°C		—	3.3	6.5	mA
			T_j = 125°C		—	—	6.0	
Quiescent current change	ΔI_{BI}	1	T_j = 25°C	−33 V ≤ V_{IN} ≤ −21 V	—	—	1.5	mA
	ΔI_{BO}	1		1.0 mA ≤ I_{OUT} ≤ 40 mA	—	—	0.1	
Output noise voltage	V_{NO}	2	Ta = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	150	—	μV_{rms}
Long term stability	$\Delta V_{OUT}/\Delta t$	1	—		—	45	—	mV/kh
Ripple rejection ratio	R.R.	3	−33 V ≤ V_{IN} ≤ −23 V, T_j = 25°C, f = 120 Hz		33	48	—	dB
Dropout voltage	V_D	1	T_j = 25°C		—	1.7	—	V
Average temperature coefficient of output voltage	T_{CVO}	1	I_{OUT} = 5 mA		—	1.5	—	mV/°C

TA79L020P
Electrical Characteristics
(Unless otherwise specified, V_{IN} = −29 V, I_{OUT} = 40 mA, C_{IN} = 0.33 μF, C_{OUT} = 0.1 μF, 0°C ≤ T_j ≤ 125°C)

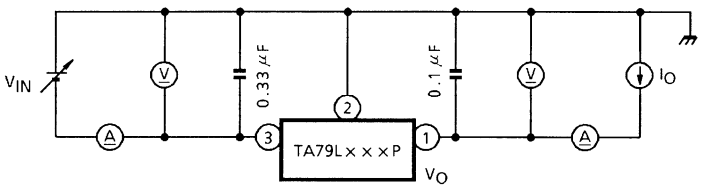
Characteristics	Symbol	Test Circuit	Test Condition		Min	Typ.	Max	Unit
Output voltage	V_{OUT}	1	T_j = 25°C		−20.8	−20.0	−19.2	V
Line regulation	Reg·line	1	T_j = 25°C	−35 V ≤ V_{IN} ≤ −23.5 V	—	33	330	mV
				−35 V ≤ V_{IN} ≤ −24 V	—	28	285	
Load regulation	Reg·load	1	T_j = 25°C	1.0 mA ≤ I_{OUT} ≤ 100 mA	—	33	180	mV
				1.0 mA ≤ I_{OUT} ≤ 40 mA	—	17	90	
Output voltage	V_{OUT}	1	T_j = 25°C	−35 V ≤ V_{IN} ≤ −23.5 V, 1.0 mA ≤ I_{OUT} ≤ 40 mA	−21.0	—	−19.0	V
				1.0 mA ≤ I_{OUT} ≤ 70 mA	−21.0	—	−19.0	
Quiescent current	I_B	1	T_j = 25°C		—	3.3	6.5	mA
			T_j = 125°C		—	—	6.0	
Quiescent current change	ΔI_{BI}	1	T_j = 25°C	−35 V ≤ V_{IN} ≤ −24 V	—	—	1.5	mA
	ΔI_{BO}	1		1.0 mA ≤ I_{OUT} ≤ 40 mA	—	—	0.1	
Output noise voltage	V_{NO}	2	Ta = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	170	—	μV_{rms}
Long term stability	$\Delta V_{OUT}/\Delta t$	1	—		—	49	—	mV/kh
Ripple rejection ratio	R.R.	3	−35 V ≤ V_{IN} ≤ −27 V, T_j = 25°C, f = 120 Hz		31	37	—	dB
Dropout voltage	V_D	1	T_j = 25°C		—	1.7	—	V
Average temperature coefficient of output voltage	T_{CVO}	1	I_{OUT} = 5 mA		—	1.7	—	mV/°C

TA79L024P
Electrical Characteristics
(Unless otherwise specified, V_{IN} = −33 V, I_{OUT} = 40 mA, C_{IN} = 0.33 μF, C_{OUT} = 0.1 μF, 0°C ≤ T_j ≤ 125°C)

Characteristics	Symbol	Test Circuit	Test Condition		Min	Typ.	Max	Unit
Output voltage	V_{OUT}	1	T_j = 25°C		−25.0	−24.0	−23.0	V
Line regulation	Reg·line	1	T_j = 25°C	−38 V ≤ V_{IN} ≤ −27 V	—	35	350	mV
				−38 V ≤ V_{IN} ≤ −28 V	—	30	300	
Load regulation	Reg·load	1	T_j = 25°C	1.0 mA ≤ I_{OUT} ≤ 100 mA	—	40	200	mV
				1.0 mA ≤ I_{OUT} ≤ 40 mA	—	20	100	
Output voltage	V_{OUT}	1	T_j = 25°C	−38 V ≤ V_{IN} ≤ −27 V, 1.0 mA ≤ I_{OUT} ≤ 40 mA	−25.2	—	−22.8	V
				1.0 mA ≤ I_{OUT} ≤ 70 mA	−25.2	—	−22.8	
Quiescent current	I_B	1	T_j = 25°C		—	3.5	6.5	mA
			T_j = 125°C		—	—	6.0	
Quiescent current change	ΔI_{BI}	1	T_j = 25°C	−38 V ≤ V_{IN} ≤ −28 V	—	—	1.5	mA
	ΔI_{BO}	1		1.0 mA ≤ I_{OUT} ≤ 40 mA	—	—	0.1	
Output noise voltage	V_{NO}	2	Ta = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	200	—	μV_{rms}
Long term stability	$\Delta V_{OUT}/\Delta t$	1	—		—	56	—	mV/kh
Ripple rejection ratio	R.R.	3	−35 V ≤ V_{IN} ≤ −29 V, T_j = 25°C, f = 120 Hz		31	47	—	dB
Dropout voltage	V_D	1	T_j = 25°C		—	1.7	—	V
Average temperature coefficient of output voltage	T_{CVO}	1	I_{OUT} = 5 mA		—	2.0	—	mV/°C

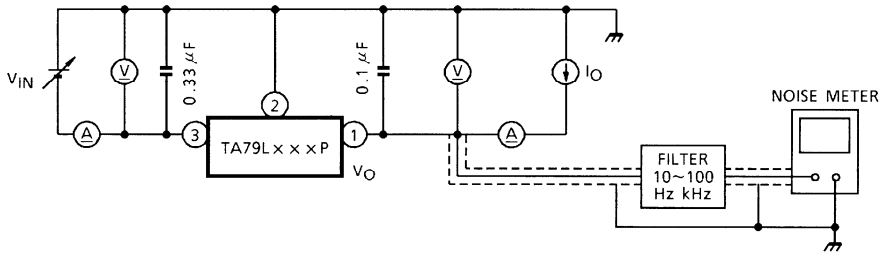
Test Circuit 1

V_{OUT}, Reg·line, Reg·load, I_B, ΔI_B, $\Delta V_{OUT}/\Delta t$, V_D, T_{CVO}



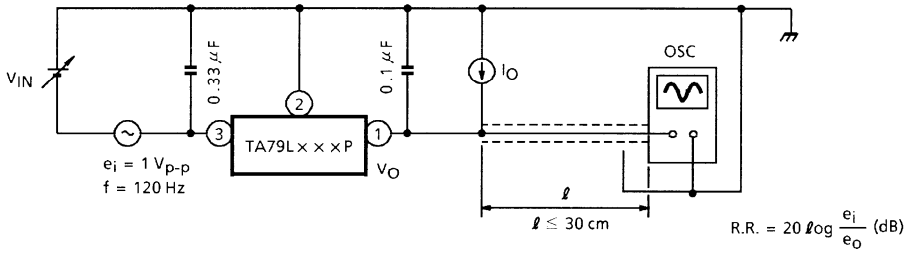
Test Circuit 2

V_{NO}



Test Circuit 3

R.R.



Usage Precautions

- Low voltage

  Do not apply voltage to the Product that is lower than the minimum operating voltage, or the Product's protective functions will not operate properly and the Product may be permanently damaged.

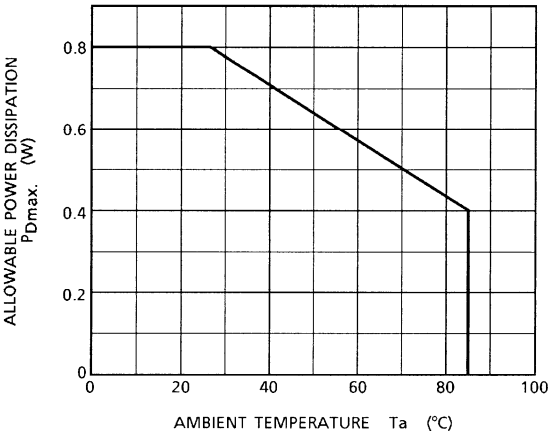
- Overcurrent Protection

  The overcurrent protection circuits in the Product are designed to temporarily protect Product from minor overcurrent of brief duration. When the overcurrent protective function in the Product activates, immediately cease application of overcurrent to Product. Improper usage of Product, such as application of current to Product exceeding the absolute maximum ratings, could cause the overcurrent protection circuit not to operate properly and/or damage Product permanently even before the protection circuit starts to operate.

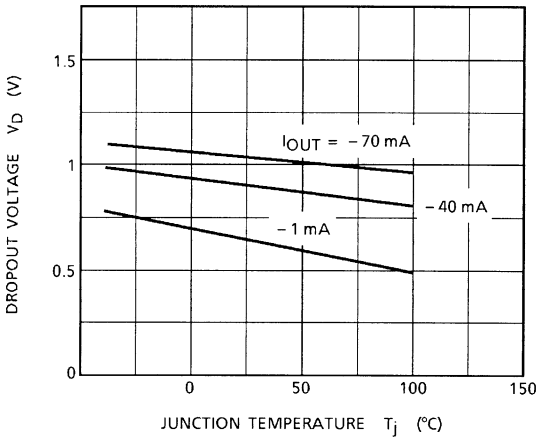
- Overheating Protection

  The thermal shutdown circuits in the Product are designed to temporarily protect Product from minor overheating of brief duration. When the overheating protective function in the Product activates, immediately correct the overheating situation. Improper usage of Product, such as the application of heat to Product exceeding the absolute maximum ratings, could cause the overheating protection circuit not to operate properly and/or damage Product permanently even before the protection circuit starts to operate.

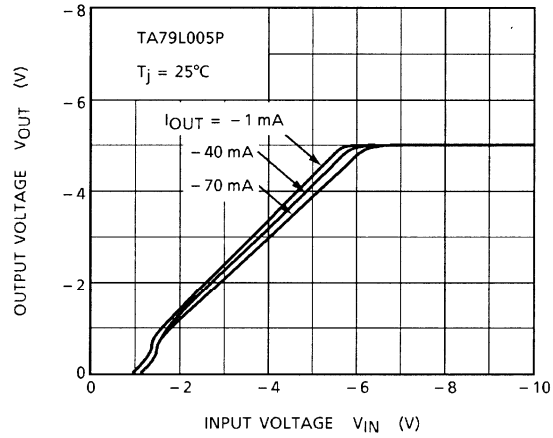
$P_{Dmax.}$ – Ta



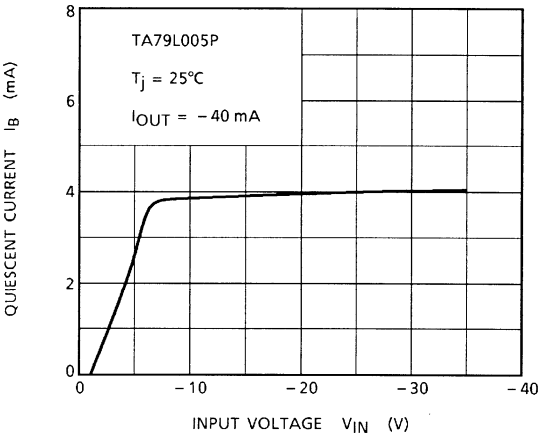
V_D – T_j



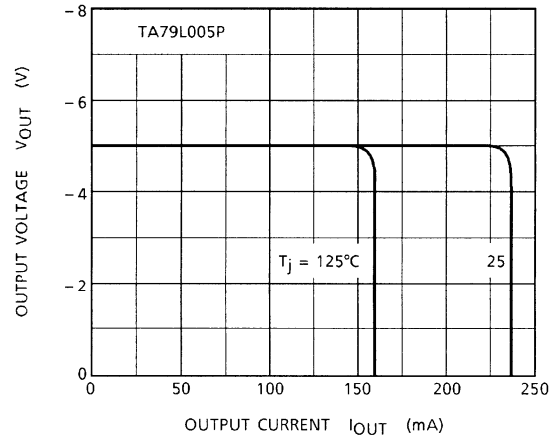
V_{OUT} – V_{IN}



I_B – V_{IN}

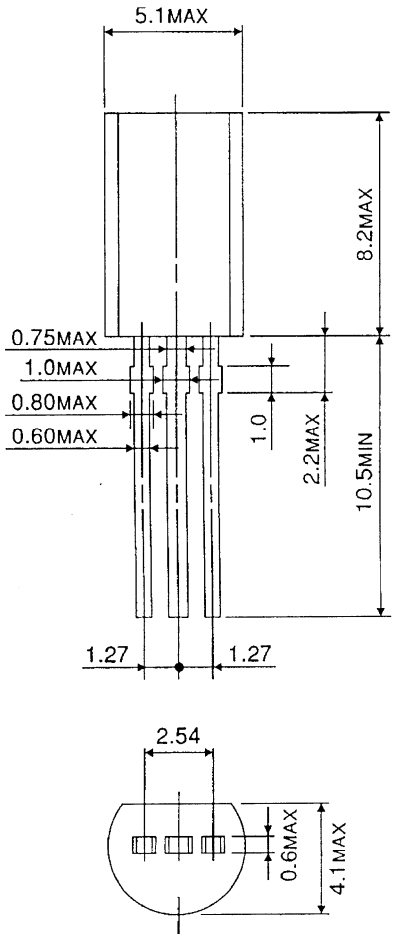


V_{OUT} – I_{OUT}



Package Dimensions

SSIP3-P-1.27 Unit : mm



Weight : 0.36 g (Typ.)

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