

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

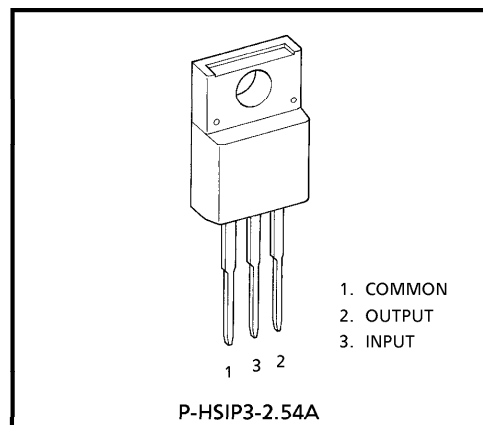
**TA79005S, TA79006S, TA79007S, TA79008S, TA79009S, TA79010S
TA79012S, TA79015S, TA79018S, TA79020S, TA79024S**

1A THREE TERMINAL NEGATIVE VOLTAGE REGULATORS

**-5 V, -6 V, -7 V, -8 V, -9 V, -10 V, -12 V, -15 V, -18 V,
-20 V, -24 V**

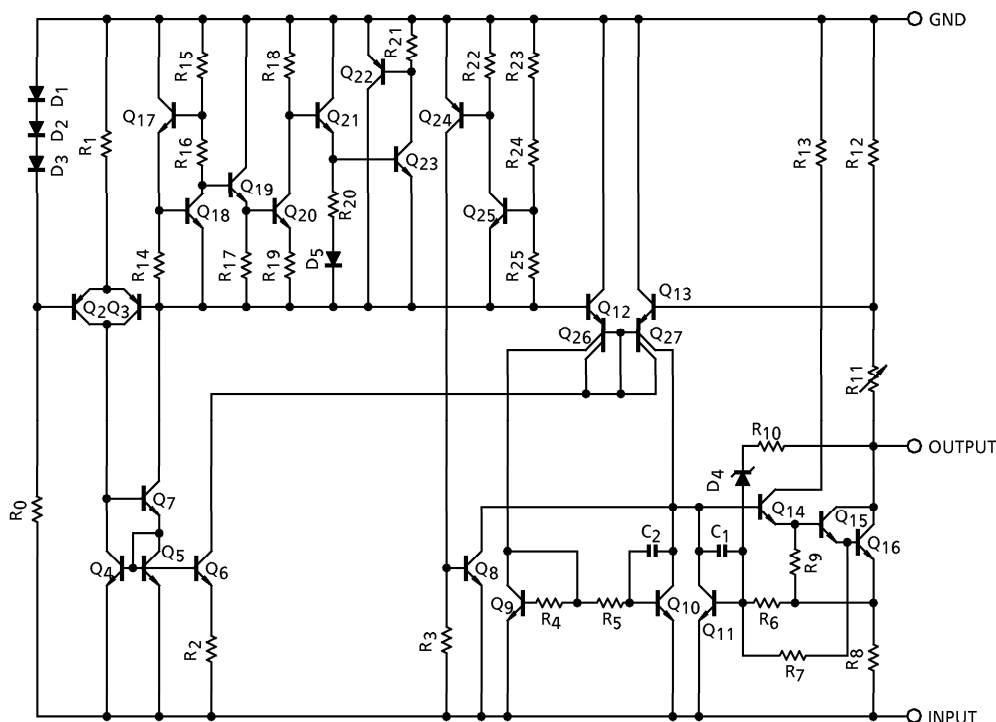
FEATURES

- Suitable for CMOS, TTL, and the other Digital IC Power Supply
- Internal Thermal Overload Protecting
- Internal Short Circuit Current Limiting
- Output Current in Excess of 1.0 A
- Metal Fin (Tab) is fully covered with Mold Resin.
(TO-220 NIS package)



Weight : 1.7 g (Typ.)

EQUIVALENT CIRCUIT



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MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Input Voltage	TA79005S	V _{IN}	- 35	V
	TA79006S			
	TA79007S			
	TA79008S			
	TA79009S			
	TA79010S			
	TA79012S			
	TA79015S			
	TA79018S			
	TA79020S		- 40	
	TA79024S			
Power Dissipation	(Ta = 25°C)	P _D	2	W
	(Tc = 25°C)		20	
Operating Temperature		T _{opr}	- 30~85	°C
Storage Temperature		T _{stg}	- 55~150	°C
Junction Temperature		T _j	150	°C
Thermal Resistance		R _{th (j-c)}	6.25	°C / W
		R _{th (j-a)}	62.5	

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TA79005S

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, $V_{IN} = -10\text{ V}$, $I_{OUT} = 500\text{ mA}$,
 $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-5.2	-5.0	-4.8	V
Line Regulation	Reg·line	1	$T_j = 25^\circ\text{C}$	—	7	50	mV
			$-12\text{ V} \leq V_{IN} \leq -8\text{ V}$ $-25\text{ V} \leq V_{IN} \leq -7\text{ V}$	—	35	100	
Load Regulation	Reg·load	1	$T_j = 25^\circ\text{C}$	—	11	100	mV
			$5\text{ mA} \leq I_{OUT} \leq 1.5\text{ A}$ $250\text{ mA} \leq I_{OUT} \leq 750\text{ mA}$	—	4	50	
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$ $-20\text{ V} \leq V_{IN} \leq -7\text{ V}$ $5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$	-5.25	—	-4.75	V
Quiescent Current	I_B	1	$T_j = 25^\circ\text{C}$	—	4.3	8.0	mA
Quiescent Current Change	Line	1	$-25\text{ V} \leq V_{IN} \leq -7\text{ V}$, $T_j = 25^\circ\text{C}$	—	—	1.3	mA
	Load		$5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$, $T_j = 25^\circ\text{C}$	—	—	0.5	
Output Noise Voltage	V_{NO}	2	$T_a = 25^\circ\text{C}$, $I_{OUT} = 20\text{ mA}$, $10\text{ Hz} \leq f \leq 100\text{ kHz}$	—	40	—	μV_{rms}
Ripple Rejection	R.R.	3	$f = 120\text{ Hz}$, $I_{OUT} = 20\text{ mA}$, $T_j = 25^\circ\text{C}$	63	70	—	dB
Short Circuit Current Limit	I_{SC}	1	$T_j = 25^\circ\text{C}$	—	1.9	—	A
Dropout Voltage	V_D	1	$T_j = 25^\circ\text{C}$, $I_{OUT} = 1.0\text{ A}$	—	2.0	—	V
Average Temperature Coefficient Of Output Voltage	T_{CVO}	1	$I_{OUT} = 5.0\text{ mA}$	—	0.6	—	$\text{mV}/^\circ\text{C}$

TA79006S

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, $V_{IN} = -11\text{ V}$, $I_{OUT} = 500\text{ mA}$,
 $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$)

CHARACTERISTIC	SYMBOL	TEST CIR- CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-6.25	-6.0	-5.75	V
Line Regulation	Reg·line	1	$T_j = 25^\circ\text{C}$	—	9	60	mV
			$-13\text{ V} \leq V_{IN} \leq -9\text{ V}$ $-25\text{ V} \leq V_{IN} \leq -8\text{ V}$	—	43	120	
Load Regulation	Reg·load	1	$T_j = 25^\circ\text{C}$	—	13	120	mV
			$5\text{ mA} \leq I_{OUT} \leq 1.5\text{ A}$ $250\text{ mA} \leq I_{OUT} \leq 750\text{ mA}$	—	5	60	
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$ $-21\text{ V} \leq V_{IN} \leq -8\text{ V}$ $5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$	-6.3	—	-5.7	V
Quiescent Current	I_B	1	$T_j = 25^\circ\text{C}$	—	4.3	8.0	mA
Quiescent Current Change	Line	1	$-25\text{ V} \leq V_{IN} \leq -8\text{ V}$, $T_j = 25^\circ\text{C}$	—	—	1.3	mA
	Load	1	$5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$, $T_j = 25^\circ\text{C}$	—	—	0.5	
Output Noise Voltage	V_{NO}	2	$T_a = 25^\circ\text{C}$, $I_{OUT} = 20\text{ mA}$, $10\text{ Hz} \leq f \leq 100\text{ kHz}$	—	45	—	μV_{rms}
Ripple Rejection	R.R.	3	$f = 120\text{ Hz}$, $I_{OUT} = 20\text{ mA}$, $T_j = 25^\circ\text{C}$	61	68	—	dB
Short Circuit Current Limit	I_{SC}	1	$T_j = 25^\circ\text{C}$	—	1.9	—	A
Dropout Voltage	V_D	1	$T_j = 25^\circ\text{C}$, $I_{OUT} = 1.0\text{ A}$	—	2.0	—	V
Average Temperature Coefficient Of Output Voltage	T_{CVO}	1	$I_{OUT} = 5.0\text{ mA}$	—	0.7	—	$\text{mV}/^\circ\text{C}$

TA79007S

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, $V_{IN} = -12\text{ V}$, $I_{OUT} = 500\text{ mA}$,
 $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-7.28	-7.0	-6.72	V
Line Regulation	Reg·line	1	$T_j = 25^\circ\text{C}$	—	10	70	mV
			$-15\text{ V} \leq V_{IN} \leq -10\text{ V}$ $-25\text{ V} \leq V_{IN} \leq -9\text{ V}$	—	45	140	
Load Regulation	Reg·load	1	$T_j = 25^\circ\text{C}$	—	20	140	mV
			$5\text{ mA} \leq I_{OUT} \leq 1.5\text{ A}$ $250\text{ mA} \leq I_{OUT} \leq 750\text{ mA}$	—	7	70	
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$ $-22\text{ V} \leq V_{IN} \leq -9\text{ V}$ $5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$	-7.35	—	-6.65	V
Quiescent Current	I_B	1	$T_j = 25^\circ\text{C}$	—	4.3	8.0	mA
Quiescent Current Change	Line	1	$-25\text{ V} \leq V_{IN} \leq -9\text{ V}$, $T_j = 25^\circ\text{C}$	—	—	1.0	mA
	Load	1	$5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$, $T_j = 25^\circ\text{C}$	—	—	0.5	
Output Noise Voltage	V_{NO}	2	$T_a = 25^\circ\text{C}$, $I_{OUT} = 20\text{ mA}$, $10\text{ Hz} \leq f \leq 100\text{ kHz}$	—	49	—	μV_{rms}
Ripple Rejection	R.R.	3	$f = 120\text{ Hz}$, $I_{OUT} = 20\text{ mA}$, $T_j = 25^\circ\text{C}$	60	67	—	dB
Short Circuit Current Limit	I_{SC}	1	$T_j = 25^\circ\text{C}$	—	1.9	—	A
Dropout Voltage	V_D	1	$T_j = 25^\circ\text{C}$, $I_{OUT} = 1.0\text{ A}$	—	2.0	—	V
Average Temperature Coefficient Of Output Voltage	T_{CVO}	1	$I_{OUT} = 5.0\text{ mA}$	—	0.9	—	$\text{mV}/^\circ\text{C}$

TA79008S

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, $V_{IN} = -14\text{ V}$, $I_{OUT} = 500\text{ mA}$,
 $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$)

CHARACTERISTIC	SYMBOL	TEST CIR- CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-8.3	-8.0	-7.7	V
Line Regulation	Reg·line	1	$T_j = 25^\circ\text{C}$	—	11	80	mV
			$-17\text{ V} \leq V_{IN} \leq -11\text{ V}$ $-25\text{ V} \leq V_{IN} \leq -10.5\text{ V}$	—	47	160	
Load Regulation	Reg·load	1	$T_j = 25^\circ\text{C}$	—	26	160	mV
			$5\text{ mA} \leq I_{OUT} \leq 1.5\text{ A}$ $250\text{ mA} \leq I_{OUT} \leq 750\text{ mA}$	—	9	80	
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$ $-23\text{ V} \leq V_{IN} \leq -10.5\text{ V}$ $5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$	-8.4	—	-7.6	V
Quiescent Current	I_B	1	$T_j = 25^\circ\text{C}$	—	4.3	8.0	mA
Quiescent Current Change	Line	1	$-25\text{ V} \leq V_{IN} \leq -10.5\text{ V}$, $T_j = 25^\circ\text{C}$	—	—	1.0	mA
	Load	1	$5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$, $T_j = 25^\circ\text{C}$	—	—	0.5	
Output Noise Voltage	V_{NO}	2	$T_a = 25^\circ\text{C}$, $I_{OUT} = 20\text{ mA}$, $10\text{ Hz} \leq f \leq 100\text{ kHz}$	—	52	—	μV_{rms}
Ripple Rejection	R.R.	3	$f = 120\text{ Hz}$, $I_{OUT} = 20\text{ mA}$, $T_j = 25^\circ\text{C}$	59	66	—	dB
Short Circuit Current Limit	I_{SC}	1	$T_j = 25^\circ\text{C}$	—	1.9	—	A
Dropout Voltage	V_D	1	$T_j = 25^\circ\text{C}$, $I_{OUT} = 1.0\text{ A}$	—	2.0	—	V
Average Temperature Coefficient Of Output Voltage	T_{CVO}	1	$I_{OUT} = 5.0\text{ mA}$	—	1.0	—	$\text{mV}/^\circ\text{C}$

TA79009S

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, $V_{IN} = -15\text{ V}$, $I_{OUT} = 500\text{ mA}$,
 $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-9.3	-9.0	-8.7	V
Line Regulation	Reg·line	1	$T_j = 25^\circ\text{C}$				
			$-19\text{ V} \leq V_{IN} \leq -13\text{ V}$	—	11	82	mV
			$-26\text{ V} \leq V_{IN} \leq -11.5\text{ V}$	—	48	162	
Load Regulation	Reg·load	1	$T_j = 25^\circ\text{C}$				
			$5\text{ mA} \leq I_{OUT} \leq 1.5\text{ A}$	—	33	162	mV
			$250\text{ mA} \leq I_{OUT} \leq 750\text{ mA}$	—	11	82	
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-9.4	—	-8.6	V
Quiescent Current	I_B	1	$T_j = 25^\circ\text{C}$	—	4.3	8.0	mA
Quiescent Current Change	Line	1	$-26.5\text{ V} \leq V_{IN} \leq -13\text{ V}$, $T_j = 25^\circ\text{C}$	—	—	1.0	mA
	Load	1	$5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$, $T_j = 25^\circ\text{C}$	—	—	0.5	
Output Noise Voltage	V_{NO}	2	$T_a = 25^\circ\text{C}$, $I_{OUT} = 20\text{ mA}$, $10\text{ Hz} \leq f \leq 100\text{ kHz}$	—	60	—	μV_{rms}
Ripple Rejection	R.R.	3	$f = 120\text{ Hz}$, $I_{OUT} = 20\text{ mA}$, $T_j = 25^\circ\text{C}$	57	64	—	dB
Short Circuit Current Limit	I_{SC}	1	$T_j = 25^\circ\text{C}$	—	1.9	—	A
Dropout Voltage	V_D	1	$T_j = 25^\circ\text{C}$, $I_{OUT} = 1.0\text{ A}$	—	2.0	—	V
Average Temperature Coefficient Of Output Voltage	T_{CVO}	1	$I_{OUT} = 5.0\text{ mA}$	—	1.1	—	$\text{mV}/^\circ\text{C}$

TA79010S

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, $V_{IN} = -16\text{ V}$, $I_{OUT} = 500\text{ mA}$,
 $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$)

CHARACTERISTIC	SYMBOL	TEST CIR- CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-10.4	-10	-9.6	V
Line Regulation	Reg·line	1	$T_j = 25^\circ\text{C}$				
			$-20\text{ V} \leq V_{IN} \leq -14\text{ V}$	—	12	90	mV
			$-27\text{ V} \leq V_{IN} \leq -12.5\text{ V}$	—	50	180	
Load Regulation	Reg·load	1	$T_j = 25^\circ\text{C}$				
			$5\text{ mA} \leq I_{OUT} \leq 1.5\text{ A}$	—	40	180	mV
			$250\text{ mA} \leq I_{OUT} \leq 750\text{ mA}$	—	13	90	
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-10.5	—	-9.5	V
Quiescent Current	I_B	1	$T_j = 25^\circ\text{C}$	—	4.4	8.0	mA
Quiescent Current Change	Line	1	$-27.5\text{ V} \leq V_{IN} \leq -14\text{ V}$, $T_j = 25^\circ\text{C}$	—	—	1.0	mA
	Load	1	$5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$, $T_j = 25^\circ\text{C}$	—	—	0.5	
Output Noise Voltage	V_{NO}	2	$T_a = 25^\circ\text{C}$, $I_{OUT} = 20\text{ mA}$, $10\text{ Hz} \leq f \leq 100\text{ kHz}$	—	65	—	μV_{rms}
Ripple Rejection	R.R.	3	$f = 120\text{ Hz}$, $I_{OUT} = 20\text{ mA}$, $T_j = 25^\circ\text{C}$	57	63	—	dB
Short Circuit Current Limit	I_{SC}	1	$T_j = 25^\circ\text{C}$	—	1.9	—	A
Dropout Voltage	V_D	1	$T_j = 25^\circ\text{C}$, $I_{OUT} = 1.0\text{ A}$	—	2.0	—	V
Average Temperature Coefficient Of Output Voltage	T_{CVO}	1	$I_{OUT} = 5.0\text{ mA}$	—	1.3	—	$\text{mV}/^\circ\text{C}$

TA79012S

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, $V_{IN} = -19\text{ V}$, $I_{OUT} = 500\text{ mA}$,
 $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$)

CHARACTERISTIC	SYMBOL	TEST CIR- CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-12.5	-12	-11.5	V
Line Regulation	Reg·line	1	$T_j = 25^\circ\text{C}$	-	13	120	mV
			$-22\text{ V} \leq V_{IN} \leq -16\text{ V}$ $-30\text{ V} \leq V_{IN} \leq -14.5\text{ V}$	-	55	240	
Load Regulation	Reg·load	1	$T_j = 25^\circ\text{C}$	-	46	240	mV
			$5\text{ mA} \leq I_{OUT} \leq 1.5\text{ A}$ $250\text{ mA} \leq I_{OUT} \leq 750\text{ mA}$	-	17	120	
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$ $-27\text{ V} \leq V_{IN} \leq -14.5\text{ V}$ $5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$	-12.6	-	-11.4	V
Quiescent Current	I_B	1	$T_j = 25^\circ\text{C}$	-	4.4	8.0	mA
Quiescent Current Change	Line	1	$-30\text{ V} \leq V_{IN} \leq -14.5\text{ V}$, $T_j = 25^\circ\text{C}$	-	-	1.0	mA
	Load	1	$5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$, $T_j = 25^\circ\text{C}$	-	-	0.5	
Output Noise Voltage	V_{NO}	2	$T_a = 25^\circ\text{C}$, $I_{OUT} = 20\text{ mA}$, $10\text{ Hz} \leq f \leq 100\text{ kHz}$	-	75	-	μV_{rms}
Ripple Rejection	R.R.	3	$f = 120\text{ Hz}$, $I_{OUT} = 20\text{ mA}$, $T_j = 25^\circ\text{C}$	54	61	-	dB
Short Circuit Current Limit	I_{SC}	1	$T_j = 25^\circ\text{C}$	-	1.9	-	A
Dropout Voltage	V_D	1	$T_j = 25^\circ\text{C}$, $I_{OUT} = 1.0\text{ A}$	-	2.0	-	V
Average Temperature Coefficient Of Output Voltage	T_{CVO}	1	$I_{OUT} = 5.0\text{ mA}$	-	1.6	-	$\text{mV}/^\circ\text{C}$

TA79015S

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, $V_{IN} = -23\text{ V}$, $I_{OUT} = 500\text{ mA}$,
 $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$)

CHARACTERISTIC	SYMBOL	TEST CIR- CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-15.6	-15	-14.4	V
Line Regulation	Reg·line	1	$T_j = 25^\circ\text{C}$	-	14	150	mV
			$-26\text{ V} \leq V_{IN} \leq -20\text{ V}$ $-30\text{ V} \leq V_{IN} \leq -17.5\text{ V}$	-	57	300	
Load Regulation	Reg·load	1	$T_j = 25^\circ\text{C}$	-	68	300	mV
			$5\text{ mA} \leq I_{OUT} \leq 1.5\text{ A}$ $250\text{ mA} \leq I_{OUT} \leq 750\text{ mA}$	-	25	150	
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$ $-30\text{ V} \leq V_{IN} \leq -17.5\text{ V}$ $5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$	-15.75	-	-14.25	V
Quiescent Current	I_B	1	$T_j = 25^\circ\text{C}$	-	4.4	8.0	mA
Quiescent Current Change	Line	1	$-30\text{ V} \leq V_{IN} \leq -17.5\text{ V}$, $T_j = 25^\circ\text{C}$	-	-	1.0	mA
	Load	1	$5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$, $T_j = 25^\circ\text{C}$	-	-	0.5	
Output Noise Voltage	V_{NO}	2	$T_a = 25^\circ\text{C}$, $I_{OUT} = 20\text{ mA}$, $10\text{ Hz} \leq f \leq 100\text{ kHz}$	-	90	-	μV_{rms}
Ripple Rejection	R.R.	3	$f = 120\text{ Hz}$, $I_{OUT} = 20\text{ mA}$, $T_j = 25^\circ\text{C}$	53	60	-	dB
Short Circuit Current Limit	I_{SC}	1	$T_j = 25^\circ\text{C}$	-	1.9	-	A
Dropout Voltage	V_D	1	$T_j = 25^\circ\text{C}$, $I_{OUT} = 1.0\text{ A}$	-	2.0	-	V
Average Temperature Coefficient Of Output Voltage	T_{CVO}	1	$I_{OUT} = 5.0\text{ mA}$	-	2.0	-	$\text{mV}/^\circ\text{C}$

TA79018S

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, $V_{IN} = -27\text{ V}$, $I_{OUT} = 500\text{ mA}$,
 $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Output Voltage	V _{OUT}	1	T _j = 25°C		− 18.7	− 18	− 17.3	V
Line Regulation	Reg·line	1	T _j = 25°C	− 30V ≤ V _{IN} ≤ − 24V	—	25	180	mV
				− 33 V ≤ V _{IN} ≤ − 21 V	—	80	360	
Load Regulation	Reg·load	1	T _j = 25°C	5 mA ≤ I _{OUT} ≤ 1.5 A	—	110	360	mV
				250 mA ≤ I _{OUT} ≤ 750 mA	—	55	180	
Output Voltage	V _{OUT}	1	T _j = 25°C	− 33 V ≤ V _{IN} ≤ − 21 V 5 mA ≤ I _{OUT} ≤ 1.0 A	− 18.85	—	− 17.15	V
Quiescent Current		I _B	1	T _j = 25°C	—	4.5	8.0	mA
Quiescent Current Change	Line	ΔI _B	1	− 33 V ≤ V _{IN} ≤ − 21 V, T _j = 25°C	—	—	1.0	mA
	Load		1	5 mA ≤ I _{OUT} ≤ 1.0 A, T _j = 25°C	—	—	0.5	
Output Noise Voltage	V _{NO}	2	T _a = 25°C, I _{OUT} = 20 mA, 10 Hz ≤ f ≤ 100 kHz		—	110	—	μV _{rms}
Ripple Rejection	R.R.	3	f = 120 Hz, I _{OUT} = 20 mA, T _j = 25°C		52	59	—	dB
Short Circuit Current Limit	I _{SC}	1	T _j = 25°C		—	1.9	—	A
Dropout Voltage	V _D	1	T _j = 25°C, I _{OUT} = 1.0 A		—	2.0	—	V
Average Temperature Coefficient Of Output Voltage	T _{CVO}	1	I _{OUT} = 5.0 mA		—	2.5	—	mV / °C

TA79020S

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, $V_{IN} = -30\text{ V}$, $I_{OUT} = 500\text{ mA}$,
 $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-20.8	-20	-19.2	V
Line Regulation	Reg·line	1	$T_j = 25^\circ\text{C}$	—	28	180	mV
			$-32\text{ V} \leq V_{IN} \leq -26\text{ V}$ $-35\text{ V} \leq V_{IN} \leq -24\text{ V}$	—	104	360	
Load Regulation	Reg·load	1	$T_j = 25^\circ\text{C}$	—	130	360	mV
			$5\text{ mA} \leq I_{OUT} \leq 1.5\text{ A}$ $250\text{ mA} \leq I_{OUT} \leq 750\text{ mA}$	—	70	180	
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$ $-35\text{ V} \leq V_{IN} \leq -24\text{ V}$ $5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$	-21.0	—	-19.0	V
Quiescent Current	I_B	1	$T_j = 25^\circ\text{C}$	—	4.6	8.0	mA
Quiescent Current Change	Line	ΔI_B	1	$-36.5\text{ V} \leq V_{IN} \leq -25\text{ V}$, $T_j = 25^\circ\text{C}$		1.0	mA
	Load		1	$5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$, $T_j = 25^\circ\text{C}$		0.5	
Output Noise Voltage	V_{NO}	2	$T_a = 25^\circ\text{C}$, $I_{OUT} = 20\text{ mA}$, $10\text{ Hz} \leq f \leq 100\text{ kHz}$	—	140	—	μV_{rms}
Ripple Rejection	R.R.	3	$f = 120\text{ Hz}$, $I_{OUT} = 20\text{ mA}$, $T_j = 25^\circ\text{C}$	50	57	—	dB
Short Circuit Current Limit	I_{SC}	1	$T_j = 25^\circ\text{C}$	—	1.9	—	A
Dropout Voltage	V_D	1	$T_j = 25^\circ\text{C}$, $I_{OUT} = 1.0\text{ A}$	—	2.0	—	V
Average Temperature Coefficient Of Output Voltage	T_{CVO}	1	$I_{OUT} = 5.0\text{ mA}$	—	3.0	—	$\text{mV}/^\circ\text{C}$

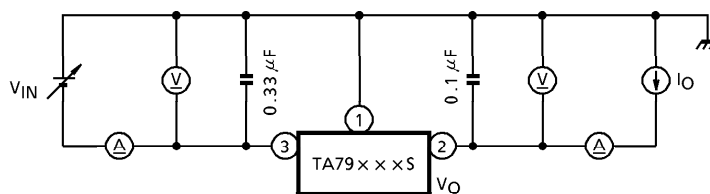
TA79024S

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, $V_{IN} = -33\text{ V}$, $I_{OUT} = 500\text{ mA}$,
 $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$)

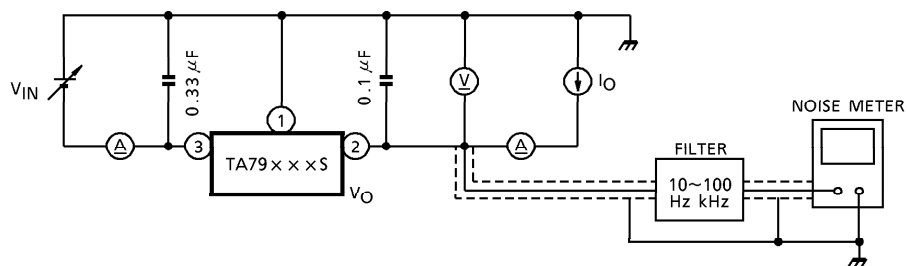
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-25.0	-24	-23.0	V
Line Regulation	Reg·line	1	$T_j = 25^\circ\text{C}$	—	31	240	mV
			$-36\text{ V} \leq V_{IN} \leq -30\text{ V}$ $-38\text{ V} \leq V_{IN} \leq -27\text{ V}$	—	118	480	
Load Regulation	Reg·load	1	$T_j = 25^\circ\text{C}$	—	150	480	mV
			$5\text{ mA} \leq I_{OUT} \leq 1.5\text{ A}$ $250\text{ mA} \leq I_{OUT} \leq 750\text{ mA}$	—	85	240	
Output Voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$ $-38\text{ V} \leq V_{IN} \leq -27\text{ V}$ $5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$	-25.2	—	-22.8	V
Quiescent Current	I_B	1	$T_j = 25^\circ\text{C}$	—	4.6	8.0	mA
Quiescent Current Change	Line	1	$-38\text{ V} \leq V_{IN} \leq -27\text{ V}$, $T_j = 25^\circ\text{C}$	—	—	1.0	mA
	Load	1	$5\text{ mA} \leq I_{OUT} \leq 1.0\text{ A}$, $T_j = 25^\circ\text{C}$	—	—	0.5	
Output Noise Voltage	V_{NO}	2	$T_a = 25^\circ\text{C}$, $I_{OUT} = 20\text{ mA}$, $10\text{ Hz} \leq f \leq 100\text{ kHz}$	—	170	—	μV_{rms}
Ripple Rejection	R.R.	3	$f = 120\text{ Hz}$, $I_{OUT} = 20\text{ mA}$, $T_j = 25^\circ\text{C}$	49	56	—	dB
Short Circuit Current Limit	I_{SC}	1	$T_j = 25^\circ\text{C}$	—	1.9	—	A
Dropout Voltage	V_D	1	$T_j = 25^\circ\text{C}$, $I_{OUT} = 1.0\text{ A}$	—	2.0	—	V
Average Temperature Coefficient Of Output Voltage	T_{CVO}	1	$I_{OUT} = 5.0\text{ mA}$	—	3.5	—	$\text{mV}/^\circ\text{C}$

TEST CIRCUIT

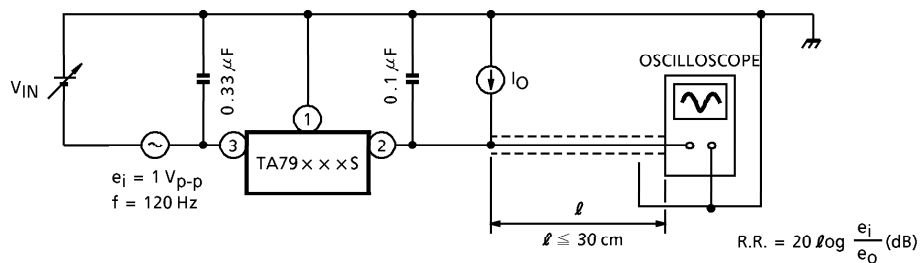
1. V_{OUT} , Reg.line, Reg.load, I_B , ΔI_B , V_D , T_{CVO}

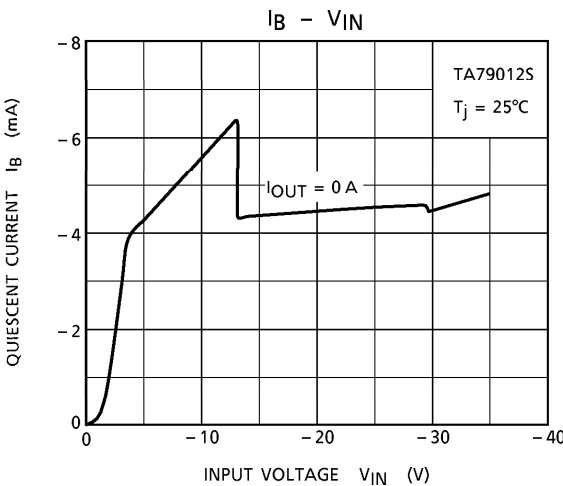
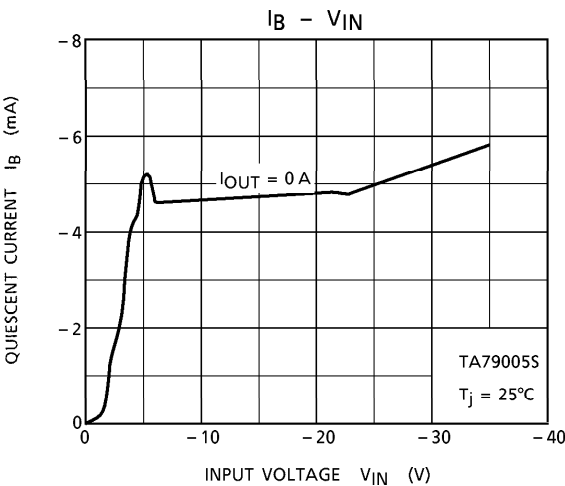
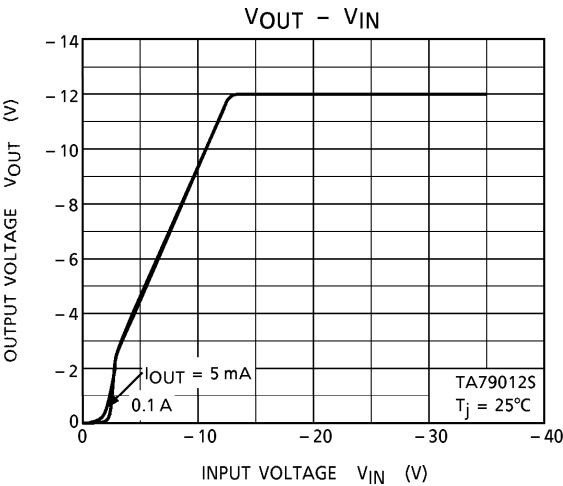
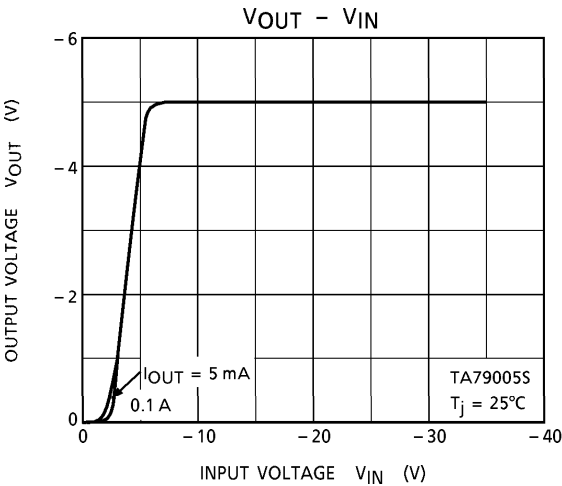
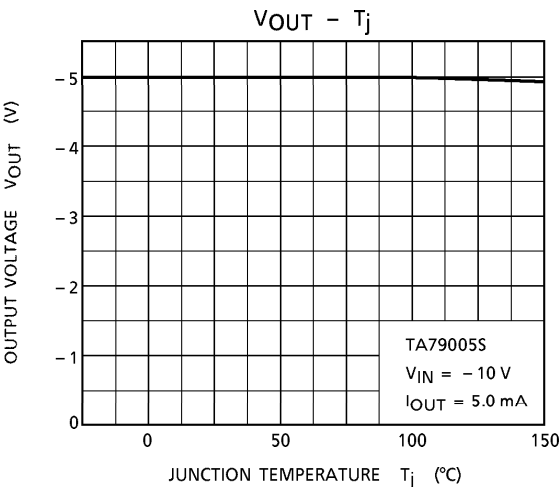
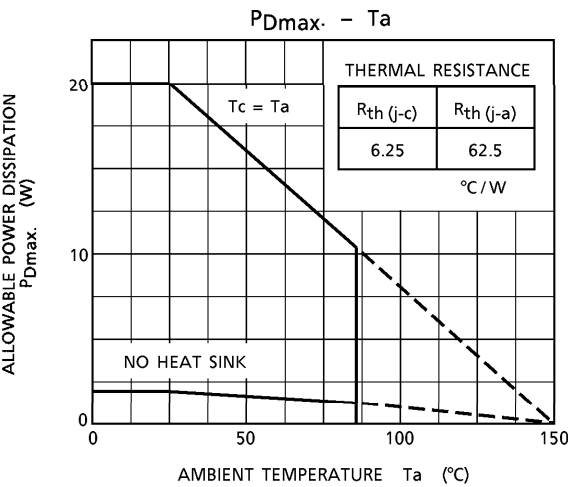


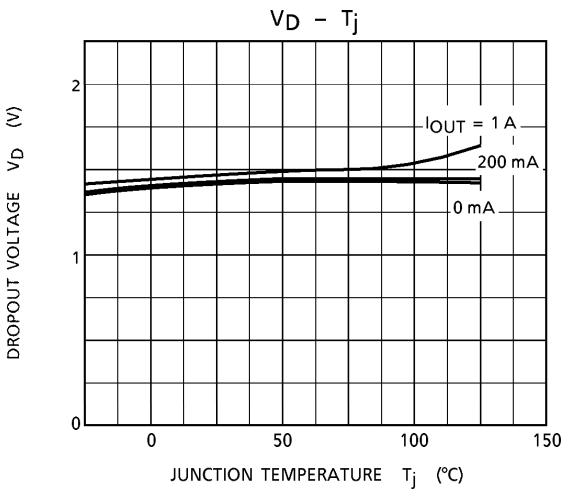
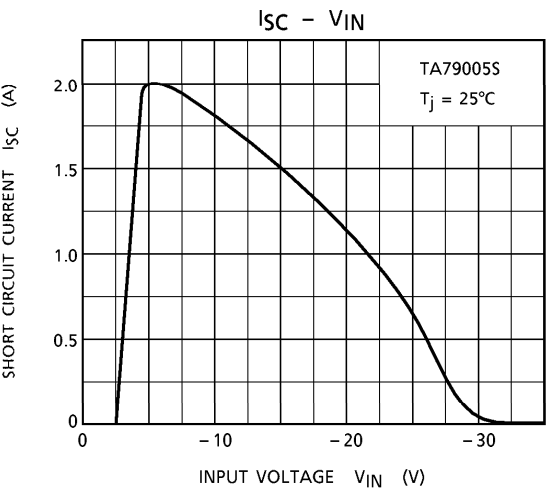
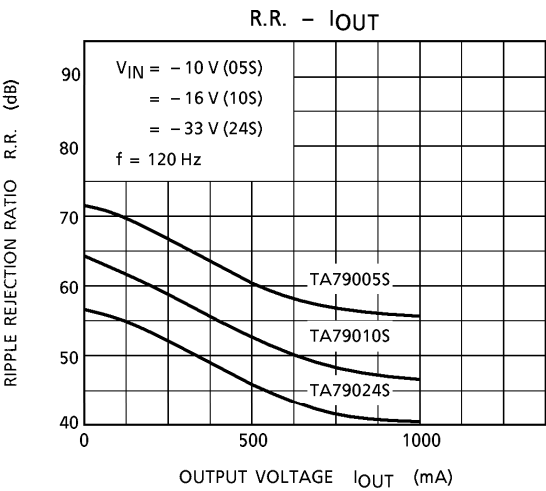
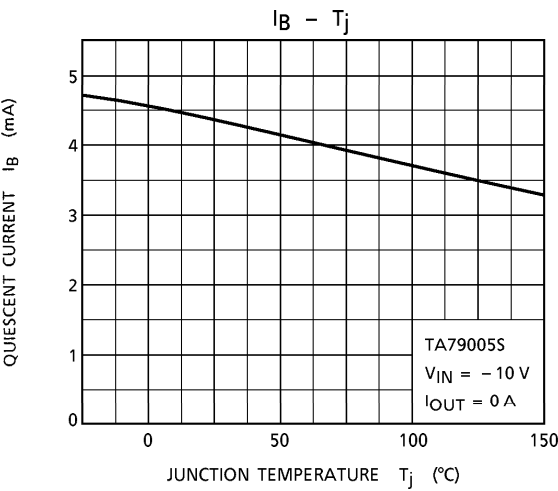
2. V_{NO}



3. R.R.

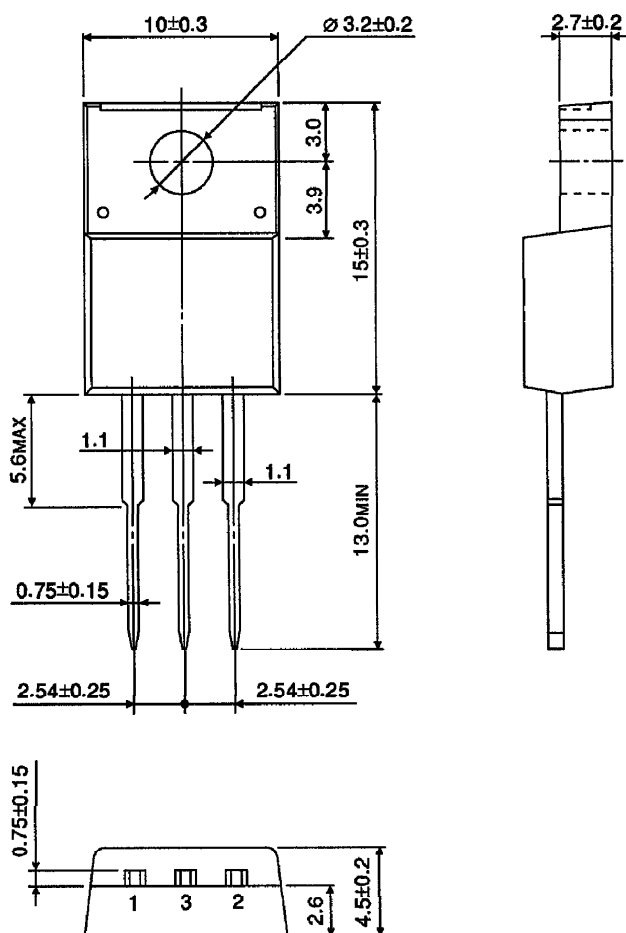






PACKAGE DIMENSIONS
P-HSIP3-2.54A

Unit : mm



Weight : 1.7 g (Typ.)