

TOSHIBA Bipolar Linear Integrated Circuit Silicon Monolithic

**TA79L05F, TA79L06F, TA79L08F, TA79L09F, TA79L10F,
TA79L12F, TA79L15F, TA79L18F, TA79L20F, TA79L24F**

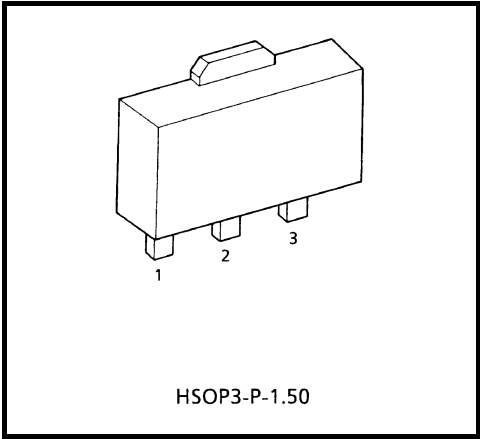
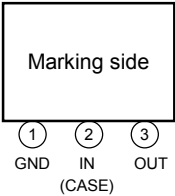
Three-Terminal Negative Voltage Regulators

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

Features

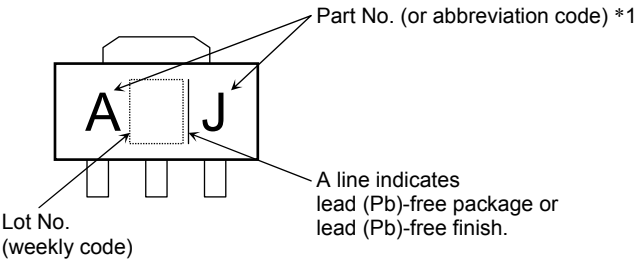
- Best suited to a power supply for TTL and C²MOS.
- Built-in over-current protective circuit.
- Built-in thermal protective circuit.
- Maximum output current of 150 mA (T_j = 25°C).
- Packaged in Power Mini. (SOT-89).

Pin Assignment



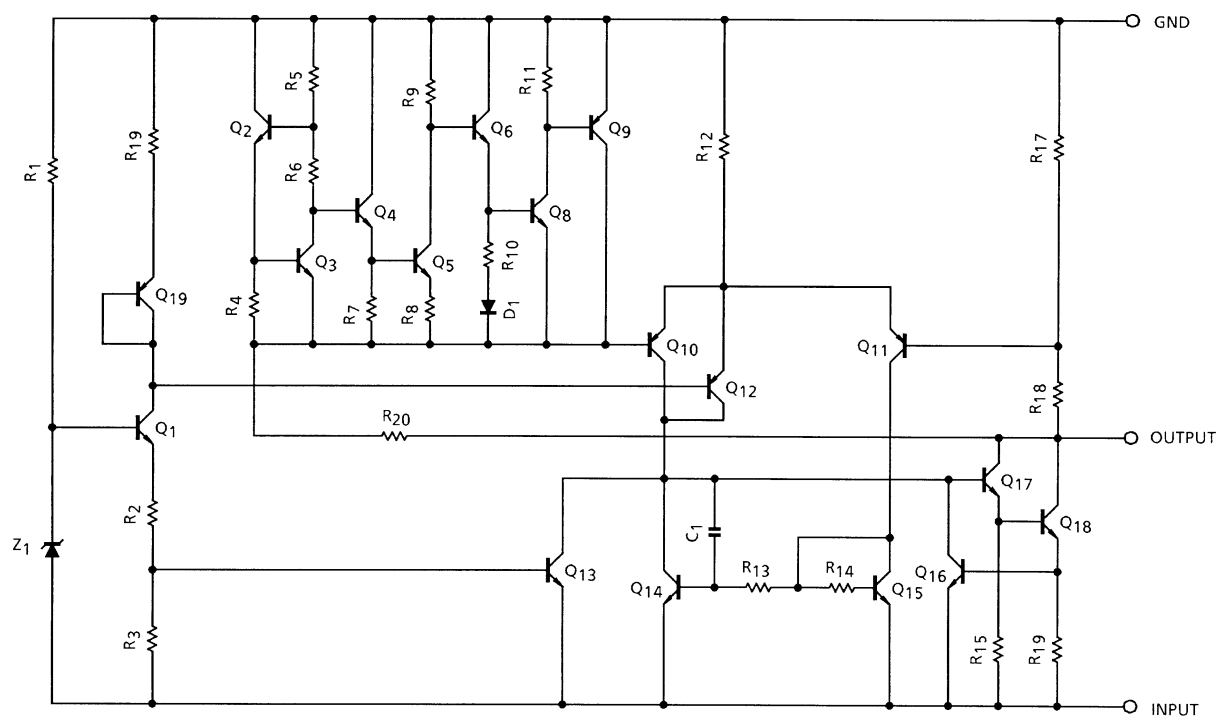
Weight: 0.05 g (Typ.)

Marking



*1	Part No. (or abbreviation code)	Part No.
	AJ	TA79L05F
	BJ	TA79L06F
	CJ	TA79L08F
	DJ	TA79L09F
	EJ	TA79L10F
	FJ	TA79L12F
	GJ	TA79L15F
	HJ	TA79L18F
	IJ	TA79L20F
	JJ	TA79L24F

Equivalent Circuit



Absolute Maximum Ratings (Ta = 25°C)

Characteristics		Symbol	Rating	Unit
Input voltage	TA79L05F	V_{IN}	-35	V
	TA79L06F			
	TA79L08F			
	TA79L09F			
	TA79L10F			
	TA79L12F			
	TA79L15F			
	TA79L18F			
	TA79L20F			
	TA79L24F		-40	
Power dissipation	(Ta = 25°C)	P_D	500	mW
Operating temperature		T_{opr}	-30~85	°C
Storage temperature		T_{stg}	-55~150	°C
Junction temperature		T_j	150	°C
Thermal resistance		$R_{th(j-a)}$	250	°C/W

Type No.	Marking
TA79L05F	AJ
TA79L06F	BJ
TA79L08F	CJ
TA79L09F	DJ
TA79L10F	EJ
TA79L12F	FJ
TA79L15F	GJ
TA79L18F	HJ
TA79L20F	IJ
TA79L24F	JJ

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).

TA79L05F
Electrical Characteristics

(Unless otherwise specified, $V_{IN} = -10\text{ V}$, $I_{OUT} = 40\text{ mA}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$)

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	100	mV
				1.0 mA ≤ I _{OUT} ≤ 40 mA	—	5.0	50	
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	T _a = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	40	—	μV _{rms}
Long term stability	ΔV _{OUT} /Δt	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

TA79L06F
Electrical Characteristics

(Unless otherwise specified, $V_{IN} = -11\text{ V}$, $I_{OUT} = 40\text{ mA}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$)

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	120	mV
				1.0 mA ≤ I _{OUT} ≤ 40 mA	—	5.5	60	
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	-20 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	T _a = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	40	—	μV _{rms}
Long term stability	ΔV _{OUT} /Δt	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 _{CV0}	1	I _{OUT} = 5 mA		—	0.7	—	mV/°C

TA79L08F
Electrical Characteristics

(Unless otherwise specified, $V_{IN} = -14\text{ V}$, $I_{OUT} = 40\text{ mA}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$)

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	155	mV
				1.0 mA ≤ I _{OUT} ≤ 40 mA	—	7.0	75	
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 _B	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	T _a = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	60	—	μV _{rms}
Long term stability	ΔV _{OUT} /Δt	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

TA79L09F
Electrical Characteristics

 (Unless otherwise specified, $V_{IN} = -15\text{ V}$, $I_{OUT} = 40\text{ mA}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$)

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	175	mV
				1.0 mA ≤ I _{OUT} ≤ 40 mA	—	8.0	80	
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 _B	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	T _a = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	65	—	μV _{rms}
Long term stability	ΔV _{OUT} /Δt	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

TA79L10F
Electrical Characteristics

(Unless otherwise specified, $V_{IN} = -16\text{ V}$, $I_{OUT} = 40\text{ mA}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$)

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	190	mV
				1.0 mA ≤ I _{OUT} ≤ 40 mA	—	8.5	90	
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 _B	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	T _a = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	70	—	μV _{rms}
Long term stability	ΔV _{OUT} /Δt	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

TA79L12F
Electrical Characteristics

(Unless otherwise specified, $V_{IN} = -19\text{ V}$, $I_{OUT} = 40\text{ mA}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$)

Characteristics	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Output voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-12.5	-12.0	-11.5	V
Line regulation	Reg.line	1	$T_j = 25^\circ\text{C}$	—	120	250	mV
			$-27\text{ V} \leq V_{IN} \leq -14.5\text{ V}$	—	100	200	
Load regulation	Reg.load	1	$T_j = 25^\circ\text{C}$	—	20	225	mV
			$1.0\text{ mA} \leq I_{OUT} \leq 100\text{ mA}$	—	10	105	
Output voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-12.6	—	-11.4	V
			$-27\text{ V} \leq V_{IN} \leq -14.5\text{ V}$, $1.0\text{ mA} \leq I_{OUT} \leq 40\text{ mA}$	-12.6	—	-11.4	
Quiescent current	I_B	1	$T_j = 25^\circ\text{C}$	—	3.2	6.5	mA
			$T_j = 125^\circ\text{C}$	—	—	6.0	
Quiescent current change	ΔI_B	1	$T_j = 25^\circ\text{C}$	—	—	1.5	mA
	ΔI_{BO}	1	$1.0\text{ mA} \leq I_{OUT} \leq 40\text{ mA}$	—	—	0.1	
Output noise voltage	V_{NO}	2	$T_a = 25^\circ\text{C}$, $10\text{ Hz} \leq f \leq 100\text{ kHz}$	—	80	—	μV_{rms}
Long term stability	$\Delta V_{OUT}/\Delta t$	1	—	—	24	—	mV/kh
Ripple rejection ratio	R.R.	3	$-25\text{ V} \leq V_{IN} \leq -15\text{ V}$, $T_j = 25^\circ\text{C}$, $f = 120\text{ Hz}$	37	42	—	dB
Dropout voltage	V_D	1	$T_j = 25^\circ\text{C}$	—	1.7	—	V
Average temperature coefficient of output voltage	T_{CVO}	1	$I_{OUT} = 5\text{ mA}$	—	1.0	—	mV/ $^\circ\text{C}$

TA79L15F
Electrical Characteristics

(Unless otherwise specified, $V_{IN} = -23\text{ V}$, $I_{OUT} = 40\text{ mA}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$)

Characteristics	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Output voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-15.6	-15.0	-14.4	V
Line regulation	Reg.line	1	$T_j = 25^\circ\text{C}$	—	130	300	mV
			$T_j = 25^\circ\text{C}$	—	110	250	
Load regulation	Reg.load	1	$T_j = 25^\circ\text{C}$	—	25	280	mV
			$T_j = 25^\circ\text{C}$	—	12	130	
Output voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-15.75	—	-14.25	V
			$T_j = 25^\circ\text{C}$	-15.75	—	-14.25	
Quiescent current	I_B	1	$T_j = 25^\circ\text{C}$	—	3.3	6.5	mA
			$T_j = 125^\circ\text{C}$	—	—	6.0	
Quiescent current change	ΔI_{BI}	1	$T_j = 25^\circ\text{C}$	—	—	1.5	mA
	ΔI_{BO}	1	$T_j = 25^\circ\text{C}$	—	—	0.1	
Output noise voltage	V_{NO}	2	$T_a = 25^\circ\text{C}$, $10\text{ Hz} \leq f \leq 100\text{ kHz}$	—	90	—	μV_{rms}
Long term stability	$\Delta V_{OUT}/\Delta t$	1	—	—	30	—	mV/kh
Ripple rejection ratio	R.R.	3	$-28.5\text{ V} \leq V_{IN} \leq -18.5\text{ V}$, $T_j = 25^\circ\text{C}$, $f = 120\text{ Hz}$	34	39	—	dB
Dropout voltage	V_D	1	$T_j = 25^\circ\text{C}$	—	1.7	—	V
Average temperature coefficient of output voltage	T_{CVO}	1	$I_{OUT} = 5\text{ mA}$	—	1.3	—	mV/ $^\circ\text{C}$

TA79L18F
Electrical Characteristics

(Unless otherwise specified, $V_{IN} = -27\text{ V}$, $I_{OUT} = 40\text{ mA}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$)

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	335	mV
				1.0 mA ≤ I _{OUT} ≤ 40 mA	—	15	155	
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	T _a = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	150	—	μV _{rms}
Long term stability	ΔV _{OUT} /Δt	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 _{CV0}	1	I _{OUT} = 5 mA		—	1.5	—	mV/°C

TA79L20F
Electrical Characteristics

(Unless otherwise specified, $V_{IN} = -29\text{ V}$, $I_{OUT} = 40\text{ mA}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$)

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	370	mV
				1.0 mA ≤ I _{OUT} ≤ 40 mA	—	17	170	
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	T _a = 25°C, 10 Hz ≤ f ≤ 100 kHz		—	170	—	μV _{rms}
Long term stability	ΔV _{OUT} /Δt	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 _{CV0}	1	I _{OUT} = 5 mA		—	1.7	—	mV/°C

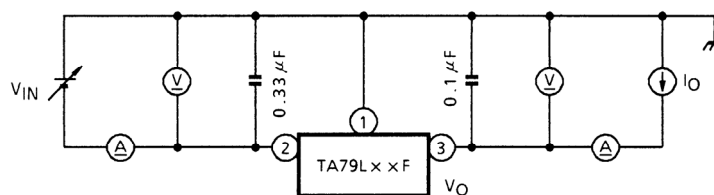
TA79L24F
Electrical Characteristics

(Unless otherwise specified, $V_{IN} = -33\text{ V}$, $I_{OUT} = 40\text{ mA}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$)

Characteristics	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Output voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-25.0	-24.0	-23.0	V
Line regulation	Reg.line	1	$T_j = 25^\circ\text{C}$	—	35	350	mV
			$-38\text{ V} \leq V_{IN} \leq -27\text{ V}$	—	30	300	
Load regulation	Reg.load	1	$T_j = 25^\circ\text{C}$	—	40	440	mV
			$1.0\text{ mA} \leq I_{OUT} \leq 100\text{ mA}$	—	20	200	
Output voltage	V_{OUT}	1	$T_j = 25^\circ\text{C}$	-25.2	—	-22.8	V
			$-38\text{ V} \leq V_{IN} \leq -27\text{ V}$, $1.0\text{ mA} \leq I_{OUT} \leq 40\text{ mA}$	-25.2	—	-22.8	
Quiescent current	I_B	1	$T_j = 25^\circ\text{C}$	—	3.5	6.5	mA
			$T_j = 125^\circ\text{C}$	—	—	6.0	
Quiescent current change	ΔI_B	1	$T_j = 25^\circ\text{C}$	—	—	1.5	mA
	ΔI_{BO}	1	$1.0\text{ mA} \leq I_{OUT} \leq 40\text{ mA}$	—	—	0.1	
Output noise voltage	V_{NO}	2	$T_a = 25^\circ\text{C}$, $10\text{ Hz} \leq f \leq 100\text{ kHz}$	—	200	—	μV_{rms}
Long term stability	$\Delta V_{OUT}/\Delta t$	1	—	—	56	—	mV/kh
Ripple rejection ratio	R.R.	3	$-35\text{ V} \leq V_{IN} \leq -29\text{ V}$, $T_j = 25^\circ\text{C}$, $f = 120\text{ Hz}$	31	47	—	dB
Dropout voltage	V_D	1	$T_j = 25^\circ\text{C}$	—	1.7	—	V
Average temperature coefficient of output voltage	T_{CVO}	1	$I_{OUT} = 5\text{ mA}$	—	2.0	—	mV/ $^\circ\text{C}$

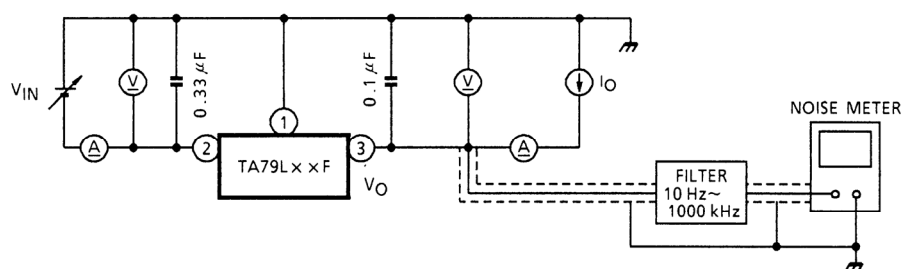
Test Circuit 1

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



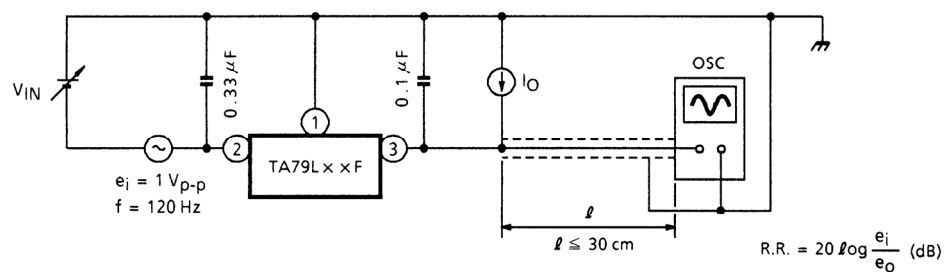
Test Circuit 2

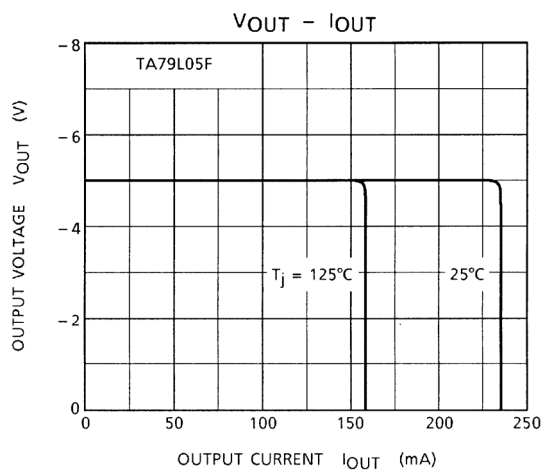
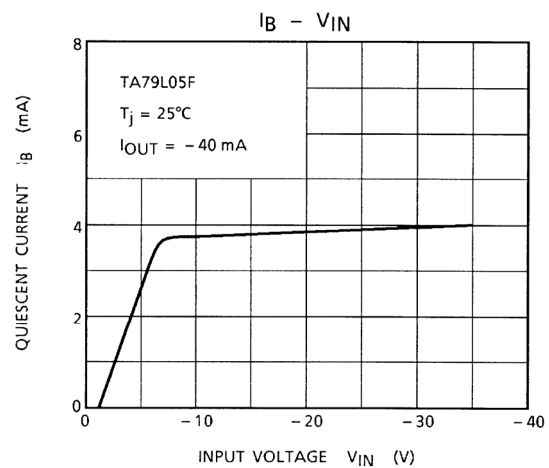
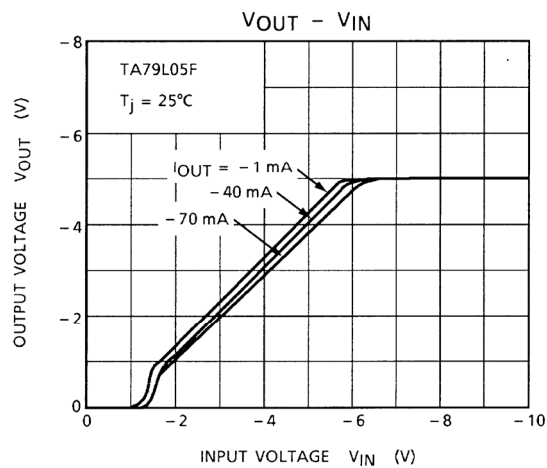
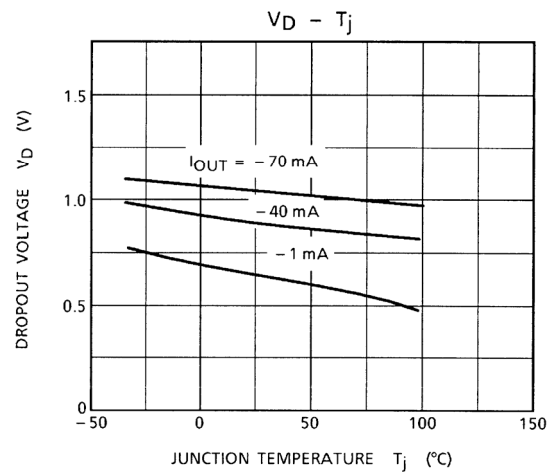
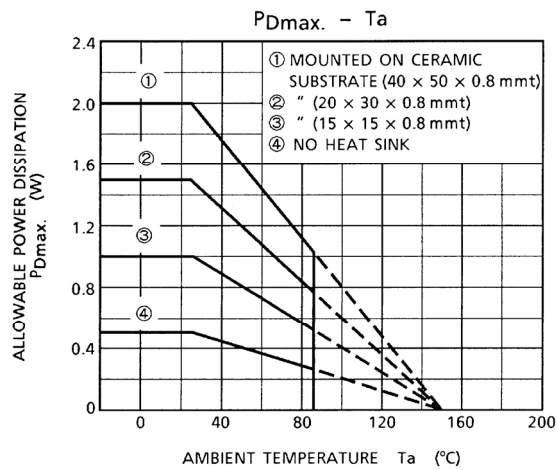
V_{NO}



Test Circuit 3

R.R.

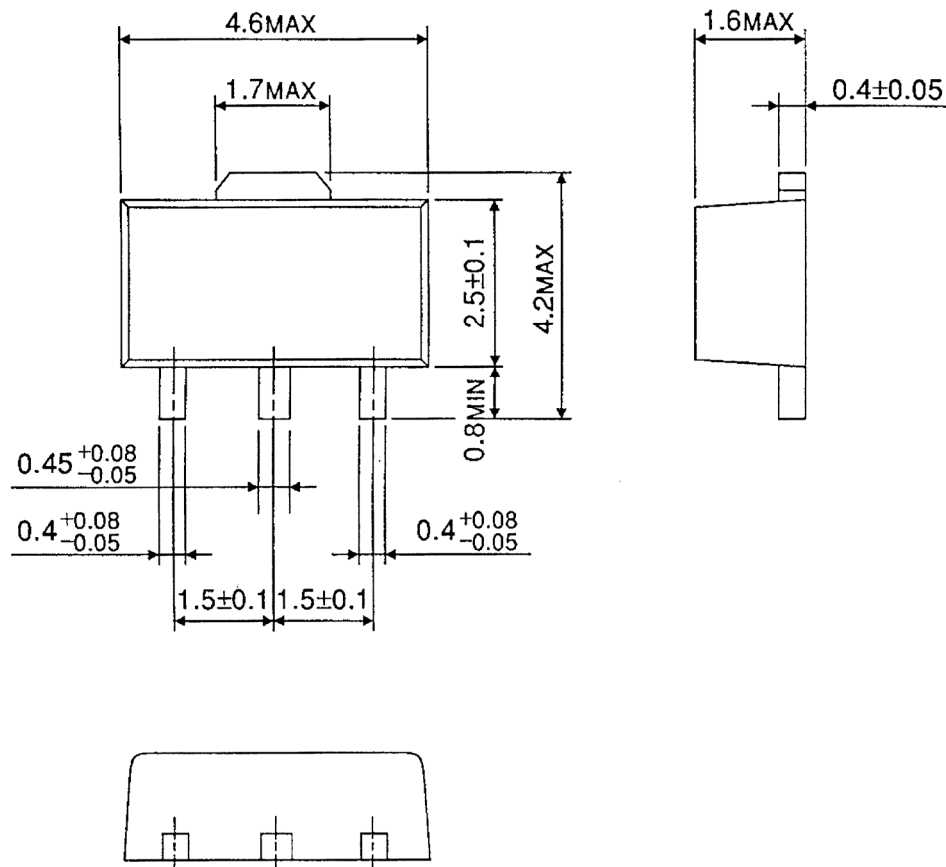




Package Dimensions

HSOP3-P-1.50

Unit : mm



Weight : 0.05 g (Typ.)

RESTRICTIONS ON PRODUCT USE

20070701-EN

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