TOSHIBA Bipolar Linear Integrated Circuit Silicon Monolithic

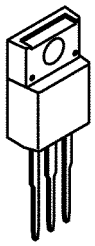
TA79005S,TA79006S,TA79007S,TA79008S,TA79009S,TA79010S, TA79012S,TA79015S,TA79018S,TA79020S,TA79024S

Output Current of 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

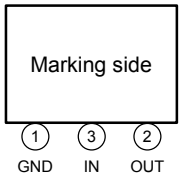
- Suitable for CMOS, TTL, and the other digital IC power supply.
- Internal thermal overload protecting.
- Internal short circuit current limiting.
- Maximum output current of 1.0 A.
- Metal fin (tab) is fully covered with mold resin. (TO-220 NIS package)



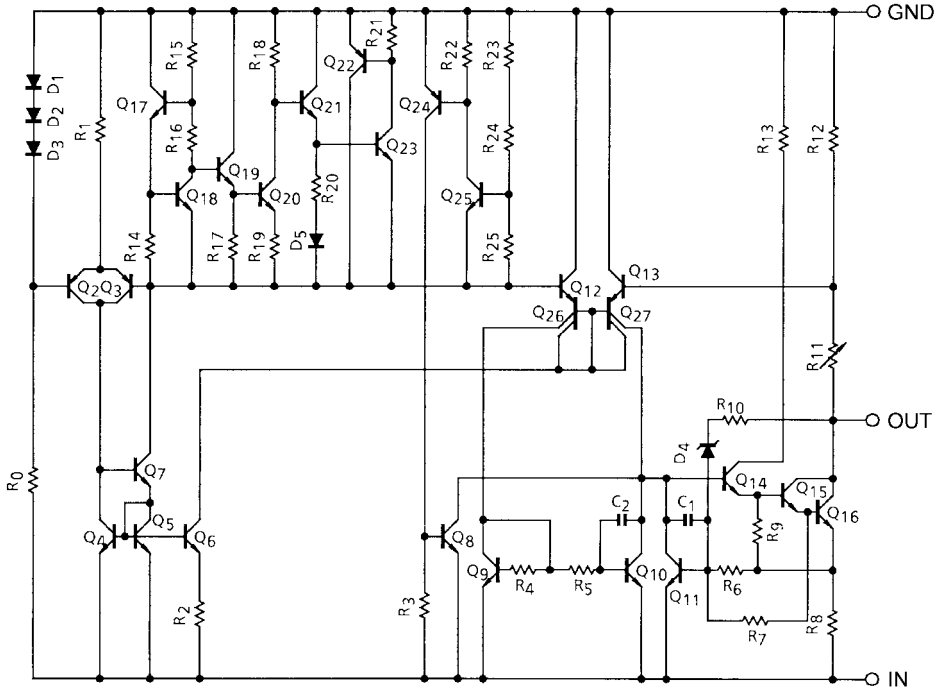
HSIP3-P-2.54A

Weight: 1.7 g (typ.)

Pin Assignment



Equivalent Circuit



Maximum Ratings (Ta = 25°C)

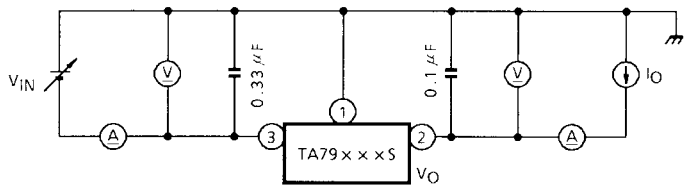
Characteristics		Symbol	Rating	Unit
Input voltage	TA79005S	V_{IN}	−35	V
	TA79006S			
	TA79007S			
	TA79008S			
	TA79009S			
	TA79010S			
	TA79012S			
	TA79015S			
	TA79018S		−40	
	TA79020S			
	TA79024S			
Power dissipation	(Ta = 25°C)	P_D	2	W
	(Tc = 25°C)		20	
Operating temperature		T_{opr}	−30~85	°C
Storage temperature		T_{stg}	−55~150	°C
Junction temperature		T_j	150	°C
Thermal resistance		$R_{th\ (j\text{-}c)}$	6.25	°C/W
		$R_{th\ (j\text{-}a)}$	62.5	

TA79012S
Electrical Characteristics
(Unless otherwise specified, V_{IN} = −19 V, I_{OUT} = 500 mA, 0°C ≤ T_j ≤ 125°C, C_{IN} = 0.33 μF, C_{OUT} = 0.1 μF)

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	−22 V ≤ V_{IN} ≤ −16 V	—	13	120	mV
					−30 V ≤ V_{IN} ≤ −14.5 V	—	55	240	
Load regulation		Reg·load	1	T_j = 25°C	5 mA ≤ I_{OUT} ≤ 1.5 A	—	46	240	mV
					250 mA ≤ I_{OUT} ≤ 750 mA	—	17	120	
Output voltage		V_{OUT}	1	T_j = 25°C	−27 V ≤ V_{IN} ≤ −14.5 V, 5 mA ≤ I_{OUT} ≤ 1.0 A	−12.6	—	−11.4	V
Quiescent current		I_B	1	T_j = 25°C		—	4.4	8.0	mA
Quiescent current change	Line	ΔI_B	1	T_j = 25°C	−30 V ≤ V_{IN} ≤ −14.5 V	—	—	1.0	mA
	Load		1		5 mA ≤ I_{OUT} ≤ 1.0 A	—	—	0.5	
Output noise voltage		V_{NO}	2	Ta = 25°C, I_{OUT} = 20 mA, 10 Hz ≤ f ≤ 100 kHz		—	75	—	μV_{rms}
Ripple rejection		R.R.	3	f = 120 Hz, I_{OUT} = 20 mA, T_j = 25°C		54	61	—	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		—	1.6	—	mV/°C

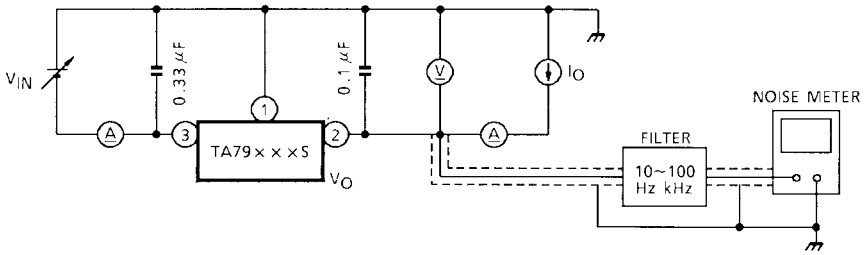
Test Circuit 1

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



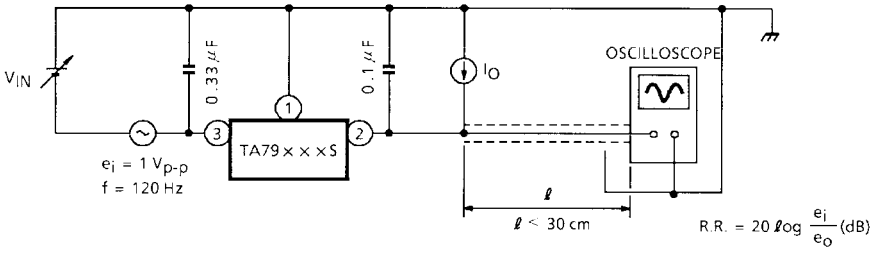
Test Circuit 2

V_{NO}

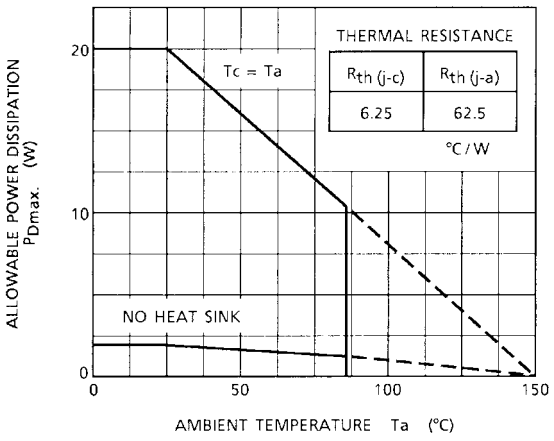


Test Circuit 3

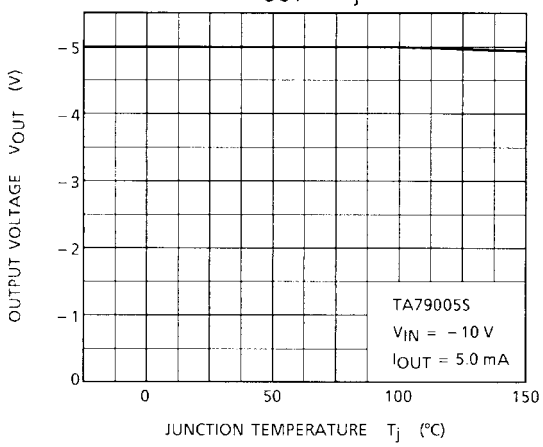
R.R.



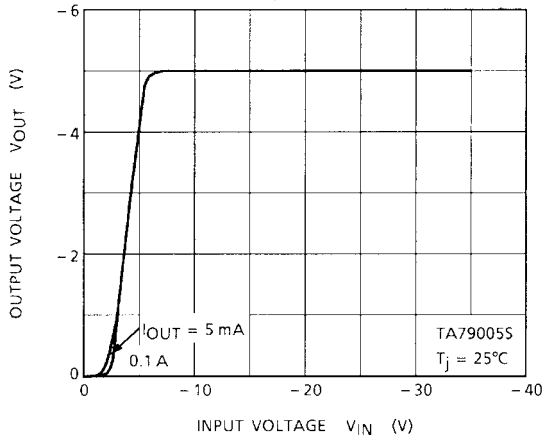
$P_{Dmax.}$ – Ta



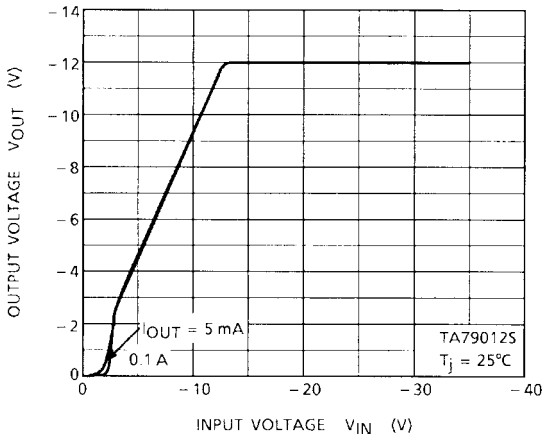
V_{OUT} – T_j



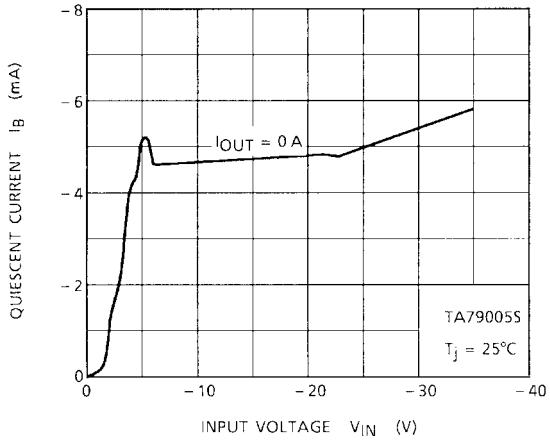
V_{OUT} – V_{IN}



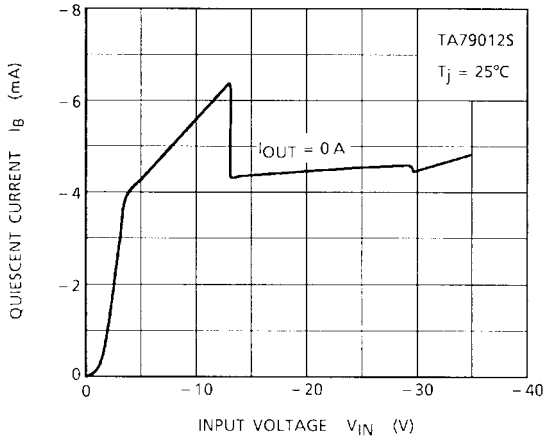
V_{OUT} – V_{IN}



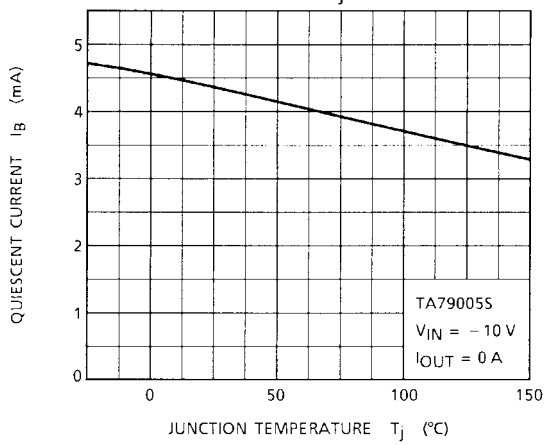
I_B – V_{IN}



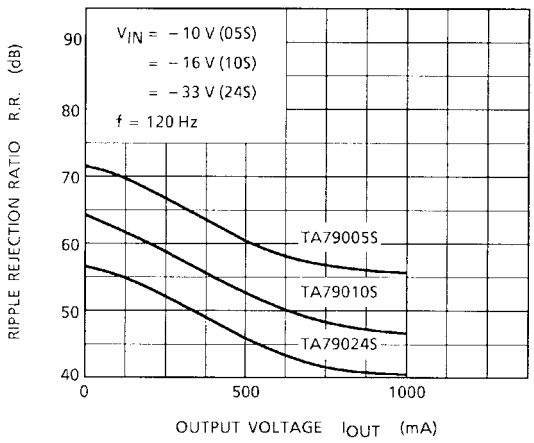
I_B – V_{IN}



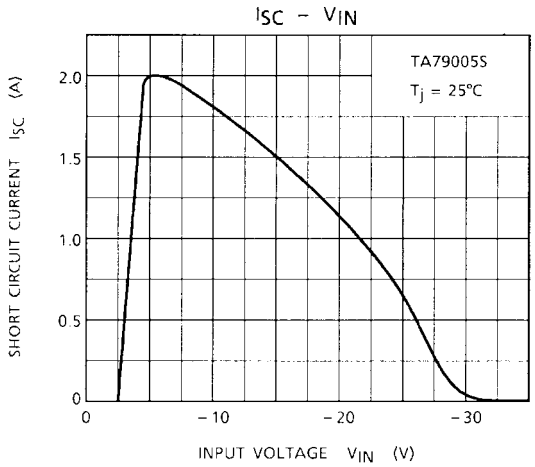
$I_B - T_j$



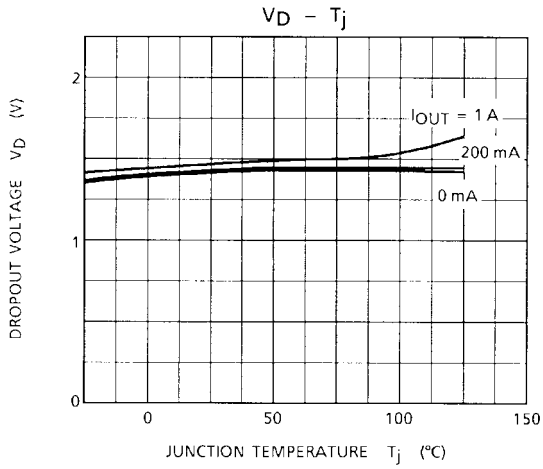
R.R. − I_{OUT}



$I_{SC} - V_{IN}$



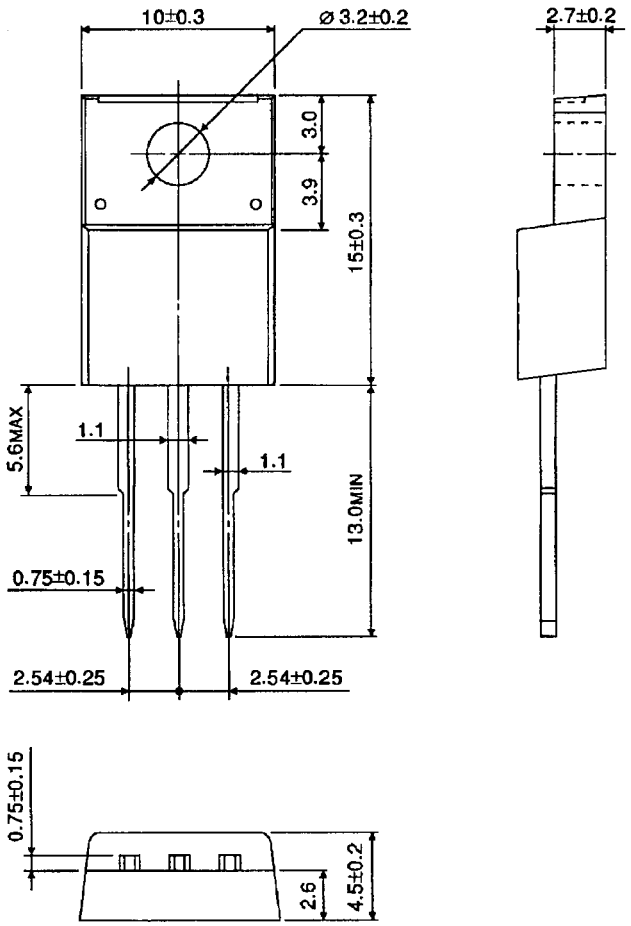
$V_D - T_j$



Package Dimensions

HSIP3-P-2.54A

Unit: mm



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