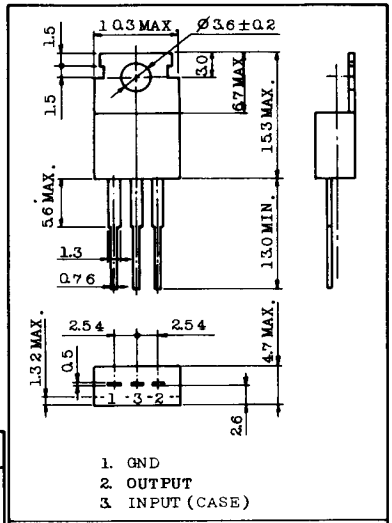
TA79005P ~ TA79015P

1A THREE TERMINAL NEGATIVE VOLTAGE REGULATORS
-5V, -9V, -12V, -15V

- Suitable for C-MOS, TTL, and the other Digital IC Power Supply
- Internal Thermal Overload Protecting
- Internal Short Circuit Current Limiting
- Output Current in Excess of 1.0A
- Package in the Plastic Case TO-220AB

Unit in mm



JEDEC	TO-220AB
EIAJ	SC-46
TOSHIBA	5-10A

Mounting Kit No. AC75

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Input Voltage	TA79005P	V_{IN}	-35	V
	TA79006P			
	TA79008P			
	TA79009P			
	TA79010P			
	TA79012P			
	TA79015P			
Power Dissipation (Tc=25°C)		P_D	20.8	W
Operating Temperature		Topr	-30 ~ 75	°C
Storage Temperature		Tstg	-55 ~ 125	°C

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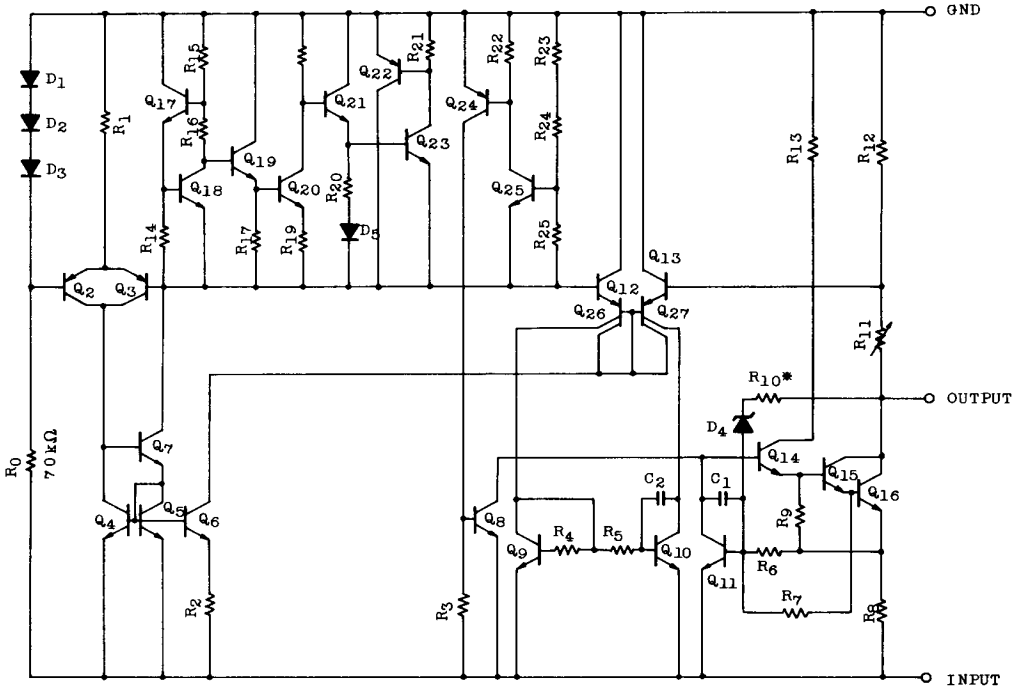
EQUIVALENT CIRCUIT



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ELECTRICAL CHARACTERISTICS

Unless otherwise specified, V_{IN}=-10V, I_{OUT}=500mA, 0°C ≤ Tj ≤ 125°C
C_{IN}=1.0μF, C_{OUT}=1.0μF

CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Output Voltage		V_{OUT}	1	Tj=25°C		-4.8	-5.0	-5.2	V
Input Regulation		Reg·Line	1	Tj=25°C	-25V ≦ V_{IN} ≦ -7V I_{OUT}=100mA	-	7.0	50	mV
					-25V ≦ V_{IN} ≦ -7V I_{OUT}=500mA	-	35	100	mV
Load Regulation		Reg·Load	1	Tj=25°C	5mA ≦ I_{OUT} ≦ 1.5A	-	11	100	mV
					250mA ≦ I_{OUT} ≦ 750mA	-	4.0	50	mV
Output Voltage		V_{OUT}	1	-20V ≦ V_{IN} ≦ -7V 5mA ≦ I_{OUT} ≦ 1.0A		-4.75	-	-5.25	V
Quiescent Current		I_B	1	Tj=25°C		-	4.3	8.0	mA
Quiescent Current Charge	Line	ΔI_{BO}	1	-25V ≦ V_{IN} ≦ -7V		-	-	1.3	mA
	Load	ΔI_{BI}	1	1.0A ≦ I_{OUT} ≦ 5mA		-	-	0.5	mA
Output Noise Voltage		V_{NO}	2	Ta=25°C, 10Hz ≦ f ≦ 100kHz		-	40	-	μV
Ripple Rejection		RR	3	f=120Hz, I_{OUT}=20mA		63	70	-	dB
Short Circuit Current Limit		I_{SC}	1	Tj=25°C		-	1.9	-	A
Average Temperature Coefficient Output Voltage		T_{CVO}	1	I_{OUT}=5.0mA		-	-0.3	-	mV/deg
Dropout Voltage		V_D	1	Ta=25°C		-	2.0	-	V

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ELECTRICAL CHARACTERISTICS

Unless otherwise specified, V_{IN}=-15V, I_{OUT}=500mA, 0°C ≦ Tj ≦ 125°C
C_{IN}=1.0μF, C_{OUT}=1.0μF

CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Output Voltage		V_{OUT}	1	Tj=25°C		-8.7	-9.0	-9.3	V
Input Regulation		Reg·Line	1	Tj=25°C	-26V ≦ V_{IN} ≦ -11.5V I_{OUT}=100mA	-	11	82	mV
					-26V ≦ V_{IN} ≦ -11.5V I_{OUT}=500mA	-	48	162	mV
Load Regulation		Reg·Load	1	Tj=25°C	5mA ≦ I_{OUT} ≦ 1.5A	-	33	162	mV
					250mA ≦ I_{OUT} ≦ 750mA	-	11.0	82	mV
Output Voltage		V_{OUT}	1	-24V ≦ V_{IN} ≦ -11.5V 5mA ≦ I_{OUT} ≦ 1.0A		-8.6	-	-9.4	V
Quiescent Current		I_B	1	Tj=25°C		-	4.3	8.0	mA
Quiescent Current Charge	Line	ΔI_{BO}	1	-26.5 V ≦ V_{IN} ≦ -13V		-	-	1.0	mA
	Load	ΔI_{BI}	1	1.0A ≦ I_{OUT} ≦ 5mA		-	-	0.5	mA
Output Noise Voltage		V_{NO}	2	Ta=25°C, 10Hz ≦ f ≦ 100kHz		-	60	-	μV
Ripple Rejection		RR	3	f=120Hz, I_{OUT}=20mA		54	61	-	dB
Short Circuit Current Limit		I_{SC}	1	Tj=25°C		-	1.9	-	A
Average Temperature Coefficient Output Voltage		T_{CVO}	1	I_{OUT}=5.0mA		-	-0.4	-	mV/deg
Dropout Voltage		V_D	1	Ta=25°C		-	2.0	-	V

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ELECTRICAL CHARACTERISTICS

Unless otherwise specified, V_{IN}=-19V, I_{OUT}=500mA, 0°C≦Tj≦125°C
C_{IN}=1.0μF, C_{OUT}=1.0μF

CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Output Voltage		V_{OUT}	1	Tj=25°C		-11.5	-12	-12.5	V
Input Regulation		Reg·Line	1	Tj=25°C	-30V≦V_{IN}≦-14.5V I_{OUT}=100mA	-	13	120	mV
					-30V≦V_{IN}≦-14.5V I_{OUT}=500mA	-	55	240	mV
Load Regulation		Reg·Load	1	Tj=25°C	5mA≦I_{OUT}≦1.5A	-	46	240	mV
					250mA≦I_{OUT}≦750mA	-	17	120	mV
Output Voltage		V_{OUT}	1	-27V≦V_{IN}≦-14.5V 5mA≦I_{OUT}≦1.0A		-11.4	-	-1.26	V
Quiescent Current		I_B	1	Tj=25°C		-	4.3	8.0	mA
Quiescent Current Charge	Line	ΔI_{BO}	1	-30V≦V_{IN}≦-14.5V		-	-	1.0	mA
	Load	ΔI_{BI}	1	1.0A≦I_{OUT}≦5mA		-	-	0.5	mA
Output Noise Voltage		V_{NO}	2	Ta=25°C, 10Hz≦f≦100kHz		-	75	-	μV
Ripple Rejection		RR	3	f=120Hz, I_{OUT}=20mA		54	61	-	dB
Short Circuit Current Limit		I_{SC}	1	Tj=25°C		-	1.9	-	A
Average Temperature Coefficient Output Voltage		T_{CVO}	1	I_{OUT}=5.0mA		-	-0.6	-	mV/deg
Dropout Voltage		V_D	1	Ta=25°C		-	2.0	-	V

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ELECTRICAL CHARACTERISTICS

Unless otherwise specified, V_{IN}=-23V, I_{OUT}=500mA, 0°C ≦ Tj ≦ 125°C
C_{IN}=1.0μF, C_{OUT}=1.0μF

CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Output Voltage		V_{OUT}	1	Tj=25°C		-14.4	-15	-15.6	V
Input Regulation		Reg·Line	1	Tj=25°C	-30V ≦ V_{IN} ≦ -17.5V I_{OUT}=100mA	-	14	150	mV
					-30V ≦ V_{IN} ≦ -17.5V I_{OUT}=500mA	-	57	300	mV
Load Regulation		Reg·Load	1	Tj=25°C	5mA ≦ I_{OUT} ≦ 1.5A	-	68	300	mV
					250mA ≦ I_{OUT} ≦ 750mA	-	25	150	mV
Output Voltage		V_{OUT}	1	-30V ≦ V_{IN} ≦ -17.5V 5mA ≦ I_{OUT} ≦ 1.0A		-14.25	-	-15.75	V
Quiescent Current		I_B	1	Tj=25°C		-	4.3	8.0	mA
Quiescent Current Charge	Line	ΔI_{BO}	1	-30V ≦ V_{IN} ≦ -17.5V		-	-	1.0	mA
	Load	ΔI_{BI}	1	1.0A ≦ I_{OUT} ≦ 5mA		-	-	0.5	mA
Output Noise Voltage		V_{NO}	2	Ta=25°C, 10Hz ≦ f ≦ 100kHz		-	90	-	μV
Ripple Rejection		RR	3	f=120Hz, I_{OUT}=20mA		53	60	-	dB
Short Circuit Current Limit		I_{SC}	1	Tj=25°C		-	1.9	-	A
Average Temperature Coefficient Output Voltage		T_{CVO}	1	I_{OUT}=5.0mA		-	-0.7	-	mV/deg
Dropout Voltage		V_D	1	Ta=25°C		-	2.0	-	V

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