

# μA79M00 SERIES NEGATIVE-VOLTAGE REGULATORS

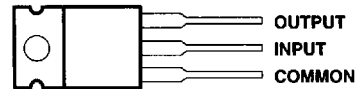
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- 3-Terminal Regulators
- Output Current Up to 500 mA
- No External Components
- High Power Dissipation Capability
- Internal Short-Circuit Current Limiting
- Output Transistor Safe-Area Compensation
- Direct Replacements for Fairchild μA79M00 Series

## description

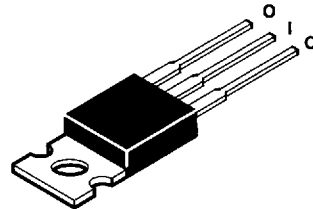
This series of fixed-negative-voltage monolithic integrated-circuit voltage regulators is designed to complement the μA78M00 series in a wide range of applications. These applications include on-card regulation for elimination of noise and distribution problems associated with single-point regulation. Each of these regulators can deliver up to 500 mA of output current. The internal current limiting and thermal shutdown features of these regulators make them essentially immune to overload. In addition to use as fixed-voltage regulators, these devices can be used with external components to obtain adjustable output voltages and currents and also as the power pass element in precision regulators.

**KC PACKAGE  
(TOP VIEW)**

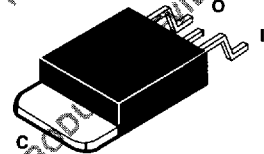


The input terminal is in electrical contact with the mounting base.

**TO-220AB**



**KTP PACKAGE  
(TOP VIEW)**



## AVAILABLE OPTIONS

T <sub>A</sub>	V <sub>O</sub> (nom) (V)	PACKAGED DEVICES		CHIP FORM (Y)
		HEAT-SINK MOUNTED (KC)	HEAT-SINK MOUNTED† (KTP)	
0°C to 125°C	-5	μA79M05CKC	μA79M05CKTP	μA79M05Y
	-6	μA79M06CKC	μA79M06CKTP	μA79M06Y
	-8	μA79M08CKC	μA79M08CKTP	μA79M08Y
	-12	μA79M12CKC	μA79M12CKTP	μA79M12Y
	-15	μA79M15CKC	μA79M15CKTP	μA79M15Y
	-20	μA79M20CKC	μA79M20CKTP	μA79M20Y
	-24	μA79M24CKC	μA79M24CKTP	μA79M24Y

† The KTP package is only available in tape and reel.

UNLESS OTHERWISE NOTED this document contains PRODUCTION DATA information current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

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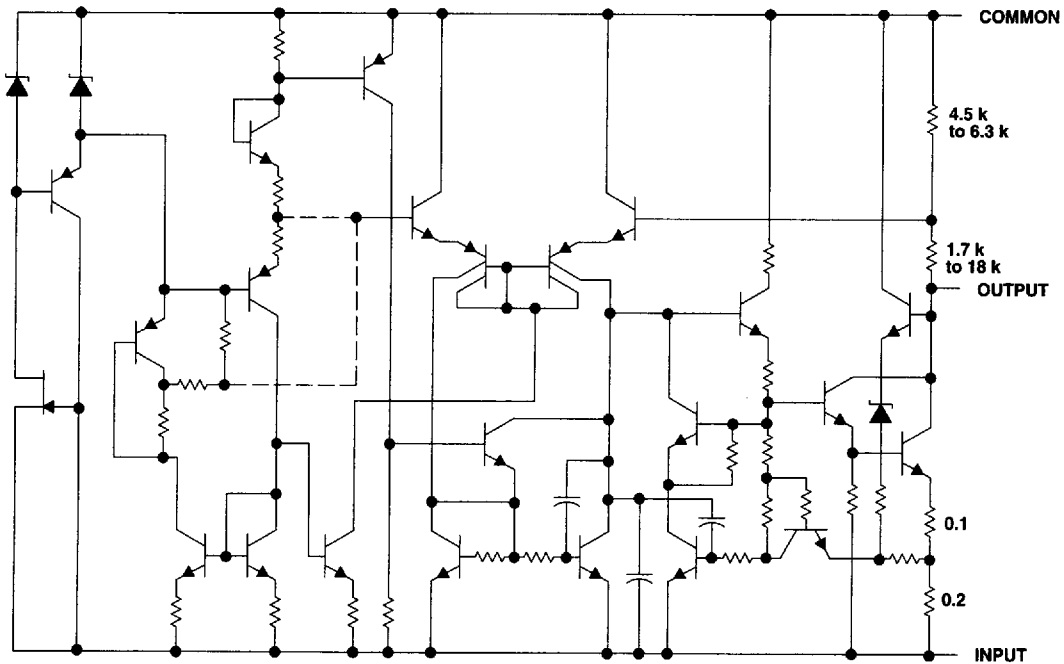
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# $\mu$ A79M00 SERIES NEGATIVE-VOLTAGE REGULATORS

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## schematic



Resistor values shown are nominal and in  $\Omega$ .

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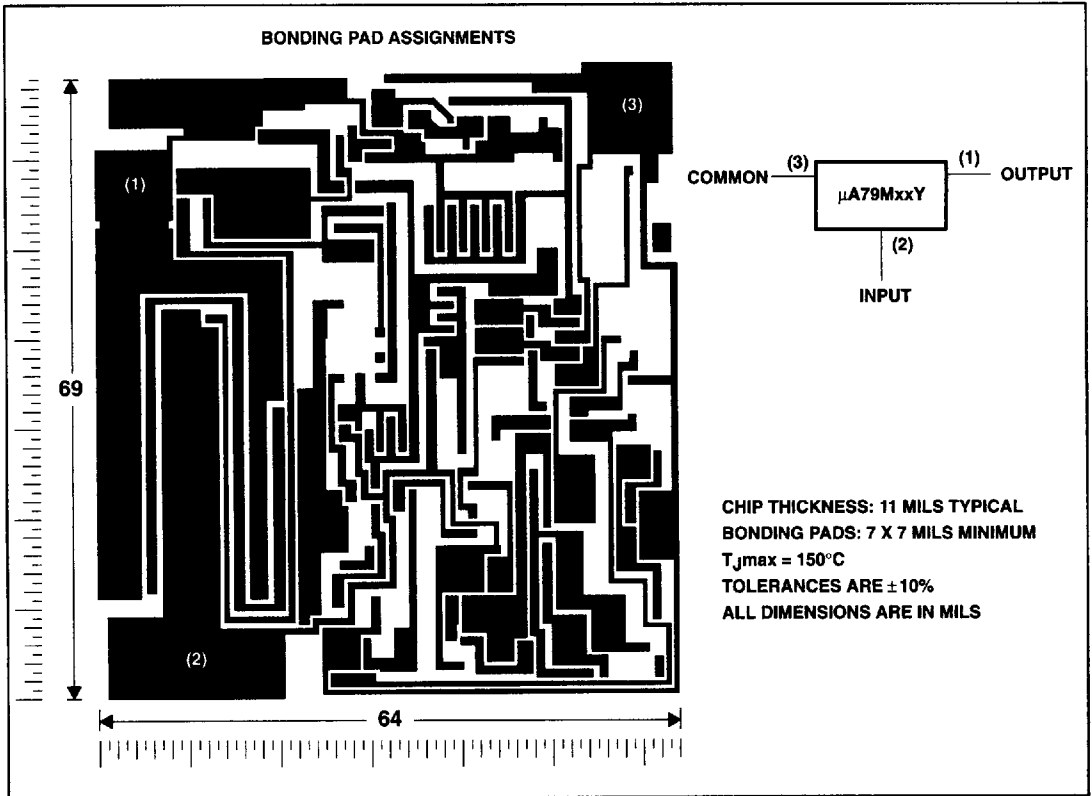
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# $\mu$ A79M00 SERIES NEGATIVE-VOLTAGE REGULATORS

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## $\mu$ A79MxxY chip information

This chip, when properly assembled, displays characteristics similar to the  $\mu$ A79MxxC. Thermal compression or ultrasonic bonding can be used on the doped aluminum bonding pads. The chip can be mounted with conductive epoxy or a gold-silicon preform.



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# μA79M00 SERIES NEGATIVE-VOLTAGE REGULATORS

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## absolute maximum ratings over operating temperature range (unless otherwise noted)†

		μA79MxxC	UNIT
Input voltage	μA79M20, μA79M24	-40	V
	All others	-35	
Continuous total power dissipation (see Note 1)		See Dissipation Rating Tables 1 and 2	
Operating free-air, $T_A$ , case, $T_C$ , or virtual junction, $T_J$ , temperature range		0 to 150	°C
Storage temperature range, $T_{stg}$		-65 to 150	°C
Lead temperature 1,6 mm (1/16 inch) from case for 10 seconds		260	°C

† Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

NOTE 1: To avoid exceeding the design maximum virtual junction temperature, these ratings should not be exceeded. Due to variations in individual device electrical characteristics and thermal resistance, the built-in thermal overload protection may be activated at power levels slightly above or below the rated dissipation.

DISSIPATION RATING TABLE 1—FREE-AIR TEMPERATURE

PACKAGE	$T_A \leq 25^\circ\text{C}$ POWER RATING	DERATING FACTOR ABOVE $T_A = 25^\circ\text{C}$	$T_A = 70^\circ\text{C}$ POWER RATING	$T_A = 125^\circ\text{C}$ POWER RATING
KC	2000 mW	16 mW/°C	1280 mW	400 mW
KTP†				

† The KTP package is product preview only and derating information is not yet available.

DISSIPATION RATING TABLE 2—CASE TEMPERATURE

PACKAGE	$T_C \leq 120^\circ\text{C}$ POWER RATING	DERATING FACTOR ABOVE $T_C = 120^\circ\text{C}$	$T_C = 125^\circ\text{C}$ POWER RATING
KC	7.5 W	250 mW/°C	6.25 W
KTP†			

† The KTP package is product preview only and derating information is not yet available.

## recommended operating conditions

		MIN	MAX	UNIT
Input voltage, $V_I$	μA79M05C	-7	-25	V
	μA79M06C	-8	-25	
	μA79M08C	-10.5	-25	
	μA79M12C	-14.5	30	
	μA79M15C	-17.5	-30	
	μA79M20C	-23	-35	
	μA79M24C	-27	-38	
Output current, $I_O$			500	mA
Operating virtual junction temperature, $T_J$		0	125	°C

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**electrical characteristics at specified virtual junction temperature,  $V_I = -10\text{ V}$ ,  $I_O = 350\text{ mA}$ ,  $T_J = 25^\circ\text{C}$  (unless otherwise noted)**

PARAMETER	TEST CONDITION†	μA79M05C			UNIT
		MIN	TYP	MAX	
Output voltage‡	$V_I = -7\text{ V to } -25\text{ V}$ , $I_O = 5\text{ mA to } 350\text{ mA}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$	-4.8	-5	-5.2	V
		-4.75		-5.25	
Input voltage regulation	$V_I = -7\text{ V to } -25\text{ V}$		7	50	mV
	$V_I = -8\text{ V to } -18\text{ V}$		3	30	
Ripple rejection	$V_I = -8\text{ V to } -18\text{ V}$ , $f = 120\text{ Hz}$	$I_O = 100\text{ mA}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$	50		dB
			$I_O = 300\text{ mA}$	54	
Output voltage regulation	$I_O = 5\text{ mA to } 500\text{ mA}$		75	100	mV
	$I_O = 5\text{ mA to } 350\text{ mA}$		50		
Temperature coefficient of output voltage	$I_O = 5\text{ mA}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$		-0.4		mV/°C
Output noise voltage	$f = 10\text{ Hz to } 100\text{ kHz}$		125		μV
Dropout voltage			1.1		V
Bias current			1	2	mA
Bias current change	$V_I = -8\text{ V to } -18\text{ V}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$			0.4	mA
	$I_O = 5\text{ mA to } 350\text{ mA}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$			0.4	
Short-circuit output current	$V_I = -30\text{ V}$		140		mA
Peak output current			0.65		A

† Pulse-testing techniques maintain  $T_J$  as close to  $T_A$  as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 2-μF capacitor across the input and a 1-μF capacitor across the output.

‡ This specification applies only for dc power dissipation permitted by absolute maximum ratings.

**electrical characteristics at specified virtual junction temperature,  $V_I = -11\text{ V}$ ,  $I_O = 350\text{ mA}$ ,  $T_J = 25^\circ\text{C}$  (unless otherwise noted)**

PARAMETER	TEST CONDITION†	μA79M06C			UNIT
		MIN	TYP	MAX	
Output voltage‡	$V_I = -8\text{ V to } -25\text{ V}$ , $I_O = 5\text{ mA to } 350\text{ mA}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$	-5.75	-6	-6.25	V
		-5.7		-6.3	
Input voltage regulation	$V_I = -8\text{ V to } -25\text{ V}$		7	60	mV
	$V_I = -9\text{ V to } -19\text{ V}$		3	40	
Ripple rejection	$V_I = -9\text{ V to } -19\text{ V}$ , $f = 120\text{ Hz}$	$I_O = 100\text{ mA}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$	50		dB
			$I_O = 300\text{ mA}$	54	
Output voltage regulation	$I_O = 5\text{ mA to } 500\text{ mA}$		80	120	mV
	$I_O = 5\text{ mA to } 350\text{ mA}$		55		
Temperature coefficient of output voltage	$I_O = 5\text{ mA}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$		-0.4		mV/°C
Output noise voltage	$f = 10\text{ Hz to } 100\text{ kHz}$		150		μV
Dropout voltage			1.1		V
Bias current			1	2	mA
Bias current change	$V_I = -9\text{ V to } -25\text{ V}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$			0.4	mA
	$I_O = 5\text{ mA to } 350\text{ mA}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$			0.4	
Short-circuit output current	$V_I = -30\text{ V}$		140		mA
Peak output current			0.65		A

† Pulse-testing techniques maintain  $T_J$  as close to  $T_A$  as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 2-μF capacitor across the input and a 1-μF capacitor across the output.

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electrical characteristics at specified virtual junction temperature,  $V_I = -19\text{ V}$ ,  $I_O = 350\text{ mA}$ ,  $T_J = 25^\circ\text{C}$   
(unless otherwise noted)

PARAMETER	TEST CONDITIONS†	μA79M08C			UNIT
		MIN	TYP	MAX	
Output voltage‡		-7.7	-8	-8.3	V
	$V_I = -10.5\text{ V to }-25\text{ V}$ , $I_O = 5\text{ mA to }350\text{ mA}$ , $T_J = 0^\circ\text{C to }125^\circ\text{C}$	-7.6		-8.4	
Input voltage regulation	$V_I = -10.5\text{ V to }-25\text{ V}$		8	80	mV
	$V_I = -11\text{ V to }-21\text{ V}$		4	50	
Ripple rejection	$V_I = -11.5\text{ V to }-21.5\text{ V}$ , $f = 120\text{ Hz}$	$I_O = 100\text{ mA}$ , $T_J = 0^\circ\text{C to }125^\circ\text{C}$	50		dB
		$I_O = 300\text{ mA}$	54	59	
Output voltage regulation	$I_O = 5\text{ mA to }500\text{ mA}$		90	160	mV
	$I_O = 5\text{ mA to }350\text{ mA}$		60		
Temperature coefficient of output voltage	$I_O = 5\text{ mA}$ , $T_J = 0^\circ\text{C to }125^\circ\text{C}$		-0.6		mV/°C
Output noise voltage	$f = 10\text{ Hz to }100\text{ kHz}$		200		μV
Dropout voltage	$I_O = 5\text{ mA}$		1.1		V
Bias current			1	2	mA
Bias current change	$V_I = -10.5\text{ V to }-25\text{ V}$ , $T_J = 0^\circ\text{C to }125^\circ\text{C}$			0.4	mA
	$I_O = 5\text{ mA to }350\text{ mA}$ , $T_J = 0^\circ\text{C to }125^\circ\text{C}$			0.4	
Short-circuit output current	$V_I = -30\text{ V}$		140		mA
Peak output current			0.65		A

† Pulse-testing techniques maintain  $T_J$  as close to  $T_A$  as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 2-μF capacitor across the input and a 1-μF capacitor across the output.

‡ This specification applies only for dc power dissipation permitted by absolute maximum ratings.

electrical characteristics at specified virtual junction temperature,  $V_I = -19\text{ V}$ ,  $I_O = 350\text{ mA}$ ,  $T_J = 25^\circ\text{C}$   
(unless otherwise noted)

PARAMETER	TEST CONDITIONS†	μA79M12C			UNIT
		MIN	TYP	MAX	
Output voltage‡		-11.5	-12	-12.5	V
	$V_I = -14.5\text{ V to }-30\text{ V}$ , $I_O = 5\text{ mA to }350\text{ mA}$ , $T_J = 0^\circ\text{C to }125^\circ\text{C}$	-11.4		-12.6	
Input voltage regulation	$V_I = -14.5\text{ V to }-30\text{ V}$		9	80	mV
	$V_I = -15\text{ V to }-25\text{ V}$		5	50	
Ripple rejection	$V_I = -15\text{ V to }-25\text{ V}$ , $f = 120\text{ Hz}$	$I_O = 100\text{ mA}$ , $T_J = 0^\circ\text{C to }125^\circ\text{C}$	50		dB
		$I_O = 300\text{ mA}$	54	60	
Output voltage regulation	$I_O = 5\text{ mA to }500\text{ mA}$		65	240	mV
	$I_O = 5\text{ mA to }350\text{ mA}$		45		
Temperature coefficient of output voltage	$I_O = 5\text{ mA}$ , $T_J = 0^\circ\text{C to }125^\circ\text{C}$		-0.8		mV/°C
Output noise voltage	$f = 10\text{ Hz to }100\text{ kHz}$		300		μV
Dropout voltage			1.1		V
Bias current			1.5	3	mA
Bias current change	$V_I = -14.5\text{ V to }-30\text{ V}$ , $T_J = 0^\circ\text{C to }125^\circ\text{C}$			0.4	mA
	$I_O = 5\text{ mA to }350\text{ mA}$ , $T_J = 0^\circ\text{C to }125^\circ\text{C}$			0.4	
Short-circuit output current	$V_I = -30\text{ V}$		140		mA
Peak output current			0.65		A

† Pulse-testing techniques maintain  $T_J$  as close to  $T_A$  as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 2-μF capacitor across the input and a 1-μF capacitor across the output.

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**electrical characteristics at specified virtual junction temperature,  $V_I = -23$  V,  $I_O = 350$  mA,  $T_J = 25^\circ$  C (unless otherwise noted)**

PARAMETER	TEST CONDITIONS†	μA79M15C			UNIT
		MIN	TYP	MAX	
Output voltage‡		-14.4	-15	-15.6	V
	$V_I = -17.5$ V to $-30$ V, $I_O = 5$ mA to 350 mA, $T_J = 0^\circ$ C to $125^\circ$ C	-14.25		-15.75	
Input voltage regulation	$V_I = -17.5$ V to $-30$ V		9	80	mV
	$V_I = -18$ V to $-28$ V		7	50	
Ripple rejection	$V_I = -18.5$ V to $-28.5$ V, $f = 120$ Hz	$I_O = 100$ mA, $T_J = 0^\circ$ C to $125^\circ$ C	50		dB
		$I_O = 300$ mA	54	59	
Output voltage regulation	$I_O = 5$ mA to 500 mA		65	240	mV
	$I_O = 5$ mA to 350 mA		45		
Temperature coefficient of output voltage	$I_O = 5$ mA, $T_J = 0^\circ$ C to $125^\circ$ C		-1		mV/°C
Output noise voltage	$f = 10$ Hz to 100 kHz		375		μV
Dropout voltage	$I_O = 5$ mA		1.1		V
Bias current			1.5	3	mA
Bias current change	$V_I = -17.5$ V to $-30$ V, $T_J = 0^\circ$ C to $125^\circ$ C			0.4	mA
	$I_O = 5$ mA to 350 mA, $T_J = 0^\circ$ C to $125^\circ$ C			0.4	
Short-circuit output current	$V_I = -30$ V		140		mA
Peak output current			0.65		A

† Pulse-testing techniques maintain  $T_J$  as close to  $T_A$  as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 2-μF capacitor across the input and a 1-μF capacitor across the output.

‡ This specification applies only for dc power dissipation permitted by absolute maximum ratings.

**electrical characteristics at specified virtual junction temperature,  $V_I = -29$  V,  $I_O = 350$  mA,  $T_J = 25^\circ$  C (unless otherwise noted)**

PARAMETER	TEST CONDITIONS†	μA79M20C			UNIT
		MIN	TYP	MAX	
Output voltage‡		-19.2	-20	-20.8	V
	$V_I = -23$ V to $-35$ V, $I_O = 5$ mA to 350 mA, $T_J = 0^\circ$ C to $125^\circ$ C	-19		-21	
Input voltage regulation	$V_I = -23$ V to $-35$ V		12	80	mV
	$V_I = -24$ V to $-34$ V		10	70	
Ripple rejection	$V_I = -24$ V to $-34$ V, $f = 120$ Hz	$I_O = 100$ mA, $T_J = 0^\circ$ C to $125^\circ$ C	50		dB
		$I_O = 300$ mA	54	58	
Output voltage regulation	$I_O = 5$ mA to 500 mA		75	300	mV
	$I_O = 5$ mA to 350 mA		50		
Temperature coefficient of output voltage	$I_O = 5$ mA, $T_J = 0^\circ$ C to $125^\circ$ C		-1		mV/°C
Output noise voltage	$f = 10$ Hz to 100 kHz		500		μV
Dropout voltage			1.1		V
Bias current			1.5	3.5	mA
Bias current change	$V_I = -23$ V to $-35$ V, $T_J = 0^\circ$ C to $125^\circ$ C			0.4	mA
	$I_O = 5$ mA to 350 mA, $T_J = 0^\circ$ C to $125^\circ$ C			0.4	
Short-circuit output current	$V_I = -30$ V		140		mA
Peak output current			0.65		A

† Pulse-testing techniques maintain  $T_J$  as close to  $T_A$  as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 2-μF capacitor across the input and a 1-μF capacitor across the output.

‡ This specification applies only for dc power dissipation permitted by absolute maximum ratings.

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electrical characteristics at specified virtual junction temperature,  $V_I = -33\text{ V}$ ,  $I_O = 350\text{ mA}$ ,  $T_J = 25^\circ\text{C}$   
(unless otherwise noted)

PARAMETER	TEST CONDITIONS†	μA79M24C			UNIT
		MIN	TYP	MAX	
Output voltage‡	$V_I = -27\text{ V to } -38\text{ V}$ , $I_O = 5\text{ mA to } 350\text{ mA}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$	-23	-24	-25	V
		-22.8		-25.2	
Input voltage regulation	$V_I = -27\text{ V to } -38\text{ V}$		12	80	mV
	$V_I = -28\text{ V to } -38\text{ V}$		12	70	
Ripple rejection	$V_I = -28\text{ V to } -38\text{ V}$ , $f = 120\text{ Hz}$		50		dB
	$I_O = 100\text{ mA}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$		54	58	
Output voltage regulation	$I_O = 5\text{ mA to } 500\text{ mA}$		75	300	mV
	$I_O = 5\text{ mA to } 350\text{ mA}$		50		
Temperature coefficient of output voltage	$I_O = 5\text{ mA}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$		-1		mV/°C
Output noise voltage	$f = 10\text{ Hz to } 100\text{ kHz}$		600		μV
Dropout voltage			1.1		V
Bias current			1.5	3.5	mA
Bias current change	$V_I = -27\text{ V to } -38\text{ V}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$			0.4	mA
	$I_O = 5\text{ mA to } 350\text{ mA}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$			0.4	
Short-circuit output current	$V_I = -30\text{ V}$		140		mA
Peak output current			0.65		A

† Pulse-testing techniques maintain  $T_J$  as close to  $T_A$  as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 2-μF capacitor across the input and a 1-μF capacitor across the output.

‡ This specification applies only for dc power dissipation permitted by absolute maximum ratings.

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**electrical characteristics at specified virtual junction temperature,  $V_I = -10\text{ V}$ ,  $I_O = 350\text{ mA}$ ,  $T_J = 25^\circ\text{C}$  (unless otherwise noted)**

PARAMETER	TEST CONDITIONS†	μA79M05Y			UNIT
		MIN	TYP	MAX	
Output voltage‡			-5		V
Input voltage regulation	$V_I = -7\text{ V to }-25\text{ V}$		7		mV
	$V_I = -8\text{ V to }-18\text{ V}$		3		
Ripple rejection	$V_I = -8\text{ V to }-18\text{ V}$ , $I_O = 300\text{ mA}$ , $f = 120\text{ Hz}$		60		dB
Output voltage regulation	$I_O = 5\text{ mA to }500\text{ mA}$		75		mV
	$I_O = 5\text{ mA to }350\text{ mA}$		50		
Temperature coefficient of output voltage	$I_O = 5\text{ mA}$		-0.4		mV/°C
Output noise voltage	$f = 10\text{ Hz to }100\text{ kHz}$		125		μV
Dropout voltage			1.1		V
Bias current			1		mA
Short-circuit output current	$V_I = -30\text{ V}$		140		mA
Peak output current			0.65		A

† Pulse-testing techniques maintain  $T_J$  as close to  $T_A$  as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 2-μF capacitor across the input and a 1-μF capacitor across the output.

‡ This specification applies only for dc power dissipation permitted by absolute maximum ratings.

**electrical characteristics at specified virtual junction temperature,  $V_I = -11\text{ V}$ ,  $I_O = 350\text{ mA}$ ,  $T_J = 25^\circ\text{C}$  (unless otherwise noted)**

PARAMETER	TEST CONDITIONS†	μA79M06Y			UNIT
		MIN	TYP	MAX	
Output voltage‡			-6		V
Input voltage regulation	$V_I = -8\text{ V to }-25\text{ V}$		7		mV
	$V_I = -9\text{ V to }-19\text{ V}$		3		
Ripple rejection	$V_I = -9\text{ V to }-19\text{ V}$ , $I_O = 300\text{ mA}$ , $f = 120\text{ Hz}$		60		dB
Output voltage regulation	$I_O = 5\text{ mA to }500\text{ mA}$		80		mV
	$I_O = 5\text{ mA to }350\text{ mA}$		55		
Temperature coefficient of output voltage	$I_O = 5\text{ mA}$		-0.4		mV/°C
Output noise voltage	$f = 10\text{ Hz to }100\text{ kHz}$		150		μV
Dropout voltage			1.1		V
Bias current			1		mA
Short-circuit output current	$V_I = -30\text{ V}$		140		mA
Peak output current			0.65		A

† Pulse-testing techniques maintain  $T_J$  as close to  $T_A$  as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 2-μF capacitor across the input and a 1-μF capacitor across the output.

‡ This specification applies only for dc power dissipation permitted by absolute maximum ratings.

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 **TEXAS  
INSTRUMENTS**

POST OFFICE BOX 655303 • DALLAS, TEXAS 75265

# μA79M00 SERIES NEGATIVE-VOLTAGE REGULATORS

SLVS060A – JUNE 1976 – REVISED AUGUST 1995

electrical characteristics at specified virtual junction temperature,  $V_I = -19\text{ V}$ ,  $I_O = 350\text{ mA}$ ,  $T_J = 25^\circ\text{C}$   
(unless otherwise noted)

PARAMETER	TEST CONDITION†	μA79M08Y			UNIT
		MIN	TYP	MAX	
Output voltage‡			-8		V
Input voltage regulation	$V_I = -10.5\text{ V to } -25\text{ V}$		8		mV
	$V_I = -11\text{ V to } -21\text{ V}$		4		
Ripple rejection	$V_I = -11.5\text{ V to } -21.5\text{ V}$ , $I_O = 300\text{ mA}$ , $f = 120\text{ Hz}$		59		dB
Output voltage regulation	$I_O = 5\text{ mA to } 500\text{ mA}$		90		mV
	$I_O = 5\text{ mA to } 350\text{ mA}$		60		
Temperature coefficient of output voltage	$I_O = 5\text{ mA}$		-0.6		mV/°C
Output noise voltage	$f = 10\text{ Hz to } 100\text{ kHz}$		200		μV
Dropout voltage	$I_O = 5\text{ mA}$		1.1		V
Bias current			1		mA
Short-circuit output current	$V_I = -30\text{ V}$		140		mA
Peak output current			0.65		A

† Pulse-testing techniques maintain  $T_J$  as close to  $T_A$  as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 2-μF capacitor across the input and a 1-μF capacitor across the output.

‡ This specification applies only for dc power dissipation permitted by absolute maximum ratings.

electrical characteristics at specified virtual junction temperature,  $V_I = -19\text{ V}$ ,  $I_O = 350\text{ mA}$ ,  $T_J = 25^\circ\text{C}$   
(unless otherwise noted)

PARAMETER	TEST CONDITION†	μA79M12Y			UNIT
		MIN	TYP	MAX	
Output voltage‡			-12		V
Input voltage regulation	$V_I = -14.5\text{ V to } -30\text{ V}$		9		mV
	$V_I = -15\text{ V to } -25\text{ V}$		5		
Ripple rejection	$V_I = -15\text{ V to } -25\text{ V}$ , $I_O = 300\text{ mA}$ , $f = 120\text{ Hz}$		60		dB
Output voltage regulation	$I_O = 5\text{ mA to } 500\text{ mA}$		65		mV
	$I_O = 5\text{ mA to } 350\text{ mA}$		45		
Temperature coefficient of output voltage	$I_O = 5\text{ mA}$		-0.8		mV/°C
Output noise voltage	$f = 10\text{ Hz to } 100\text{ kHz}$		300		μV
Dropout voltage			1.1		V
Bias current			1.5		mA
Short-circuit output current	$V_I = -30\text{ V}$		140		mA
Peak output current			0.65		A

† Pulse-testing techniques maintain  $T_J$  as close to  $T_A$  as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 2-μF capacitor across the input and a 1-μF capacitor across the output.

‡ This specification applies only for dc power dissipation permitted by absolute maximum ratings.

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# μA79M00 SERIES NEGATIVE-VOLTAGE REGULATORS

SLVS060A – JUNE 1976 – REVISED AUGUST 1995

**electrical characteristics at specified virtual junction temperature,  $V_I = -23$  V,  $I_O = 350$  mA,  $T_J = 25^\circ\text{C}$  (unless otherwise noted)**

PARAMETER	TEST CONDITIONS†	μA79M15Y			UNIT
		MIN	TYP	MAX	
Output voltage‡			-15		V
Input voltage regulation	$V_I = -17.5$ V to $-30$ V		9		mV
	$V_I = -18$ V to $-28$ V		7		
Ripple rejection	$V_I = -18.5$ V to $-28.5$ V, $I_O = 300$ mA, $f = 120$ Hz		59		dB
Output voltage regulation	$I_O = 5$ mA to $500$ mA		65		mV
	$I_O = 5$ mA to $350$ mA		45		
Temperature coefficient of output voltage	$I_O = 5$ mA		-1		mV/°C
Output noise voltage	$f = 10$ Hz to $100$ kHz		375		μV
Dropout voltage	$I_O = 5$ mA		1.1		V
Bias current			1.5		mA
Short-circuit output current	$V_I = -30$ V		140		mA
Peak output current			0.65		A

† Pulse-testing techniques maintain  $T_J$  as close to  $T_A$  as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 2-μF capacitor across the input and a 1-μF capacitor across the output.

‡ This specification applies only for dc power dissipation permitted by absolute maximum ratings.

**electrical characteristics at specified virtual junction temperature,  $V_I = -29$  V,  $I_O = 350$  mA,  $T_J = 25^\circ\text{C}$  (unless otherwise noted)**

PARAMETER	TEST CONDITIONS†	μA79M20Y			UNIT
		MIN	TYP	MAX	
Output voltage‡			-20		V
Input voltage regulation	$V_I = -23$ V to $-35$ V		12		mV
	$V_I = -24$ V to $-34$ V		10		
Ripple rejection	$V_I = -24$ V to $-34$ V, $I_O = 300$ mA, $f = 120$ Hz		58		dB
Output voltage regulation	$I_O = 5$ mA to $500$ mA		75		mV
	$I_O = 5$ mA to $350$ mA		50		
Temperature coefficient of output voltage	$I_O = 5$ mA		-1		mV/°C
Output noise voltage	$f = 10$ Hz to $100$ kHz		500		μV
Dropout voltage			1.1		V
Bias current			1.5		mA
Short-circuit output current	$V_I = -30$ V		140		mA
Peak output current			0.65		A

† Pulse-testing techniques maintain  $T_J$  as close to  $T_A$  as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 2-μF capacitor across the input and a 1-μF capacitor across the output.

‡ This specification applies only for dc power dissipation permitted by absolute maximum ratings.

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# μA79M00 SERIES NEGATIVE-VOLTAGE REGULATORS

SLVS060A – JUNE 1976 – REVISED AUGUST 1995

electrical characteristics at specified virtual junction temperature,  $V_I = -33\text{ V}$ ,  $I_O = 350\text{ mA}$ ,  $T_J = 25^\circ\text{C}$   
(unless otherwise noted)

PARAMETER	TEST CONDITIONS†	μA79M24Y			UNIT
		MIN	TYP	MAX	
Output voltage‡			-24		V
Input voltage regulation	$V_I = -27\text{ V to } -38\text{ V}$		12		mV
	$V_I = -28\text{ V to } -38\text{ V}$		12		
Ripple rejection	$V_I = -28\text{ V to } -38\text{ V}$ , $I_O = 300\text{ mA}$ , $f = 120\text{ Hz}$		58		dB
Output voltage regulation	$I_O = 5\text{ mA to } 500\text{ mA}$		75		mV
	$I_O = 5\text{ mA to } 350\text{ mA}$		50		
Temperature coefficient of output voltage	$I_O = 5\text{ mA}$ , $T_J = 0^\circ\text{C to } 125^\circ\text{C}$		-1		mV/°C
Output noise voltage	$f = 10\text{ Hz to } 100\text{ kHz}$		600		μV
Dropout voltage			1.1		V
Bias current			1.5		mA
Short-circuit output current	$V_I = -30\text{ V}$		140		mA
Peak output current			0.65		A

† Pulse-testing techniques maintain  $T_J$  as close to  $T_A$  as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 2-μF capacitor across the input and a 1-μF capacitor across the output.

‡ This specification applies only for dc power dissipation permitted by absolute maximum ratings.

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