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AMC79L05

100mA / 3-TERMINAL NEGATIVE VOLTAGE REGULATOR

DESCRIPTION

The AMC79L05 is a 3-terminal fixed negative-voltage designed for a wide range of applications. This regulator can provide local on card regulation, eliminating the distribution problems associated with single point regulation. In addition, it can be used with power-pass elements to make high-current voltage regulators with 100mA output current.

Protection features such as thermal shutdown and current limiting have been designed internally which will protect the device from damage in case of overload or overheating.

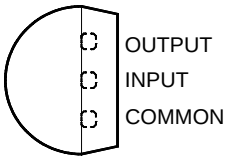
FEATURES

- **±5% tolerance of output voltage**
- **Wide input range**
- **Internal thermal overload protection**
- **Output current ≥ 100mA**
- **No External Components**
- **Short circuit protection**
- **Available in 3L plastic TO-92 and plastic 8 pin S.O.I.C.**
- **Identical pin assignment to earlier 79L05 series.**

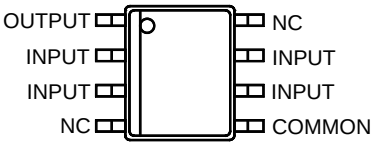
APPLICATIONS

- Logic Systems
- Computer Add-On Cards
- Modem Cards
- Power Suppliers

PACKAGE PIN OUT



3-Pin Plastic TO-92
(Top View)



8-Pin S.O.I.C
Surface Mount
(Top View)

ORDER INFORMATION

T_A (°C)	**LP** Plastic TO-92 3-pin	**DM** Plastic SO-8 8-pin
0 to 70	**AMC79L05LP**	**AMC79L05DM**
0 to 70	**AMC79L05LP(Lead Free)**	**AMC79L05DM(Lead Free)**

Note: 1.All surface-mount and TO-92 packages are available in Tape & Reel. Append the letter "T" to part number (i.e. AMC79L05LPT or AMC79L05DMT).
2.For TO-92 in Tape & Box (without reel), add suffix "TB" (i.e. AMC79L05LPTB).
3.The letter "F" is marked for Lead Free process.

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ABSOLUTE MAXIMUM RATINGS (Note 1)	
Input Voltage	-30V
Operating free-air temperature range, T_A	0^oC to 70^oC
Storage temperature range	-65^oC to 150^oC
Lead temperature (soldiering, 10 seconds)	260^oC

Note 1: Exceeding these ratings could cause damage to the device. All voltages are with respect to Ground. Currents are positive into, negative out of the specified terminal.

THERMAL DATA	
LP PACKAGE:	
Thermal Resistance-Junction to Ambient, θ_{JA}	$156^oC/W$
DM PACKAGE:	
Thermal Resistance-Junction to Ambient, θ_{JA}	$165^oC/W$

Junction Temperature Calculation: $T_J = T_A + (P_D \times \theta_{JA})$.
The θ_{JA} numbers are guidelines for the thermal performance of the device/pc-board system.
All of the above assume no ambient airflow.

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RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Recommended Operating Conditions			Units
		Min.	Typ.	Max.	
Input Voltage	V_I	-7		-20	V
Output Current	I_{OUT}			100	mA
Operating Virtual Junction Temperature	T_J	0		125	^oC

ELECTRICAL CHARACTERISTICS

Unless otherwise specified, these specifications in **bold type** apply over the operating temperature range of $0^oC \le T_J \le +150^oC$, V_{IN} = -10V,I_{OUT} = 40mA,C_{IN} = 0.33μF, C_{OUT}= 0.1μF, and are for DC characteristics only. (Low duty cycle pulse testing techniques are used which maintains junction and case temperatures equal to the ambient temperature.)

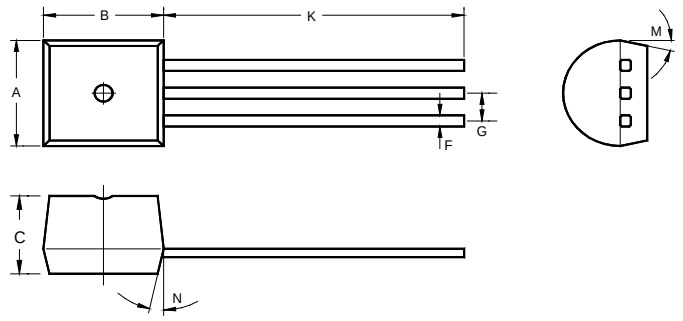
Parameter	Symbol	Test Conditions	AMC79L05			Units
			Min.	Typ.	Max.	
Output Voltage	V_{OUT}	$T_J = 25^oC$	-4.8	-5.0	-5.2	V
		$-7V \le V_{IN} \le -20V$, $1mA \le I_{OUT} \le 40mA$	**-4.75**		**-5.25**	
		$1mA \le I_{OUT} \le 70mA$	**-4.75**		**-5.25**	
Line Regulation	$\triangle V_{OI}$	$-7V \le V_{IN} \le -20V, T_J = 25^oC$		15	150	mV
		$-8V \le V_{IN} \le -20V, T_J = 25^oC$			100	
Load Regulation	$\triangle V_{OL}$	$1mA \le I_{OUT} \le 100mA$, $T_J = 25^oC$		20	60	mV
		$1mA \le I_{OUT} \le 40mA$, $T_J = 25^oC$		10	30	
Peak Output Current	I_{PEAK}	$T_J = 25^oC$		140		mA
Dropout Voltage		$T_J = 25^oC$		1.7		V
Quiescent Current	I_Q	$T_J = 25^oC$			6.6	mA
		$T_J = 125^oC$			6.0	
Quiescent Current Change	$\triangle I_Q$	$-8V \le V_{IN} \le -20V$			**1.5**	mA
		$1mA \le I_{OUT} \le 40mA$			**0.1**	
Ripple Rejection (note 2)	R_R	f =120Hz, $-8V \le V_{IN} \le -18V$, $T_J = 25^oC$	41	49		dB
Output Noise Voltage (note 2)	$V_{O\,RMS}$	$10Hz \le f \le 100KHz$, $T_J = 25^oC$		40		μV

Note 2: These parameters, although guaranteed, are not 100% tested in production prior to shipment

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PACKAGE

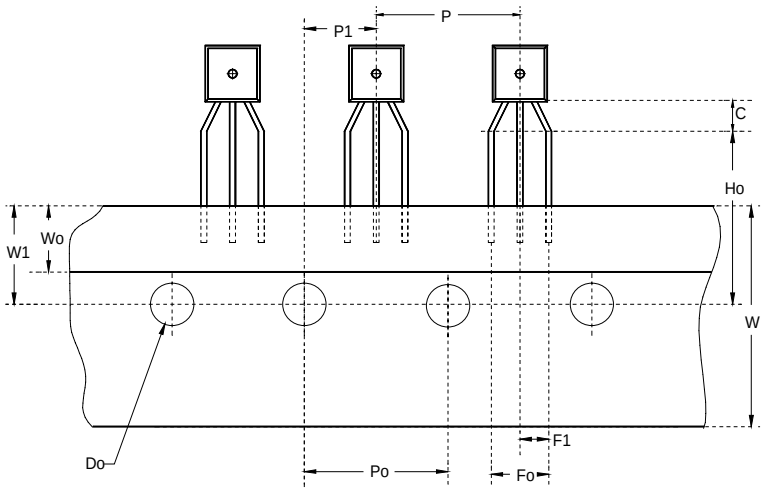
3-Pin Plastic TO-92



	INCHES			MILLIMETERS		
	MIN	TYP	MAX	MIN	TYP	MAX
A	0.175	0.180	0.205	4.45	4.57	5.21
B	0.170	0.180	0.210	4.32	4.57	5.33
C	0.125	0.142	0.165	3.18	3.62	4.19
F	-	0.015	-	-	0.38	-
G	-	0.050	-	-	1.27	-
J	-	0.150	-	-	3.81	-
K	0.500	0.580	-	12.70	14.73	-
M	-	5º	-	-	5º	-
N	-	5º	-	-	5º	-

Note: For TO-92 in tape & reel, refer to TO-92 package and carrier dimension data for lead dimensions.

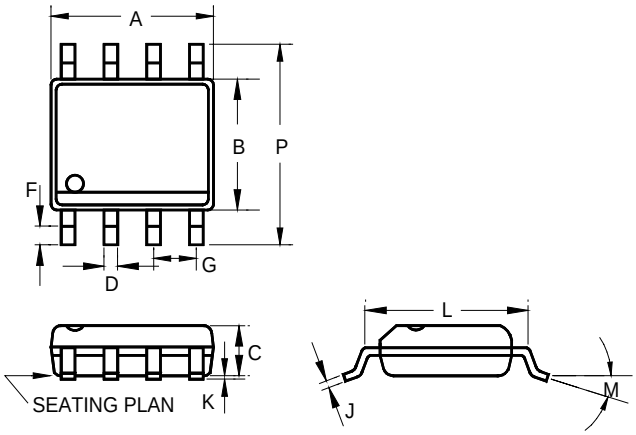
3-Pin Plastic TO-92 Package (Taped and Reeled) and Carrier Dimensions



	INCHES			MILLIMETERS		
	MIN	TYP	MAX	MIN	TYP	MAX
C	0.079	-	-	2.00	-	-
P	0.480	0.500	0.520	12.2	12.7	13.2
Po	0.488	0.500	0.512	12.4	12.7	13.0
Do	0.150	0.157	0.165	3.8	4.0	4.2
P1	0.230	0.250	0.256	5.85	6.35	6.85
Fo	0.165	0.197	0.220	4.2	5.0	5.6
W	0.669	0.709	0.748	17.0	18.0	19.0
Ho	0.610	0.630	0.649	15.5	16.0	16.5
Wo	0.224	0.236	0.248	5.7	6.0	6.3
W1	0.335	0.354	0.374	8.5	9.0	9.5

Note: For 3L TO92, 2,000 units per Reel

8-Pin Plastic S.O.I.C.



	INCHES			MILLIMETERS		
	MIN	TYP	MAX	MIN	TYP	MAX
A	0.183	-	0.202	4.65	-	5.13
B	0.144	-	0.163	3.66	-	4.14
C	0.068	-	0.074	1.73	-	1.88
D	0.010	-	0.020	0.25	-	0.51
F	0.015	-	0.035	0.38	-	0.89
G	0.050 BSC			1.27 BSC		
J	0.007	-	0.010	0.19	-	0.25
K	0.005	-	0.010	0.13	-	0.25
L	0.189	-	0.205	4.80	-	5.21
M	-	-	8º	-	-	8º
P	0.228	-	0.244	5.79	-	6.20

Note: For 8 pin S.O.I.C., 100 units per tube

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