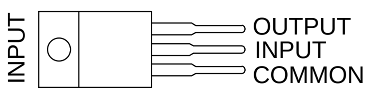
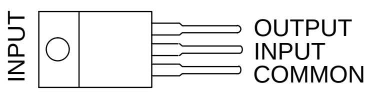
- **3-Terminal Regulators**
- **Output Current Up To 500 mA**
- **No External Components**
- **High Power-Dissipation Capability**
- **Internal Short-Circuit Current Limiting**
- **Output Transistor Safe-Area Compensation**

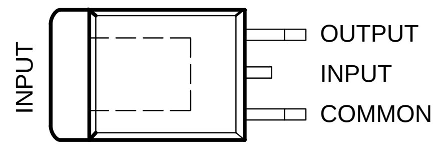
µA79M05 . . . KC (TO-220) PACKAGE
(TOP VIEW)



µA79M05 . . . KCS (TO-220) PACKAGE
(TOP VIEW)



µA79M05, µA79M08 . . . KTP PACKAGE
(TOP VIEW)



description/ordering information

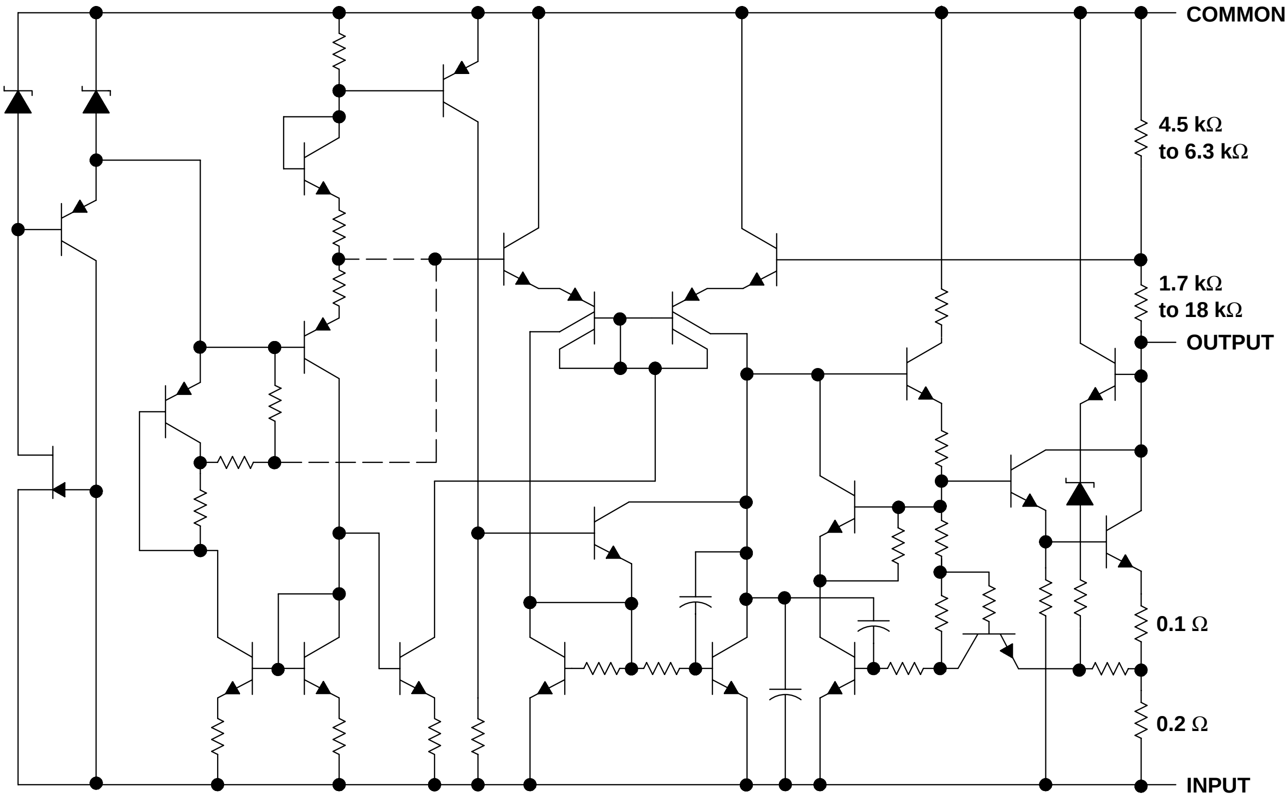
This series of fixed-negative-voltage integrated-circuit voltage regulators is designed to complement the µA78M00 series in a wide range of applications. These applications include on-card regulation for elimination of noise and distribution problems associated with single-point regulation. Each of these regulators delivers up to 500 mA of output current. The internal current-limiting and thermal-shutdown features of these regulators essentially make them 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.

ORDERING INFORMATION

T_J	V_O(NOM) (V)	PACKAGE†		ORDERABLE PART NUMBER	TOP-SIDE MARKING
0°C to 125°C	–5	Power Flex (KTP)	Reel of 3000	µA79M05CKTPR	µA79M05C
		TO-220 (KC)	Tube of 50	µA79M05CKC	µA79M05C
		TO-220, short shoulder (KCS)	Tube of 20	µA79M05CKCS	
	–8	Power Flex (KTP)	Reel of 3000	µA79M08CKTPR	µA79M08C

† Package drawings, standard packing quantities, thermal data, symbolization, and PCB design guidelines are available at www.ti.com/sc/package.

schematic



Resistor values shown are nominal.

absolute maximum ratings over virtual junction temperature range (unless otherwise noted)†

Input voltage, V_I . . . . 35 V
Operating virtual junction temperature, T_J . . . . 150°C
Lead temperature 1,6 mm (1/16 inch) from case for 10 seconds . . . . 260°C
Storage temperature range, T_{stg} . . . . –65°C to 150°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.

package thermal data (see Note 1)

PACKAGE	BOARD	θ_{JC}	θ_{JA}
POWER-FLEX (KTP)	High K, JESD 51-5	19°C/W	28°C/W
TO-220 (KC/KCS)	High K, JESD 51-5	3°C/W	19°C/W

NOTE 1: Maximum power dissipation is a function of T_J(max), θ_{JA}, and T_A. The maximum allowable power dissipation at any allowable ambient temperature is $P_D = (T_J(max) – T_A)/\theta_{JA}$. Operating at the absolute maximum T_J of 150°C can affect reliability.

recommended operating conditions

			MIN	MAX	UNIT
V_I	Input voltage	µA79M05C	–7	–25	V
		µA79M08C	–10.5	–25	
I_O	Output current			500	mA
T_J	Operating virtual junction temperature		0	125	°C

electrical characteristics at specified virtual junction temperature, V_I = –10 V, I_O = 350 mA, T_J = 25°C (unless otherwise noted)

PARAMETER	TEST CONDITIONS†		µA79M05C MIN	µA79M05C TYP	µA79M05C MAX	UNIT
Output voltage	V_I = –7 V to –25 V, I_O = 5 mA to 350 mA		–4.8	–5	–5.2	V
		T_J = 0°C to 125°C	–4.75		–5.25	
Input voltage regulation	V_I = –7 V to –25 V			7	50	mV
	V_I = –8 V to –18 V			3	30	
Ripple rejection	V_I = –8 V to –18 V, f = 120 Hz	I_O = 100 mA, T_J = 0°C to 125°C	50			dB
		I_O = 300 mA	54	60		
Output voltage regulation	I_O = 5 mA to 500 mA			75	100	mV
	I_O = 5 mA to 350 mA			50		
Temperature coefficient of output voltage	I_O = 5 mA, T_J = 0°C to 125°C			–0.4		mV/°C
Output noise voltage	f = 10 Hz to 100 kHz			125		µV
Dropout voltage				1.1		V
Bias current				1	2	mA
Bias current change	V_I = –8 V to –18 V, T_J = 0°C to 125°C				0.4	mA
	I_O = 5 mA to 350 mA, T_J = 0°C to 125°C				0.4	
Short-circuit output current	V_I = –30 V			140		mA
Peak output current				0.65		A

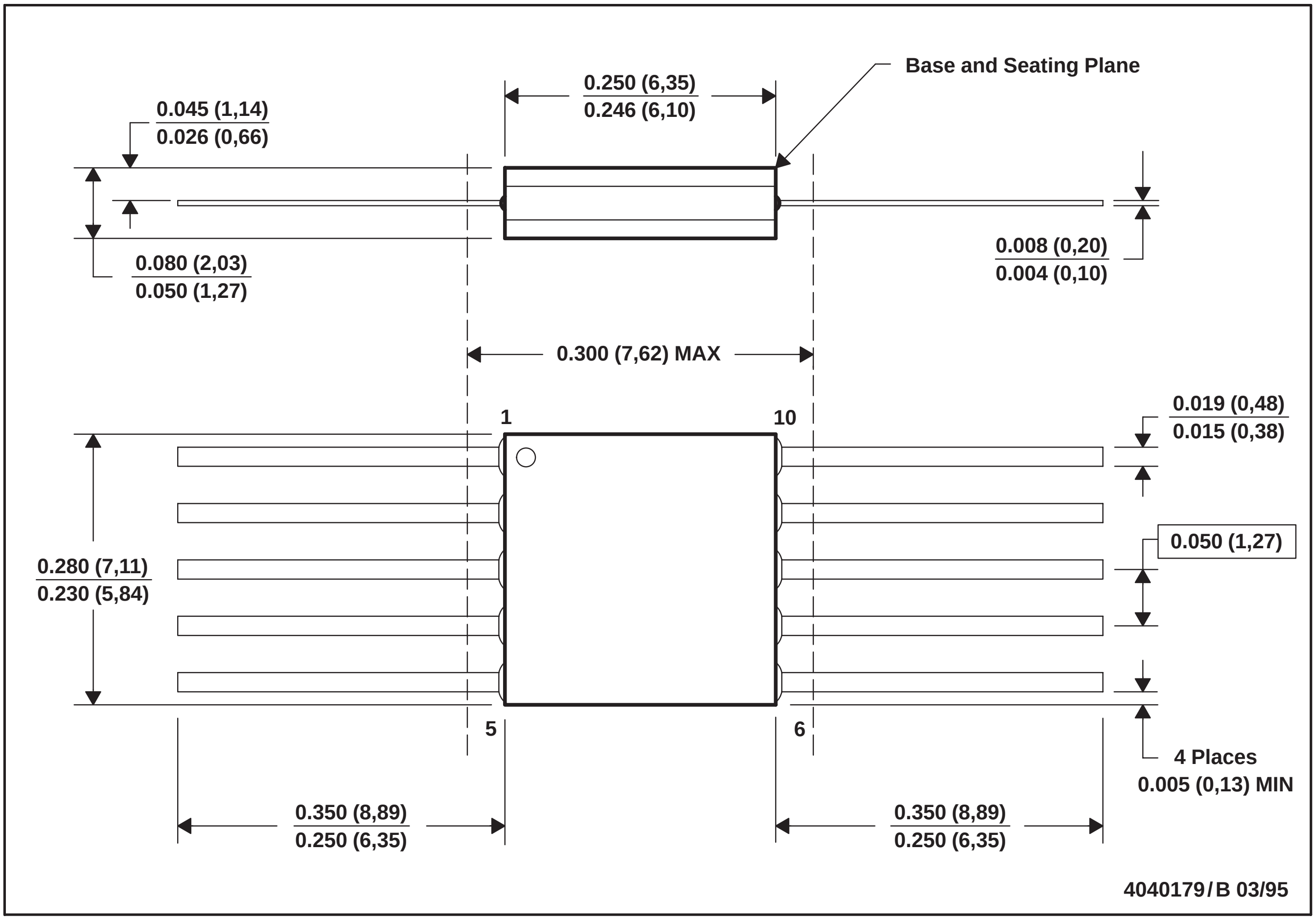
† Pulse-testing techniques maintain T_J as close to T_A as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 2-µF capacitor across the input and a 1-µF capacitor across the output.

electrical characteristics at specified virtual junction temperature, V_I = –19 V, I_O = 350 mA, T_J = 25°C (unless otherwise noted)

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

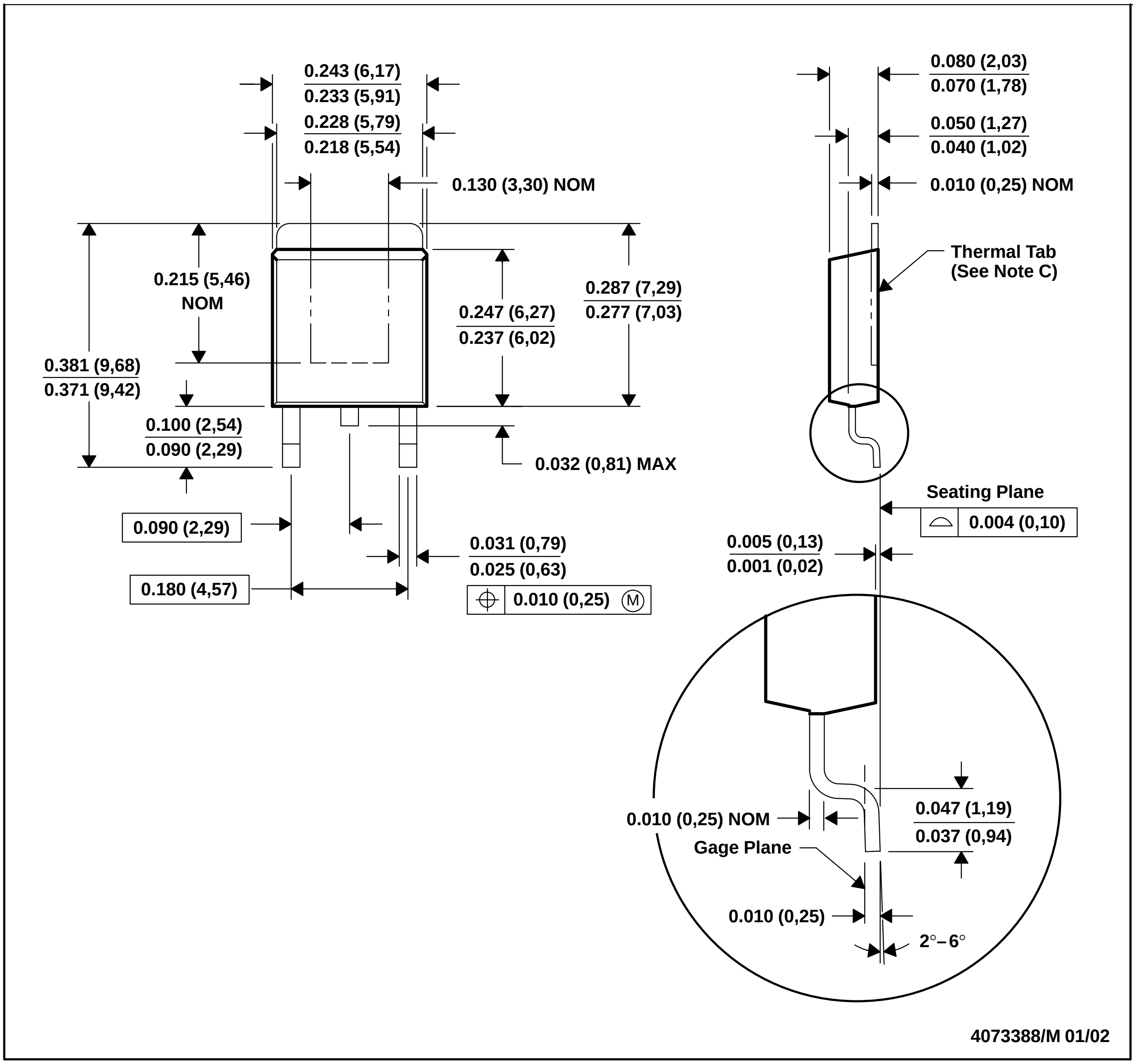
U (S-GDFP-F10) **CERAMIC DUAL FLATPACK**



NOTES: A. All linear dimensions are in inches (millimeters).
B. This drawing is subject to change without notice.
C. This package can be hermetically sealed with a ceramic lid using glass frit.
D. Index point is provided on cap for terminal identification only.
E. Falls within MIL STD 1835 GDFP1-F10 and JEDEC MO-092AA

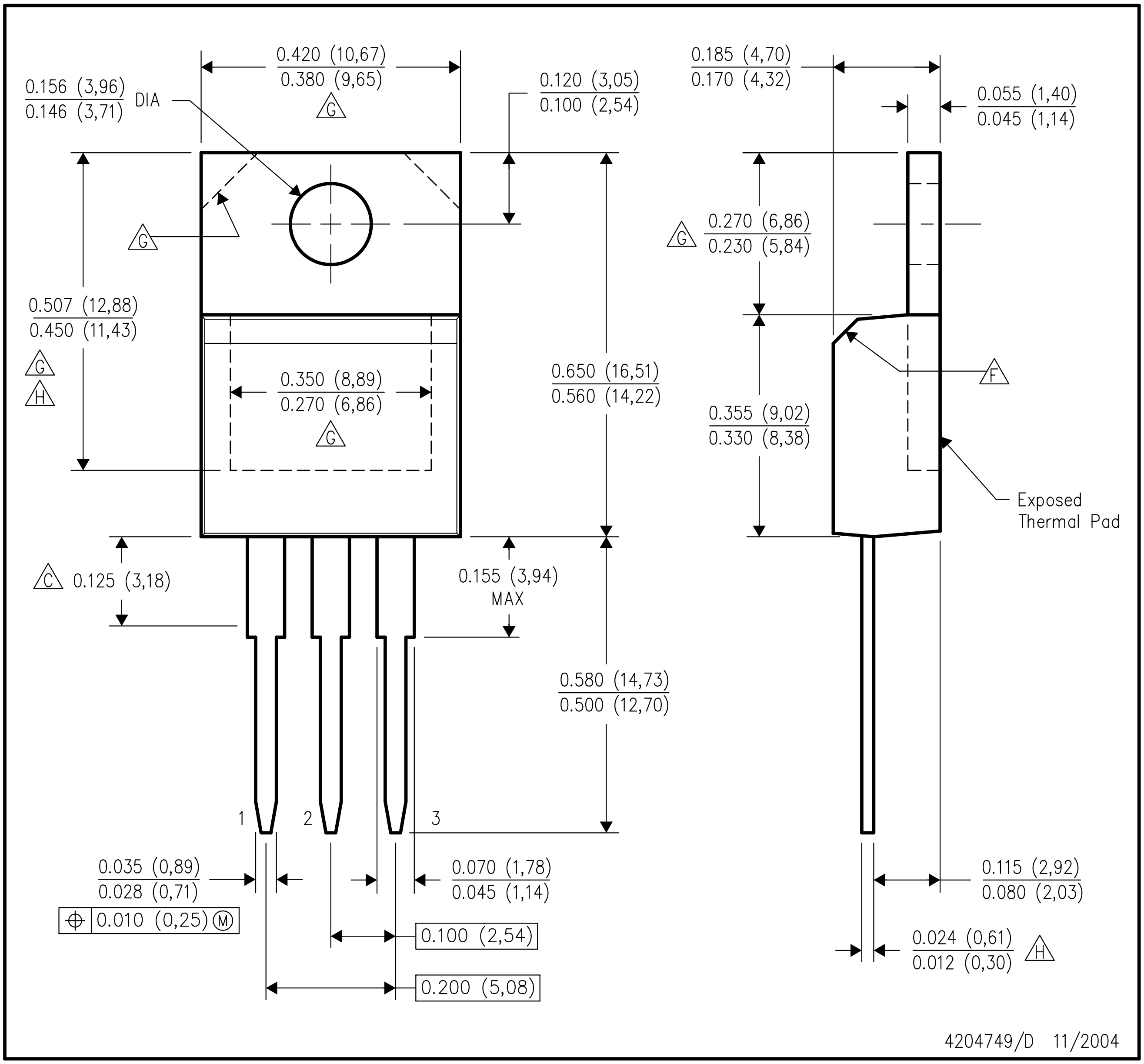
MPSF001F – JANUARY 1996 – REVISED JANUARY 2002

KTP (R-PSFM-G2) **PowerFLEX™ PLASTIC FLANGE-MOUNT PACKAGE**



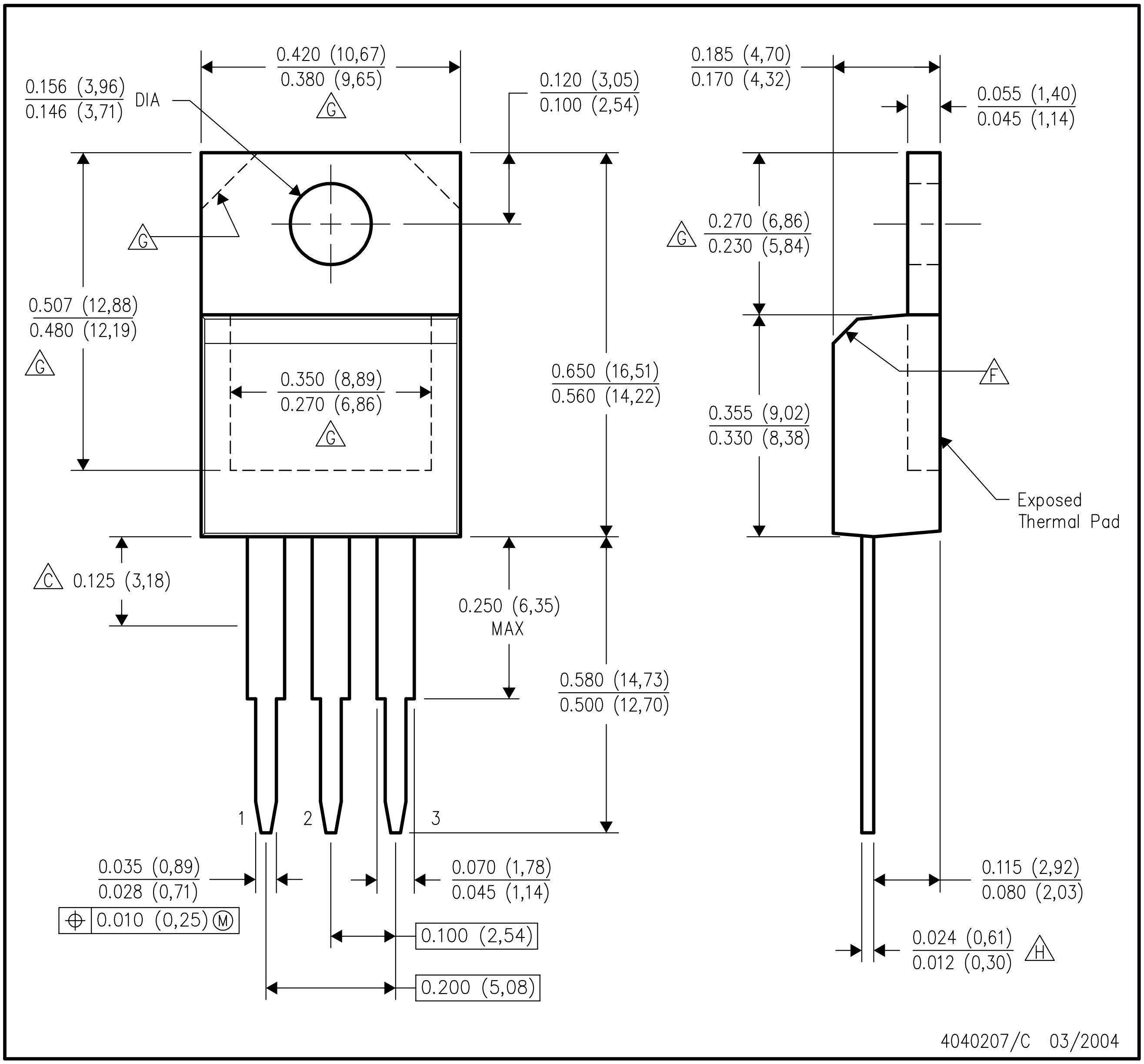
NOTES:
- A. All linear dimensions are in inches (millimeters).
- B. This drawing is subject to change without notice.
- C. The center lead is in electrical contact with the thermal tab.
- D. Dimensions do not include mold protrusions, not to exceed 0.006 (0,15).
- E. Falls within JEDEC TO-252 variation AC.

KCS (R–PSFM–T3) PLASTIC FLANGE–MOUNT PACKAGE



NOTES:
- A. All linear dimensions are in inches (millimeters).
- B. This drawing is subject to change without notice.
- C. Lead dimensions are not controlled within this area.
- D. All lead dimensions apply before solder dip.
- E. The center lead is in electrical contact with the mounting tab.
- F. The chamfer is optional.
- G. Thermal pad contour optional within these dimensions.
- H. Falls within JEDEC TO–220 variation AB, except minimum lead thickness and minimum exposed pad length.

KC (R–PSFM–T3) PLASTIC FLANGE–MOUNT PACKAGE



NOTES:
A. All linear dimensions are in inches (millimeters).
B. This drawing is subject to change without notice.
C. Lead dimensions are not controlled within this area.
D. All lead dimensions apply before solder dip.
E. The center lead is in electrical contact with the mounting tab.
F. The chamfer is optional.
G. Thermal pad contour optional within these dimensions.
H. Falls within JEDEC TO–220 variation AB, except minimum lead thickness.

IMPORTANT NOTICE

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Interface	interface.ti.com	Digital Control	www.ti.com/digitalcontrol
Logic	logic.ti.com	Military	www.ti.com/military
Power Mgmt	power.ti.com	Optical Networking	www.ti.com/opticalnetwork
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