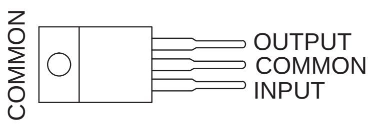
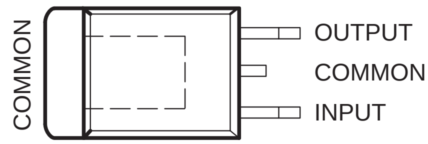
The μA78M15 is obsolete and no longer is supplied.

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

KC (TO-220) PACKAGE
(TOP VIEW)

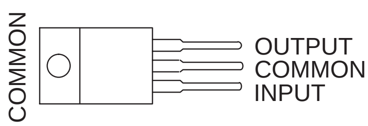


KTP (PowerFLEX™/TO-252*) PACKAGE
(TOP VIEW)

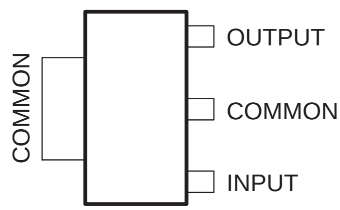


*Complies with JEDEC TO-252, variation AC

KCS (TO-220) PACKAGE
(TOP VIEW)



DCY (SOT-223) PACKAGE
(TOP VIEW)



description/ordering information

This series of fixed-voltage integrated-circuit voltage regulators is designed for 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 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.

The μA78M15 is obsolete and no longer is supplied.

description/ordering information (continued)

ORDERING INFORMATION

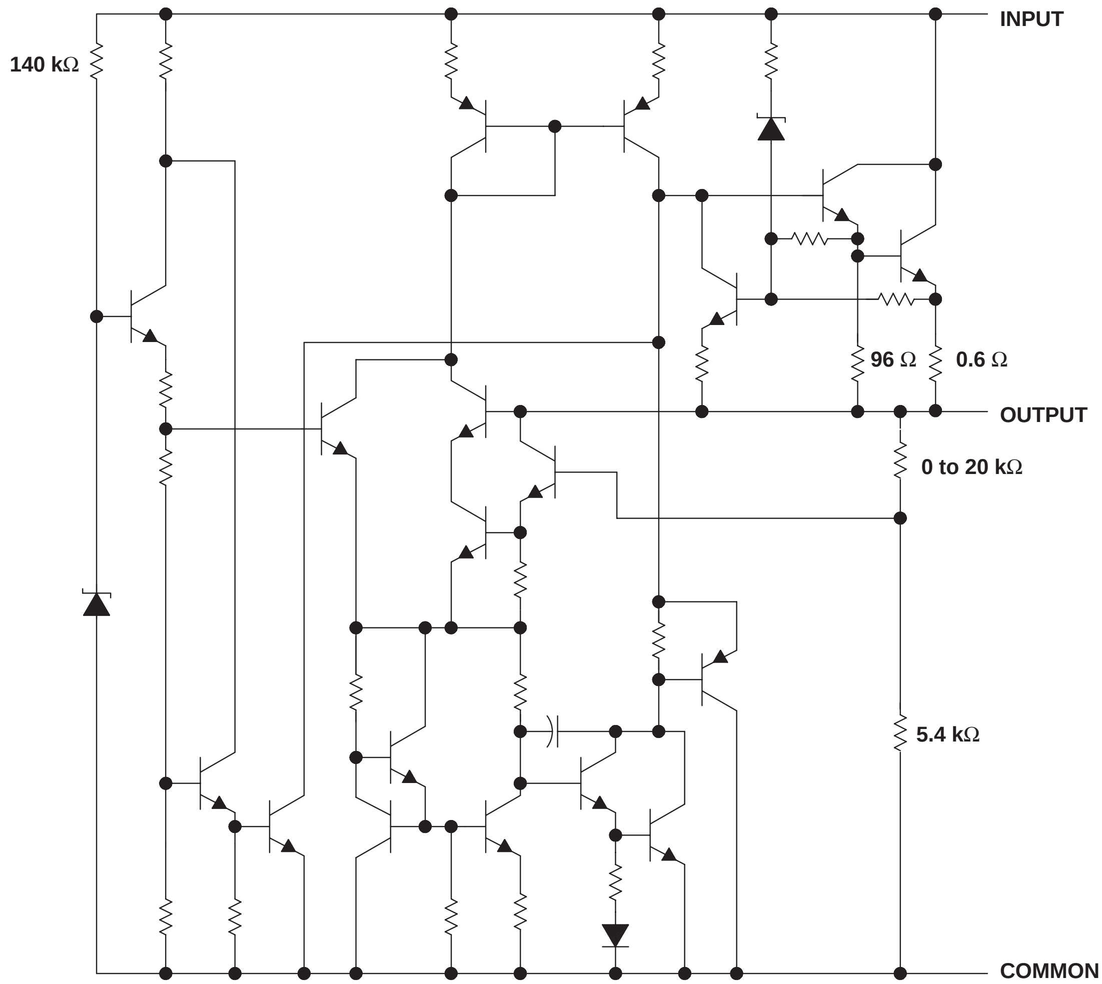
T_J	V_O(NOM) (V)	PACKAGE†		ORDERABLE PART NUMBER	TOP-SIDE MARKING
0°C to 125°C	3.3	PowerFLEX/TO-252* (KTP)	Reel of 3000	μA78M33CKTPR	UA78M33C
		SOT-223 (DCY)	Tube of 80	μA78M33CDCY	C3
			Reel of 2500	μA78M33CDCYR	
		TO-220 (KC)	Tube of 50	μA78M33CKC	UA78M33C
	5	PowerFLEX/TO-252* (KTP)	Reel of 3000	μA78M05CKTPR	UA78M05C
		SOT-223 (DCY)	Tube of 80	μA78M05CDCY	C5
			Reel of 2500	μA78M05CDCYR	
		TO-220 (KC)	Tube of 50	μA78M05CKC	UA78M05C
		TO-220, short shoulder (KCS)	Tube of 20	μA78M05CKCS	
	6	PowerFLEX/TO-252* (KTP)	Reel of 3000	μA78M06CKTPR	UA78M06C
	8	PowerFLEX/TO-252* (KTP)	Reel of 3000	μA78M08CKTPR	UA78M08C
		SOT-223 (DCY)	Tube of 80	μA78M08CDCY	C8
			Reel of 2500	μA78M08CDCYR	
		TO-220 (KC)	Tube of 50	μA78M08CKC	UA78M08C
	9	PowerFLEX/TO-252* (KTP)	Reel of 3000	μA78M09CKTPR	UA78M09C
	10	PowerFLEX/TO-252* (KTP)	Reel of 3000	μA78M10CKTPR	UA78M10C
	12	Power Flex/TO-252* (KTP)	Reel of 3000	μA78M12CKTPR	UA78M12C
		TO-220 (KC)	Tube of 50	μA78M12CKC	UA78M12C
−40°C to 125°C	5	PowerFLEX/TO-252* (KTP)	Reel of 3000	μA78M05IKTPR	UA78M05I
		SOT-223 (DCY)	Tube of 80	μA78M05IDCY	J5
			Reel of 2500	μA78M05IDCYR	
		TO-220 (KC)	Tube of 50	μA78M05IKC	UA78M05I
		TO-220, short shoulder (KCS)	Tube of 20	μA78M05IKCS	

*Complies with TO-252, variation AC.

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

The μA78M15 is obsolete and no longer is supplied.

schematic



Resistor values shown are nominal.

The μA78M15 is obsolete and no longer is supplied.

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
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_{JP}‡	θ_{JC}	θ_{JA}
PowerFLEX/TO-252 (KTP)	High K, JESD 51-5	1.4°C/W	19°C/W	28°C/W
SOT−223 (DCY)	High K, JESD 51-7		4°C/W	53°C/W
TO-220 (KC/KCS)	High K, JESD 51-5	3°C/W	17°C/W	19°C/W

‡ For packages with exposed thermal pads, such as QFN, PowerPAD, and PowerFLEX, θ_{JP} is defined as the thermal resistance between the die junction and the bottom of the exposed pad.

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	μA78M33	5.3	25	V
		μA78M05	7	25	
		μA78M06	8	25	
		μA78M08	10.5	25	
		μA78M09	11.5	26	
		μA78M10	12.5	28	
		μA78M12	14.5	30	
		μA78M15	17.5	30	
I_O	Output current			500	mA
T_J	Operating virtual junction temperature	μA78MxxC	0	125	°C
		μA78MxxI	−40	125	

The μA78M15 is obsolete and no longer is supplied.

electrical characteristics at specified virtual junction temperature, V_I = 8 V, I_O = 350 mA, T_J = 25°C (unless otherwise noted)

PARAMETER	TEST CONDITIONS†		μA78M33C MIN	μA78M33C TYP	μA78M33C MAX	UNIT
Output voltage‡	I_O = 5 mA to 350 mA, V_I = 8 V to 20 V		3.2	3.3	3.4	V
		T_J = 0°C to 125°C	3.1	3.3	3.5	
Input voltage regulation	I_O = 200 mA	V_I = 5.3 V to 25 V		9	100	mV
		V_I = 8 V to 25 V		3	50	
Ripple rejection	V_I = 8 V to 18 V, f = 120 Hz	I_O = 100 mA, T_J = 0°C to 125°C	62			dB
		I_O = 300 mA	62	80		
Output voltage regulation	V_I = 8 V,	I_O = 5 mA to 500 mA		20	100	mV
Temperature coefficient of output voltage	I_O = 5 mA,	T_J = 0°C to 125°C		−1		mV/°C
Output noise voltage	f = 10 Hz to 100 kHz			40	200	μV
Dropout voltage				2		V
Bias current				4.5	6	mA
Bias current change	I_O = 200 mA,	V_I = 8 V to 25 V, T_J = 0°C to 125°C			0.8	mA
	I_O = 5 mA to 350 mA,	T_J = 0°C to 125°C			0.5	
Short-circuit output current	V_I = 35 V			300		mA
Peak output current				700		mA

† All characteristics are measured with a 0.33-μF capacitor across the input and a 0.1-μF capacitor across the output. Pulse-testing techniques maintain T_J as close to T_A as possible. Thermal effects must be taken into account separately.
‡ This specification applies only for dc power dissipation permitted by absolute maximum ratings.

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†		μA78M05C MIN	μA78M05C TYP	μA78M05C MAX	UNIT
Output voltage	I_O = 5 mA to 350 mA, V_I = 7 V to 20 V		4.8	5	5.2	V
		T_J = 0°C to 125°C	4.75		5.25	
Input voltage regulation	I_O = 200 mA	V_I = 7 V to 25 V		3	100	mV
		V_I = 8 V to 25 V		1	50	
Ripple rejection	V_I = 8 V to 18 V, f = 120 Hz	I_O = 100 mA, T_J = 0°C to 125°C	62			dB
		I_O = 300 mA	62	80		
Output voltage regulation	I_O = 5 mA to 500 mA			20	100	mV
	I_O = 5 mA to 200 mA			10	50	
Temperature coefficient of output voltage	I_O = 5 mA,	T_J = 0°C to 125°C		−1		mV/°C
Output noise voltage	f = 10 Hz to 100 kHz			40	200	μV
Dropout voltage				2		V
Bias current				4.5	6	mA
Bias current change	I_O = 200 mA,	V_I = 8 V to 25 V, T_J = 0°C to 125°C			0.8	mA
	I_O = 5 mA to 350 mA,	T_J = 0°C to 125°C			0.5	
Short-circuit output current	V_I = 35 V			300		mA
Peak output current				0.7		A

† All characteristics are measured with a 0.33-μF capacitor across the input and a 0.1-μF capacitor across the output. Pulse-testing techniques maintain T_J as close to T_A as possible. Thermal effects must be taken into account separately.

The μA78M15 is obsolete and no longer is supplied.

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†		μA78M05I MIN	μA78M05I TYP	μA78M05I MAX	UNIT
Output voltage	I_O = 5 mA to 350 mA, V_I = 7 V to 20 V		4.8	5	5.2	V
		T_J = −40°C to 125°C	4.75		5.25	
Input voltage regulation	I_O = 200 mA	V_I = 7 V to 25 V		3	100	mV
		V_I = 8 V to 25 V		1	50	
Ripple rejection	V_I = 8 V to 18 V, f = 120 Hz	I_O = 100 mA, T_J = −40°C to 125°C	62			dB
		I_O = 300 mA	62	80		
Output voltage regulation	I_O = 5 mA to 500 mA			20	100	mV
	I_O = 5 mA to 200 mA			10	50	
Temperature coefficient of output voltage	I_O = 5 mA,	T_J = −40°C to 125°C		−1		mV/°C
Output noise voltage	f = 10 Hz to 100 kHz			40	200	μV
Dropout voltage				2		V
Bias current				4.5	6	mA
Bias current change	I_O = 200 mA,	V_I = 8 V to 25 V, T_J = −40°C to 125°C			0.8	mA
	I_O = 5 mA to 350 mA,	T_J = −40°C to 125°C			0.5	
Short-circuit output current	V_I = 35 V			300		mA
Peak output current				0.7		A

† All characteristics are measured with a 0.33-μF capacitor across the input and a 0.1-μF capacitor across the output. Pulse-testing techniques maintain T_J as close to T_A as possible. Thermal effects must be taken into account separately.

electrical characteristics at specified virtual junction temperature, V_I = 11 V, I_O = 350 mA, T_J = 25°C (unless otherwise noted)

PARAMETER	TEST CONDITIONS†			μA78M06C MIN	μA78M06C TYP	μA78M06C MAX	UNIT
Output voltage	I_O = 5 mA to 350 mA,	V_I = 8 V to 21 V		5.75	6	6.25	V
			T_J = 0°C to 125°C	5.7		6.3	
Input voltage regulation	I_O = 200 mA	V_I = 8 V to 25 V			5	100	mV
		V_I = 9 V to 25 V			1.5	50	
Ripple rejection	V_I = 9 V to 19 V,	f = 120 Hz	I_O = 100 mA, T_J = 0°C to 125°C	59			dB
			I_O = 300 mA	59	80		
Output voltage regulation	I_O = 5 mA to 500 mA				20	120	mV
	I_O = 5 mA to 200 mA				10	60	
Temperature coefficient of output voltage	I_O = 5 mA,	T_J = 0°C to 125°C			−1		mV/°C
Output noise voltage	f = 10 Hz to 100 kHz				45		μV
Dropout voltage					2		V
Bias current					4.5	6	mA
Bias current change	V_I = 9 V to 25 V,	I_O = 200 mA,	T_J = 0°C to 125°C			0.8	mA
	I_O = 5 mA to 350 mA,	T_J = 0°C to 125°C				0.5	
Short-circuit output current	V_I = 35 V				270		mA
Peak output current					0.7		A

† All characteristics are measured with a 0.33-μF capacitor across the input and a 0.1-μF capacitor across the output. Pulse-testing techniques maintain T_J as close to T_A as possible. Thermal effects must be taken into account separately.

The μA78M15 is obsolete and no longer is supplied.

electrical characteristics at specified virtual junction temperature, V_I = 14 V, I_O = 350 mA, T_J = 25°C (unless otherwise noted)

PARAMETER	TEST CONDITIONS†			μA78M08C MIN	μA78M08C TYP	μA78M08C MAX	UNIT
Output voltage	V_I = 10.5 V to 23 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	I_O = 200 mA	V_I = 10.5 V to 25 V			6	100	mV
		V_I = 11 V to 25 V			2	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	56			dB
		I_O = 300 mA		56	80		
Output voltage regulation	I_O = 5 mA to 500 mA				25	160	mV
	I_O = 5 mA to 200 mA				10	80	
Temperature coefficient of output voltage	I_O = 5 mA,	T_J = 0°C to 125°C			−1		mV/°C
Output noise voltage	f = 10 Hz to 100 kHz				52		μV
Dropout voltage					2		V
Bias current					4.6	6	mA
Bias current change	V_I = 10.5 V to 25 V,	I_O = 200 mA,	T_J = 0°C to 125°C			0.8	mA
	I_O = 5 mA to 350 mA,	T_J = 0°C to 125°C				0.5	
Short-circuit output current	V_I = 35 V				250		mA
Peak output current					0.7		A

† All characteristics are measured with a 0.33-μF capacitor across the input and a 0.1-μF capacitor across the output. Pulse-testing techniques maintain T_J as close to T_A as possible. Thermal effects must be taken into account separately.

electrical characteristics at specified virtual junction temperature, V_I = 16 V, I_O = 350 mA, T_J = 25°C (unless otherwise noted)

PARAMETER	TEST CONDITIONS†			μA78M09C MIN	μA78M09C TYP	μA78M09C MAX	UNIT
Output voltage	V_I = 11.5 V to 24 V,	I_O = 5 mA to 350 mA		8.6	9	9.4	V
			T_J = 0°C to 125°C	8.5		9.5	
Input voltage regulation	I_O = 200 mA	V_I = 11.5 V to 26 V			6	100	mV
		V_I = 12 V to 26 V			2	50	
Ripple rejection	V_I = 13 V to 23 V, f = 120 Hz	I_O = 100 mA,	T_J = 0°C to 125°C	56			dB
		I_O = 300 mA		56	80		
Output voltage regulation	I_O = 5 mA to 500 mA				25	180	mV
	I_O = 5 mA to 200 mA				10	90	
Temperature coefficient of output voltage	I_O = 5 mA,	T_J = 0°C to 125°C			−1		mV/°C
Output noise voltage	f = 10 Hz to 100 kHz				58		μV
Dropout voltage					2		V
Bias current					4.6	6	mA
Bias current change	V_I = 11.5 V to 26 V,	I_O = 200 mA,	T_J = 0°C to 125°C			0.8	mA
	I_O = 5 mA to 350 mA,	T_J = 0°C to 125°C				0.5	
Short-circuit output current	V_I = 35 V				250		mA
Peak output current					0.7		A

† All characteristics are measured with a 0.33-μF capacitor across the input and a 0.1-μF capacitor across the output. Pulse-testing techniques maintain T_J as close to T_A as possible. Thermal effects must be taken into account separately.

The μA78M15 is obsolete and no longer is supplied.

electrical characteristics at specified virtual junction temperature, V_I = 17 V, I_O = 350 mA, T_J = 25°C (unless otherwise noted)

PARAMETER	TEST CONDITIONS†			μA78M10C MIN	μA78M10C TYP	μA78M10C MAX	UNIT
Output voltage	V_I = 12.5 V to 25 V,	I_O = 5 mA to 350 mA		9.6	10	10.4	V
			T_J = 0°C to 125°C	9.5		10.5	
Input voltage regulation	I_O = 200 mA	V_I = 12.5 V to 28 V			7	100	mV
		V_I = 14 V to 28 V			2	50	
Ripple rejection	V_I = 15 V to 25 V, f = 120 Hz	I_O = 100 mA,	T_J = 0°C to 125°C	59			dB
		I_O = 300 mA		55	80		
Output voltage regulation	I_O = 5 mA to 500 mA				25	200	mV
	I_O = 5 mA to 200 mA				10	100	
Temperature coefficient of output voltage	I_O = 5 mA,	T_J = 0°C to 125°C			−1		mV/°C
Output noise voltage	f = 10 Hz to 100 kHz				64		μV
Dropout voltage					2		V
Bias current					4.7	6	mA
Bias current change	V_I = 12.5 V to 28 V,	I_O = 200 mA,	T_J = 0°C to 125°C			0.8	mA
	I_O = 5 mA to 350 mA,	T_J = 0°C to 125°C				0.5	
Short-circuit output current	V_I = 35 V				245		mA
Peak output current					0.7		A

† All characteristics are measured with a 0.33-μF capacitor across the input and a 0.1-μF capacitor across the output. Pulse-testing techniques maintain T_J as close to T_A as possible. Thermal effects must be taken into account separately.

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†			μA78M12C MIN	μA78M12C TYP	μA78M12C MAX	UNIT
Output voltage	V_I = 14.5 V to 27 V,	I_O = 5 mA to 350 mA		11.5	12	12.5	V
			T_J = 0°C to 125°C	11.4		12.6	
Input voltage regulation	I_O = 200 mA	V_I = 14.5 V to 30 V			8	100	mV
		V_I = 16 V to 30 V			2	50	
Ripple rejection	V_I = 15 V to 25 V, f = 120 Hz	I_O = 100 mA,	T_J = 0°C to 125°C	55			dB
		I_O = 300 mA		55	80		
Output voltage regulation	I_O = 5 mA to 500 mA				25	240	mV
	I_O = 5 mA to 200 mA				10	120	
Temperature coefficient of output voltage	I_O = 5 mA				−1		mV/°C
Output noise voltage	f = 10 Hz to 100 kHz				75		μV
Dropout voltage					2		V
Bias current					4.8	6	mA
Bias current change	V_I = 14.5 V to 30 V,	I_O = 200 mA,	T_J = 0°C to 125°C			0.8	mA
	I_O = 5 mA to 350 mA,	T_J = 0°C to 125°C				0.5	
Short-circuit output current	V_I = 35 V				240		mA
Peak output current					0.7		A

† All characteristics are measured with a 0.33-μF capacitor across the input and a 0.1-μF capacitor across the output. Pulse-testing techniques maintain T_J as close to T_A as possible. Thermal effects must be taken into account separately.

The µA78M15 is obsolete and no longer is supplied.

electrical characteristics at specified virtual junction temperature, V_I = 23 V, I_O = 350 mA, T_J = 25°C (unless otherwise noted)

PARAMETER	TEST CONDITIONS†			µA78M15C MIN	µA78M15C TYP	µA78M15C MAX	UNIT
Output voltage	V_I = 17.5 V to 30 V,	I_O = 5 mA to 350 mA		14.4	15	15.6	V
			T_J = 0°C to 125°C	14.25		15.75	
Input voltage regulation	I_O = 200 mA	V_I = 17.5 V to 30 V			10	100	mV
		V_I = 20 V to 30 V			3	50	
Ripple rejection	V_I = 18.5 V to 28.5 V, f = 120 Hz	I_O = 100 mA,	T_J = 0°C to 125°C	54			dB
		I_O = 300 mA		54	70		
Output voltage regulation	I_O = 5 mA to 500 mA				25	300	mV
	I_O = 5 mA to 200 mA				10	150	
Temperature coefficient of output voltage	I_O = 5 mA,	T_J = 0°C to 125°C			−1		mV/°C
Output noise voltage	f = 10 Hz to 100 kHz				90		µV
Dropout voltage					2		V
Bias current					4.8	6	mA
Bias current change	V_I = 17.5 V to 30 V,	I_O = 200 mA,	T_J = 0°C to 125°C			0.8	mA
	I_O = 5 mA to 350 mA,	T_J = 0°C to 125°C				0.5	
Short-circuit output current	V_I = 35 V				240		mA
Peak output current					0.7		A

† All characteristics are measured with a 0.33-µF capacitor across the input and a 0.1-µF capacitor across the output. Pulse-testing techniques maintain T_J as close to T_A as possible. Thermal effects must be taken into account separately.

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish	MSL Peak Temp (3)
UA78M05CDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
UA78M05CDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR
UA78M05CKC	ACTIVE	TO-220	KC	3	50	TBD	CU SNPB	Level-NC-NC-NC
UA78M05CKCS	ACTIVE	TO-220	KCS	3	50	TBD	CU	Level-NC-NC-NC
UA78M05CKTPR	ACTIVE	PFM	KTP	2	3000	TBD	CU SNPB	Level-1-220C-UNLIM
UA78M05IDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
UA78M05IDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR
UA78M05IKC	ACTIVE	TO-220	KC	3	50	TBD	CU SNPB	Level-NC-NC-NC
UA78M05IKCS	ACTIVE	TO-220	KCS	3	50	TBD	CU	Level-NC-NC-NC
UA78M05IKTPR	ACTIVE	PFM	KTP	2	3000	TBD	CU SNPB	Level-1-220C-UNLIM
UA78M06CKC	OBSOLETE	TO-220	KC	3		TBD	Call TI	Call TI
UA78M06CKTPR	ACTIVE	PFM	KTP	2	3000	TBD	CU SNPB	Level-1-220C-UNLIM
UA78M06CKTPRG3	ACTIVE	PFM	KTP	2	3000	Green (RoHS & no Sb/Br)	CU SN	Level-1-260C-UNLIM
UA78M08CDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
UA78M08CDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR
UA78M08CKC	ACTIVE	TO-220	KC	3	50	TBD	CU SNPB	Level-NC-NC-NC
UA78M08CKCS	ACTIVE	TO-220	KCS	3	50	TBD	CU SNPB	Level-NC-NC-NC
UA78M08CKTPR	ACTIVE	PFM	KTP	2	3000	TBD	CU SNPB	Level-1-220C-UNLIM
UA78M08CKTPRG3	ACTIVE	PFM	KTP	2	3000	Green (RoHS & no Sb/Br)	CU SN	Level-1-260C-UNLIM
UA78M09CKC	OBSOLETE	TO-220	KC	3		TBD	Call TI	Call TI
UA78M09CKTP	OBSOLETE	PFM	KTP	2		TBD	Call TI	Call TI
UA78M09CKTPR	ACTIVE	PFM	KTP	2	3000	TBD	CU SNPB	Level-1-220C-UNLIM
UA78M09CKTPRG3	ACTIVE	PFM	KTP	2	3000	Green (RoHS & no Sb/Br)	CU SN	Level-1-260C-UNLIM
UA78M10CKC	OBSOLETE	TO-220	KC	3		TBD	Call TI	Call TI
UA78M10CKTPR	ACTIVE	PFM	KTP	2	3000	TBD	CU SNPB	Level-1-220C-UNLIM
UA78M10CKTPRG3	ACTIVE	PFM	KTP	2	3000	Green (RoHS & no Sb/Br)	CU SN	Level-1-260C-UNLIM
UA78M12CKC	ACTIVE	TO-220	KC	3	50	TBD	CU SNPB	Level-NC-NC-NC
UA78M12CKCS	ACTIVE	TO-220	KCS	3	50	TBD	CU SNPB	Level-NC-NC-NC
UA78M12CKTPR	ACTIVE	PFM	KTP	2	3000	TBD	CU SNPB	Level-1-220C-UNLIM
UA78M12CKTPRG3	ACTIVE	PFM	KTP	2	3000	Green (RoHS & no Sb/Br)	CU SN	Level-1-260C-UNLIM
UA78M15CKC	OBSOLETE	TO-220	KC	3		TBD	Call TI	Call TI
UA78M15CKTPR	OBSOLETE	PFM	KTP	2		TBD	Call TI	Call TI
UA78M20CKC	OBSOLETE	TO-220	KC	3		TBD	Call TI	Call TI
UA78M20CKTPR	OBSOLETE	PFM	KTP	2		TBD	Call TI	Call TI
UA78M20Y	OBSOLETE	XCEPT	Y	0		TBD	Call TI	Call TI
UA78M24CKTPR	OBSOLETE	PFM	KTP	2		TBD	Call TI	Call TI
UA78M33CDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
UA78M33CDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish	MSL Peak Temp (3)
UA78M33CKC	ACTIVE	TO-220	KC	3	50	TBD	CU SNPB	Level-NC-NC-NC
UA78M33CKCS	ACTIVE	TO-220	KCS	3	50	TBD	CU SNPB	Level-NC-NC-NC
UA78M33CKTPR	ACTIVE	PFM	KTP	2	3000	TBD	CU SNPB	Level-1-220C-UNLIM
UA78M33CKTPRG3	ACTIVE	PFM	KTP	2	3000	Green (RoHS & no Sb/Br)	CU SN	Level-1-260C-UNLIM

(1) The marketing status values are defined as follows:
ACTIVE: Product device recommended for new designs.
LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.
PREVIEW: Device has been announced but is not in production. Samples may or may not be available.
OBSOLETE: TI has discontinued the production of the device.

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS) or Green (RoHS & no Sb/Br) - please check http://www.ti.com/productcontent for the latest availability information and additional product content details.
TBD: The Pb-Free/Green conversion plan has not been defined.
Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.
Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

(3) MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

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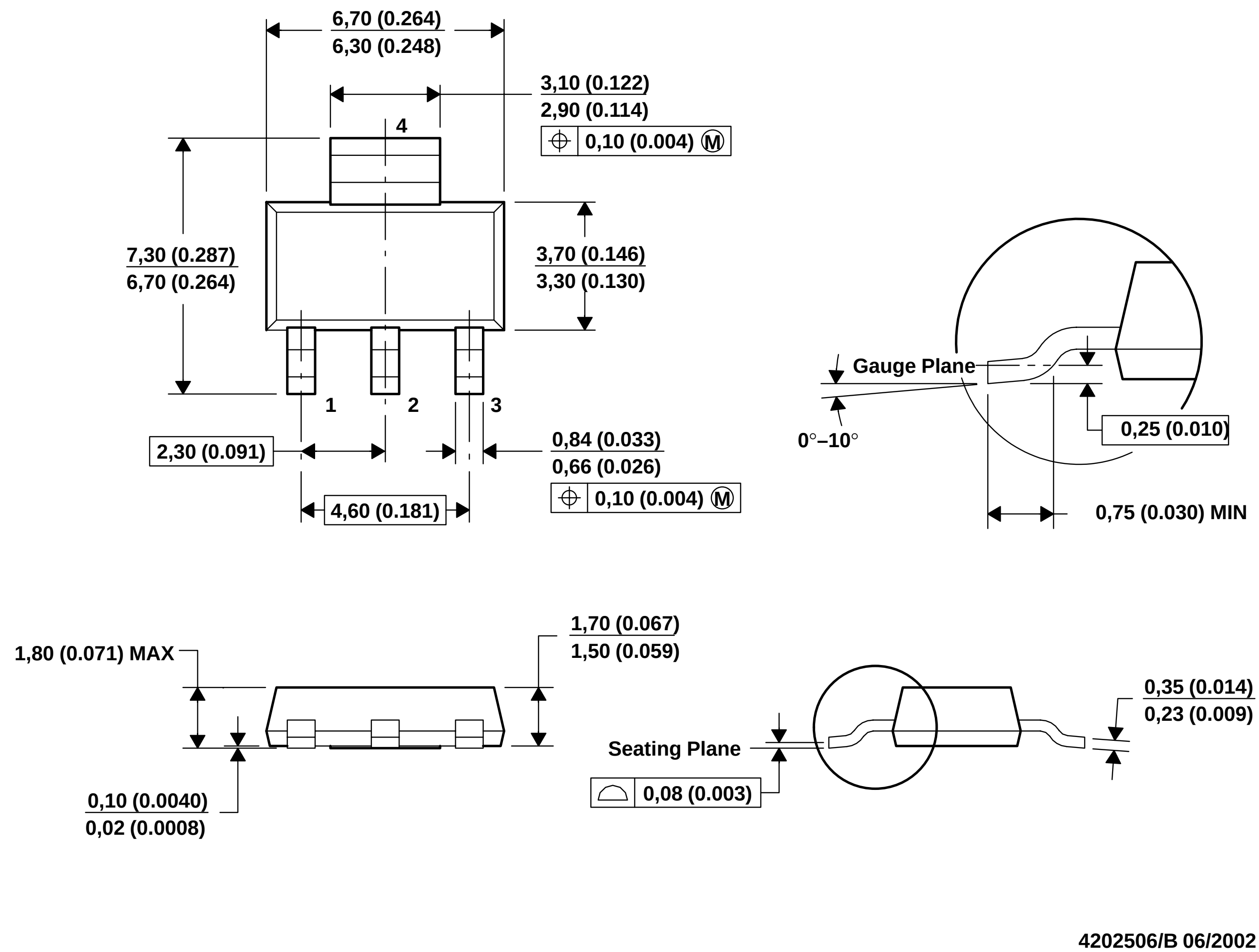
DCY (R-PDSO-G4) **PLASTIC SMALL-OUTLINE**



NOTES: A. All linear dimensions are in millimeters (inches).
B. This drawing is subject to change without notice.
C. Body dimensions do not include mold flash or protrusion.
D. Falls within JEDEC TO-261 Variation AA.

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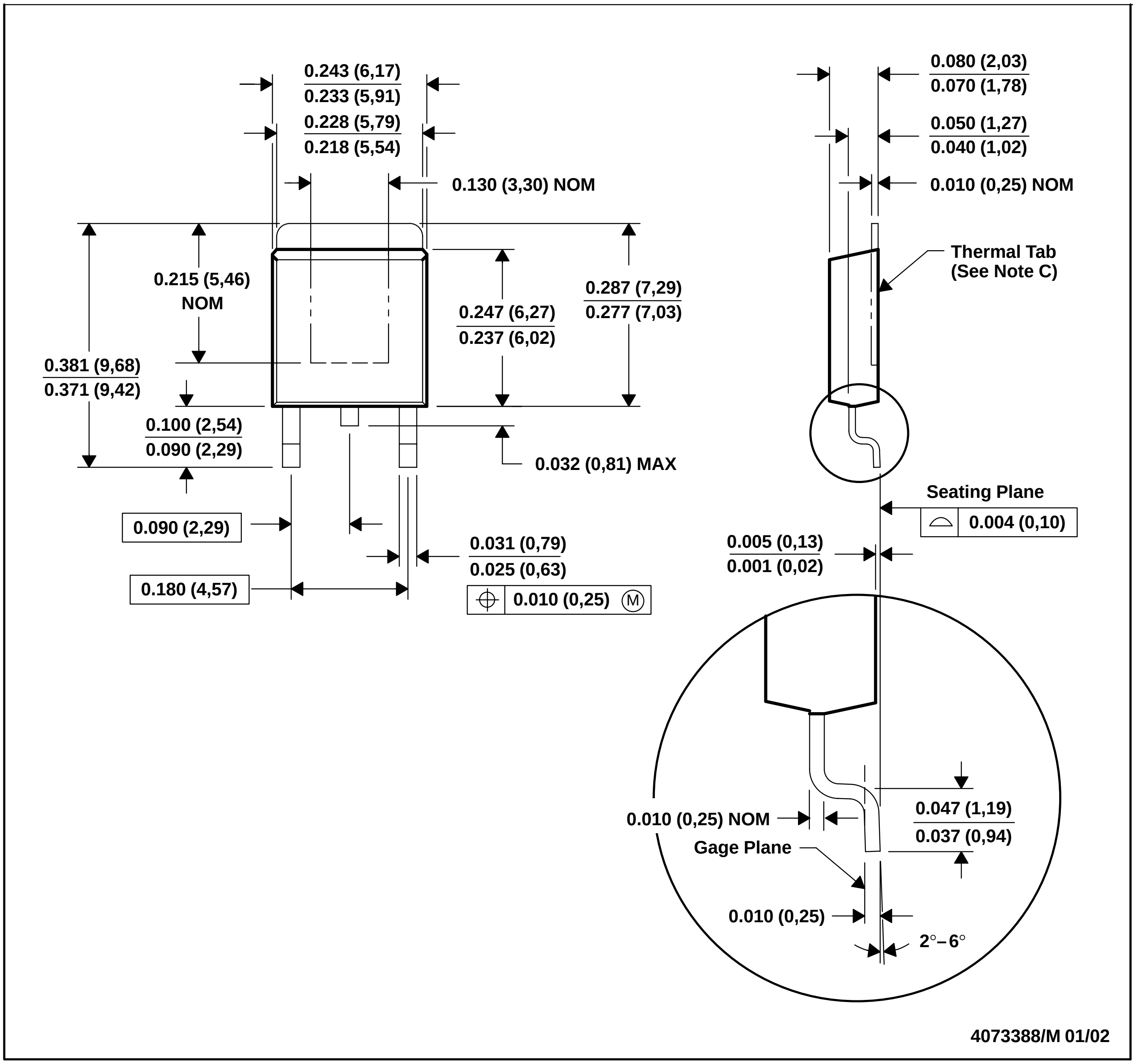
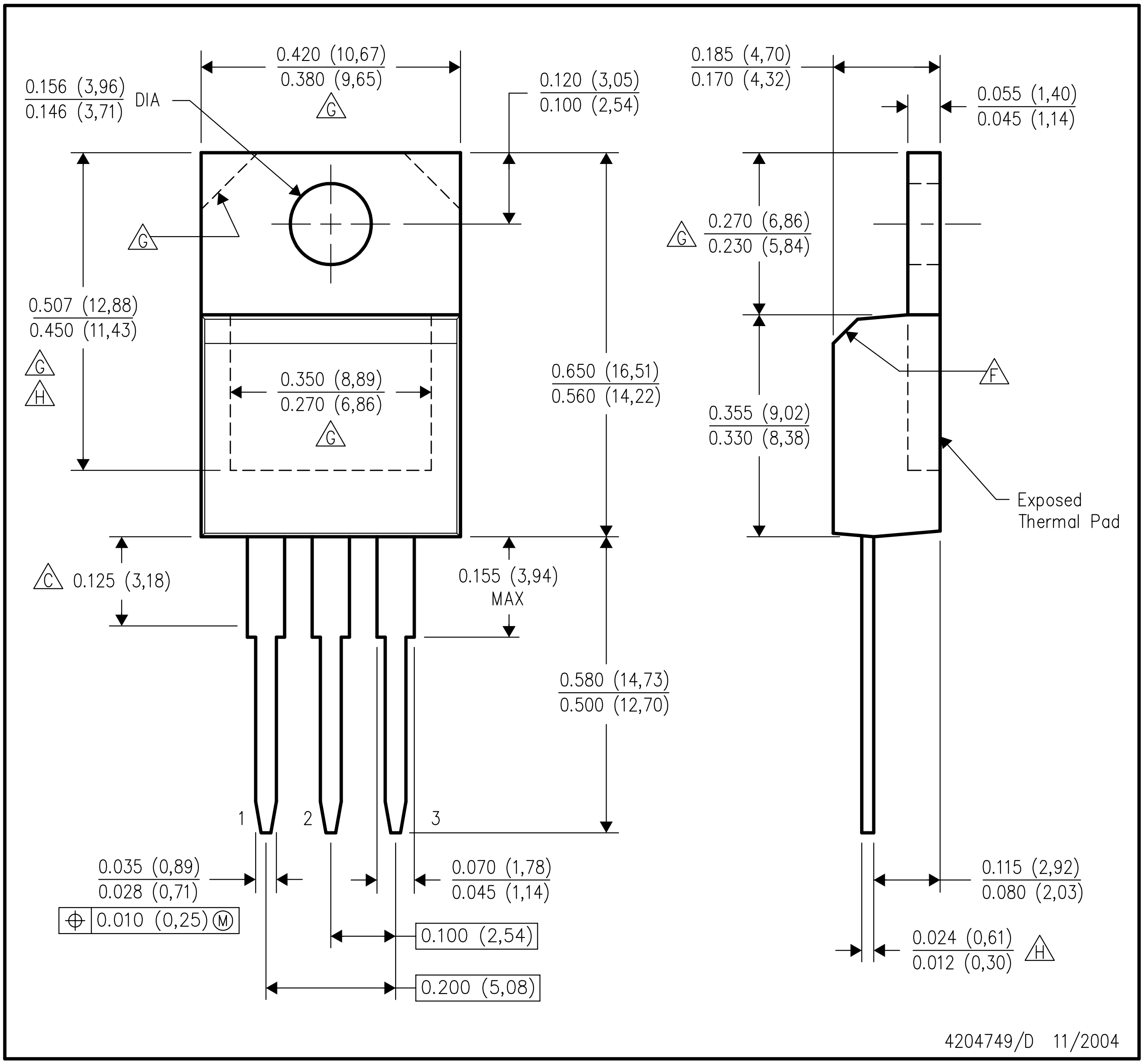
KTP (R-PSFM-G2) **PowerFLEX™ PLASTIC FLANGE-MOUNT PACKAGE**



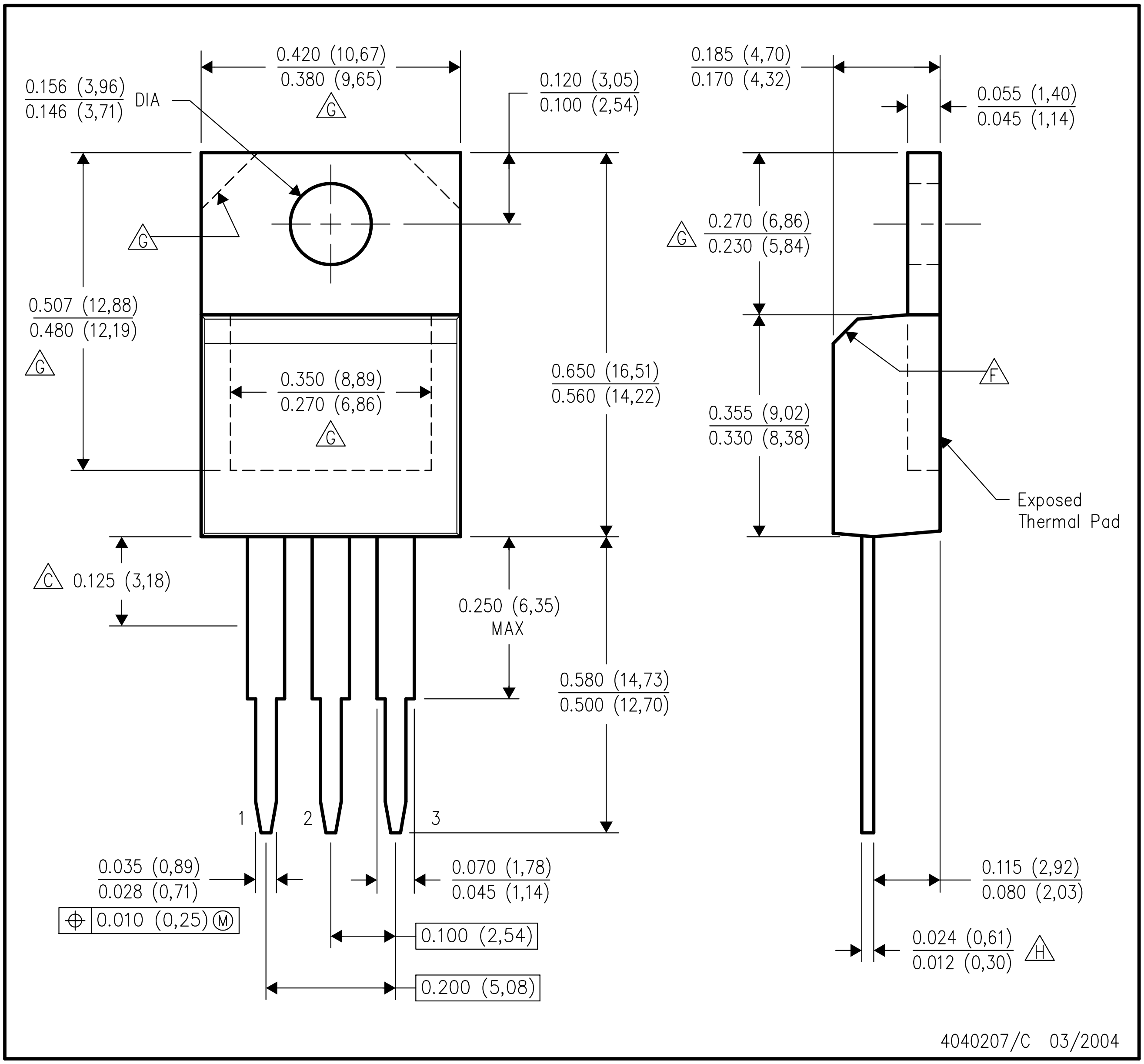
NOTES: A. All linear dimensions are in inches (millimeters).
B. This drawing is subject to change without notice.
C. The center lead is in electrical contact with the thermal tab.
D. Dimensions do not include mold protrusions, not to exceed 0.006 (0,15).
E. Falls within JEDEC TO-252 variation AC.

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.

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Power Mgmt	power.ti.com	Optical Networking	www.ti.com/opticalnetwork
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