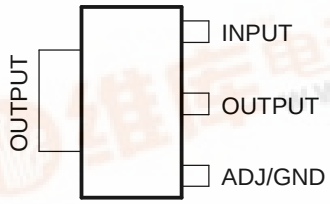
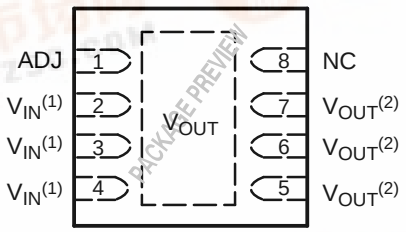
FEATURES

- 1.5 V, 1.8 V, 2.5 V, 3.3 V, 5 V, and Adjustable Output Voltage Options
- Output Current of 800 mA
- Designed for Ceramic Output Capacitor
- Specified Dropout Voltage at Multiple Current Levels
- 0.2% Line Regulation Maximum
- 0.4% Load Regulation Maximum

DCY (SOT-223) PACKAGE
(TOP VIEW)

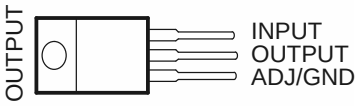


DRJ (QFN) PACKAGE
(TOP VIEW)

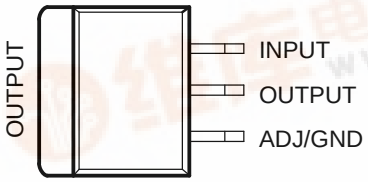


(1) V_{IN} pins (2, 3, 4) must be connected together.
(2) V_{OUT} pins (5, 6, 7) must be connected together.

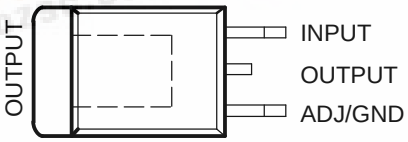
KCS (TO-220) PACKAGE
(TOP VIEW)



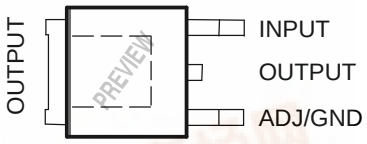
KTE (PowerFLEX™) PACKAGE
(TOP VIEW)



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



KVU (TO-252) PACKAGE
(TOP VIEW)



DESCRIPTION/ORDERING INFORMATION

The TLV1117 is a positive low-dropout voltage regulator designed to provide up to 800 mA of output current. The device is available in 1.5 V, 1.8 V, 2.5 V, 3.3 V, 5 V, and adjustable output voltage options. All internal circuitry is designed to operate down to 1-V input-to-output differential. Dropout voltage is specified at a maximum of 1.3 V at 800 mA, decreasing at lower load currents.

The low-profile surface-mount KTP package allows the device to be used in applications where space is limited. The TLV1117 is designed to be stable with ceramic, tantalum, and aluminum electrolytic output capacitors having an ESR between 0.05 Ω and 10 Ω.

Unlike pnp-type regulators, in which up to 10% of the output current is wasted as quiescent current, the quiescent current of the TLV1117 flows into the load, increasing efficiency.

The TLV1117C device is characterized for operation over the virtual junction temperature range of 0°C to 125°C, and the TLV1117I device is characterized for operation over the virtual junction temperature range of –40°C to 125°C.

TLV1117C ORDERING INFORMATION

T_A	V_O TYP	PACKAGE[1]		ORDERABLE PART NUMBER	TOP-SIDE MARKING
0°C to 125°C	1.5 V	QFN – DRJ	Reel of 1000	TLV1117-15CDRJR	PREVIEW
		SOT-223 – DCY	Tube of 80	TLV1117-15CDCY	T2
			Reel of 2500	TLV1117-15CDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-15CKVUR	PREVIEW
	1.8 V	QFN – DRJ	Reel of 1000	TLV1117-18CDRJR	PREVIEW
		SOT-223 – DCY	Tube of 80	TLV1117-18CDCY	T4
			Reel of 2500	TLV1117-18CDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-18CKVUR	PREVIEW
	2.5 V	QFN – DRJ	Reel of 1000	TLV1117-25CDRJR	PREVIEW
		SOT-223 – DCY	Tube of 80	TLV1117-25CDCY	T6
			Reel of 2500	TLV1117-25CDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-25CKVUR	PREVIEW
	3.3 V	QFN – DRJ	Reel of 1000	TLV1117-33CDRJR	PREVIEW
		SOT-223 – DCY	Tube of 80	TLV1117-33CDCY	V3
			Reel of 2500	TLV1117-33CDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-33CKVUR	PREVIEW
	5 V	QFN – DRJ	Tube of 80	TLV1117-50CDRJ	PREVIEW
			Reel of 1000	TLV1117-50CDRJR	
		SOT-223 – DCY	Tube of 80	TLV1117-50CDCY	VT
			Reel of 2500	TLV1117-50CDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-50CKVUR	PREVIEW
	ADJ	PowerFLEX – KTE	Reel of 2000	TLV1117CKTER	TLV1117C
		PowerFLEX/TO-252[2] – KTP	Reel of 2000	TLV1117CKTPR	TV1117
		QFN – DRJ	Reel of 1000	TLV1117CDRJR	PREVIEW
		SOT-223 – DCY	Tube of 80	TLV1117CDCY	V4
			Reel of 2500	TLV1117CDCYR	
		TO-220 – KCS	Tube of 50	TLV1117CKCS	TLV1117C
		TO-252 – KVU	Reel of 2500	TLV1117CKVUR	PREVIEW

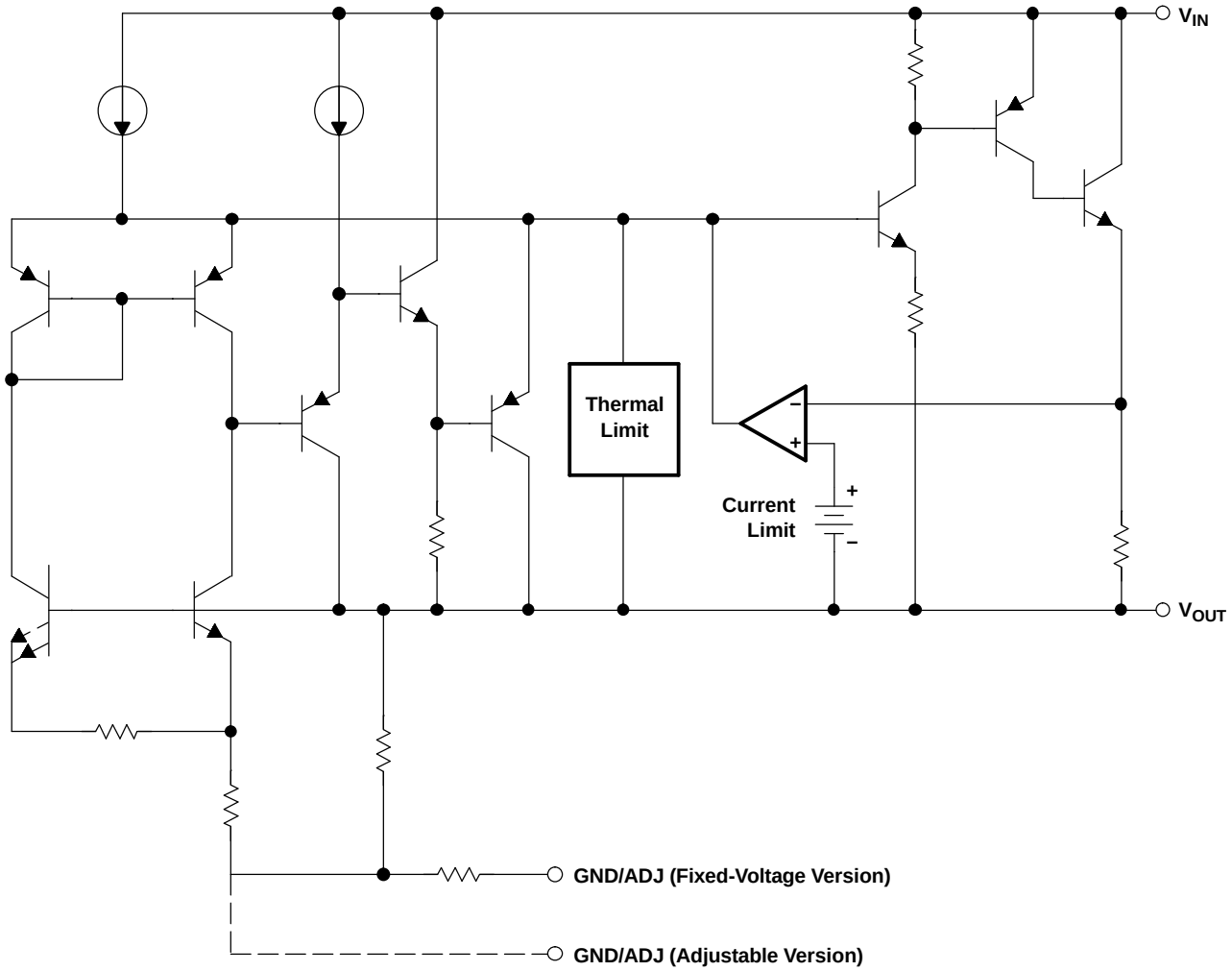
(1) Package drawings, standard packing quantities, thermal data, symbolization, and PCB design guidelines are available at www.ti.com/sc/package.
(2) Complies with TO-252, variation AC

TLV1117I ORDERING INFORMATION

T_A	V_O TYP	PACKAGE(1)		ORDERABLE PART NUMBER	TOP-SIDE MARKING
–40°C to 125°C	1.5 V	QFN – DRJ	Reel of 1000	TLV1117-15IDRJR	PREVIEW
		SOT-223 – DCY	Tube of 80	TLV1117-15IDCY	T3
			Reel of 2500	TLV1117-15IDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-15IKVUR	PREVIEW
	1.8 V	QFN – DRJ	Reel of 1000	TLV1117-18IDRJR	PREVIEW
		SOT-223 – DCY	Tube of 80	TLV1117-18IDCY	T5
			Reel of 2500	TLV1117-18IDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-18IKVUR	PREVIEW
	2.5 V	QFN – DRJ	Reel of 1000	TLV1117-25IDRJR	PREVIEW
		SOT-223 – DCY	Tube of 80	TLV1117-25IDCY	T8
			Reel of 2500	TLV1117-25IDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-25IKVUR	PREVIEW
	3.3 V	QFN – DRJ	Reel of 1000	TLV1117-33IDRJR	PREVIEW
		SOT-223 – DCY	Tube of 80	TLV1117-33IDCY	VS
			Reel of 2500	TLV1117-33IDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-33IKVUR	PREVIEW
	5 V	QFN – DRJ	Reel of 1000	TLV1117-50IDRJR	PREVIEW
		SOT-223 – DCY	Tube of 80	TLV1117-50IDCY	VU
			Reel of 2500	TLV1117-50IDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-50IKVUR	PREVIEW
	ADJ	PowerFLEX – KTE	Reel of 2000	TLV1117IKTER	TLV1117I
		PowerFLEX/TO-252(2) – KTP	Reel of 2000	TLV1117IKTPR	TY1117
		QFN – DRJ	Reel of 1000	TLV1117IDRJR	PREVIEW
		SOT-223 – DCY	Tube of 80	TLV1117IDCY	V2
			Reel of 2500	TLV1117IDCYR	
		TO-220 – KCS	Tube of 50	TLV1117IKCS	TLV1117I
		TO-252 – KVU	Reel of 2500	TLV1117IKVUR	PREVIEW

(1) Package drawings, standard packing quantities, thermal data, symbolization, and PCB design guidelines are available at www.ti.com/sc/package.
(2) Complies with TO-252, variation AC

FUNCTIONAL BLOCK DIAGRAM



Absolute Maximum Ratings(1)

over operating free-air temperature range (unless otherwise noted)

		MIN	MAX	UNIT
V_I	Continuous input voltage		16	V
T_J	Operating virtual-junction temperature		150	°C
T_{stg}	Storage temperature range	–65	150	°C

(1) 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(1)

PACKAGE	BOARD	θ_{JP}(2)	θ_{JC}	θ_{JA}
PowerFLEX (KTE)	High K, JESD 51-5	2.7°C/W	11.6°C/W	23.3°C/W
PowerFLEX/TO-252 (KTP)	High K, JESD 51-5	1.4°C/W	19.2°C/W	27.6°C/W
QFN (DRJ)	High K, JESD 51-5	TBD		TBD
SOT-223 (DCY)	High K, JESD 51-7		30.6°C/W	52.8°C/W
TO-252 (KVU)	High K, JESD 51-5	TBD		TBD
TO-220 (KCS)	High K, JESD 51-5	3°C/W	17°C/W	19°C/W

(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.
(2) 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.

Recommended Operating Conditions

			MIN(1)	MAX	UNIT
V_{IN}	Input voltage	TLV1117	2.7	15	V
		TLV1117-15	2.9	15	
		TLV1117-18	3.2	15	
		TLV1117-25	3.9	15	
		TLV1117-33	4.7	15	
		TLV1117-50	6.4	15	
I_O	Output current			0.8	A
T_J	Operating virtual-junction temperature	TLV1117C	0	125	°C
		TLV1117I	–40	125	

(1) The input-to-output differential across the regulator should provide for some margin against regulator operation at the maximum dropout (for a particular current value). This margin is needed to account for tolerances in both the input voltage (lower limit) and the output voltage (upper limit). The absolute minimum V_{IN} for a desired maximum output current can be calculated by the following:
$V_{IN(min)} = V_{OUT(max)} + V_{DO(max\ @\ rated\ current)}$

TLV1117C Electrical Characteristics

T_J = 0°C to 125°C, all typical values are at T_J = 25°C (unless otherwise noted)

PARAMETER	TEST CONDITIONS(1)		MIN	TYP	MAX	UNIT
Reference voltage, V_{REF}	$V_{IN} - V_{OUT}$ = 2 V, I_{OUT} = 10 mA, T_J = 25°C	TLV1117	1.238	1.25	1.262	V
	$V_{IN} - V_{OUT}$ = 1.4 V to 10 V, I_{OUT} = 10 mA to 800 mA		1.225	1.25	1.27	
Output voltage, V_{OUT}	V_{IN} = 3.5 V, I_{OUT} = 10 mA, T_J = 25°C	TLV1117-15	1.485	1.5	1.515	
	V_{IN} = 2.9 V to 10 V, I_{OUT} = 0 to 800 mA		1.455	1.5	1.545	
	V_{IN} = 3.8 V, I_{OUT} = 10 mA, T_J = 25°C	TLV1117-18	1.782	1.8	1.818	
	V_{IN} = 3.2 V to 10 V, I_{OUT} = 0 to 800 mA		1.746	1.8	1.854	
	V_{IN} = 4.5 V, I_{OUT} = 10 mA, T_J = 25°C	TLV1117-25	2.475	2.5	2.525	
	V_{IN} = 3.9 V to 10 V, I_{OUT} = 0 to 800 mA		2.450	2.5	2.550	
	V_{IN} = 5 V, I_{OUT} = 10 mA, T_J = 25°C	TLV1117-33	3.267	3.3	3.333	
	V_{IN} = 4.75 V to 10 V, I_{OUT} = 0 to 800 mA		3.235	3.3	3.365	
	V_{IN} = 7 V, I_{OUT} = 10 mA, T_J = 25°C	TLV1117-50	4.95	5.0	5.050	
	V_{IN} = 6.5 V to 12 V, I_{OUT} = 0 to 800 mA		4.90	5.0	5.100	
Line regulation	I_{OUT} = 10 mA, $V_{IN} - V_{OUT}$ = 1.5 V to 13.75 V	TLV1117		0.035	0.2	%
	I_{OUT} = 0 mA, V_{IN} = 2.9 V to 10 V	TLV1117-15		1	6	mV
	I_{OUT} = 0 mA, V_{IN} = 3.2 V to 10 V	TLV1117-18		1	6	
	I_{OUT} = 0 mA, V_{IN} = 3.9 V to 10 V	TLV1117-25		1	6	
	I_{OUT} = 0 mA, V_{IN} = 4.75 V to 15 V	TLV1117-33		1	6	
	I_{OUT} = 0 mA, V_{IN} = 6.5 V to 15 V	TLV1117-50		1	10	
Load regulation	I_{OUT} = 10 mA to 800 mA, $V_{IN} - V_{OUT}$ = 3 V	TLV1117		0.2	0.4	%
	I_{OUT} = 0 to 800 mA, V_{IN} = 2.9 V	TLV1117-15		1	10	mV
	I_{OUT} = 0 to 800 mA, V_{IN} = 3.2 V	TLV1117-18		1	10	
	I_{OUT} = 0 to 800 mA, V_{IN} = 3.9 V	TLV1117-25		1	10	
	I_{OUT} = 0 to 800 mA, V_{IN} = 4.75 V	TLV1117-33		1	10	
	I_{OUT} = 0 to 800 mA, V_{IN} = 6.5 V	TLV1117-50		1	15	
Dropout voltage, V_{DO}(2)	I_{OUT} = 100 mA			1.1	1.2	V
	I_{OUT} = 500 mA			1.15	1.25	
	I_{OUT} = 800 mA			1.2	1.3	
Current limit	$V_{IN} - V_{OUT}$ = 5 V, T_J = 25°C(3)		0.8	1.2	1.6	A
Minimum load current	V_{IN} = 15 V	TLV1117		1.7	5	mA
Quiescent current	$V_{IN} \leq$ 15 V	All fixed-voltage options		5	10	mA
Thermal regulation	30-ms pulse, T_A = 25°C			0.01	0.1	%/W
Ripple rejection	$V_{IN} - V_{OUT}$ = 3 V, V_{ripple} = 1 V_{pp}, f = 120 Hz		60	75		dB
ADJ pin current				80	120	µA
Change in ADJ pin current	$V_{IN} - V_{OUT}$ = 1.4 V to 10 V, I_{OUT} = 10 mA to 800 mA			0.2	5	µA
Temperature stability	T_J = full range			0.5		%
Long-term stability	1000 hrs, No load, T_A = 125°C			0.3		%
Output noise voltage (% of V_{OUT})	f = 10 Hz to 100 kHz			0.003		%

(1) All characteristics are measured with a 10-µF capacitor across the input and a 10-µF capacitor across the output. Pulse testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible.
(2) Dropout is defined as the V_{IN} to V_{OUT} differential at which V_{OUT} drops 100 mV below the value of V_{OUT}, measured at $V_{IN} = V_{OUT(nom)} + 1.5$ V.
(3) Current limit test specified under recommended operating conditions

TLV1117I Electrical Characteristics

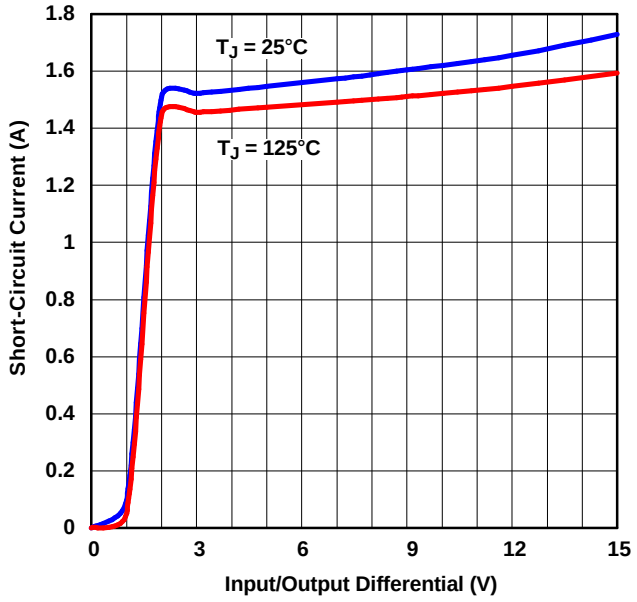
T_J = –40°C to 125°C, all typical values are at T_J = 25°C (unless otherwise noted)

PARAMETER	TEST CONDITIONS(1)		MIN	TYP	MAX	UNIT
Reference voltage, V_{REF}	V_{IN} – V_{OUT} = 2 V, I_{OUT} = 10 mA, T_J = 25°C	TLV1117	1.238	1.25	1.262	V
	V_{IN} – V_{OUT} = 1.4 V to 10 V, I_{OUT} = 10 mA to 800 mA		1.20	1.25	1.29	
Output voltage, V_{OUT}	V_{IN} = 3.5 V, I_{OUT} = 10 mA, T_J = 25°C	TLV1117-15	1.485	1.5	1.515	
	V_{IN} = 2.9 V to 10 V, I_{OUT} = 0 to 800 mA		1.44	1.5	1.56	
	V_{IN} = 3.8 V, I_{OUT} = 10 mA, T_J = 25°C	TLV1117-18	1.782	1.8	1.818	
	V_{IN} = 3.2 V to 10 V, I_{OUT} = 0 to 800 mA		1.728	1.8	1.872	
	V_{IN} = 4.5 V, I_{OUT} = 10 mA, T_J = 25°C	TLV1117-25	2.475	2.5	2.525	
	V_{IN} = 3.9 V to 10 V, I_{OUT} = 0 to 800 mA		2.4	2.5	2.6	
	V_{IN} = 5 V, I_{OUT} = 10 mA, T_J = 25°C	TLV1117-33	3.267	3.3	3.333	
	V_{IN} = 4.75 V to 10 V, I_{OUT} = 0 to 800 mA		3.168	3.3	3.432	
	V_{IN} = 7 V, I_{OUT} = 10 mA, T_J = 25°C	TLV1117-50	4.95	5.0	5.05	
	V_{IN} = 6.5 V to 12 V, I_{OUT} = 0 to 800 mA		4.8	5.0	5.2	
Line regulation	I_{OUT} = 10 mA, V_{IN} – V_{OUT} = 1.5 V to 13.75 V	TLV1117		0.035	0.3	%
	I_{OUT} = 0 mA, V_{IN} = 2.9 V to 10 V	TLV1117-15		1	10	mV
	I_{OUT} = 0 mA, V_{IN} = 3.2 V to 10 V	TLV1117-18		1	10	
	I_{OUT} = 0 mA, V_{IN} = 3.9 V to 10 V	TLV1117-25		1	10	
	I_{OUT} = 0 mA, V_{IN} = 4.75 V to 15 V	TLV1117-33		1	10	
	I_{OUT} = 0 mA, V_{IN} = 6.5 V to 15 V	TLV1117-50		1	15	
Load regulation	I_{OUT} = 10 mA to 800 mA, V_{IN} – V_{OUT} = 3 V	TLV1117		0.2	0.5	%
	I_{OUT} = 0 to 800 mA, V_{IN} = 2.9 V	TLV1117-15		1	15	mV
	I_{OUT} = 0 to 800 mA, V_{IN} = 3.2 V	TLV1117-18		1	15	
	I_{OUT} = 0 to 800 mA, V_{IN} = 3.9 V	TLV1117-25		1	15	
	I_{OUT} = 0 to 800 mA, V_{IN} = 4.75 V	TLV1117-33		1	15	
	I_{OUT} = 0 to 800 mA, V_{IN} = 6.5 V	TLV1117-50		1	20	
Dropout voltage, V_{DO}(2)	I_{OUT} = 100 mA			1.1	1.3	V
	I_{OUT} = 500 mA			1.15	1.35	
	I_{OUT} = 800 mA			1.2	1.4	
Current limit	V_{IN} – V_{OUT} = 5 V, T_J = 25°C(3)		0.8	1.2	1.6	A
Minimum load current	V_{IN} = 15 V	TLV1117		1.7	5	mA
Quiescent current	V_{IN} ≤ 15 V	All fixed-voltage options		5	15	mA
Thermal regulation	30-ms pulse, T_A = 25°C			0.01	0.1	%/W
Ripple rejection	V_{IN} – V_{OUT} = 3 V, V_{ripple} = 1 V_{pp}, f = 120 Hz		60	75		dB
ADJ pin current				80	120	µA
Change in ADJ pin current	V_{IN} – V_{OUT} = 1.4 V to 10 V, I_{OUT} = 10 mA to 800 mA			0.2	10	µA
Temperature stability	T_J = full range			0.5		%
Long-term stability	1000 hrs, No load, T_A = 125°C			0.3		%
Output noise voltage (% of V_{OUT})	f = 10 Hz to 100 kHz			0.003		%

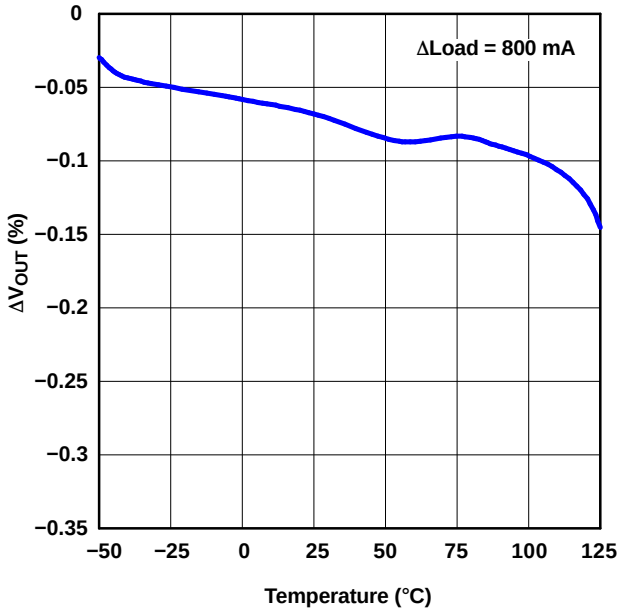
(1) All characteristics are measured with a 10-µF capacitor across the input and a 10-µF capacitor across the output. Pulse testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible.
(2) Dropout is defined as the V_{IN} to V_{OUT} differential at which V_{OUT} drops 100 mV below the value of V_{OUT}, measured at V_{IN} = $V_{OUT(nom)}$ + 1.5 V.
(3) Current limit test specified under recommended operating conditions

TYPICAL CHARACTERISTICS

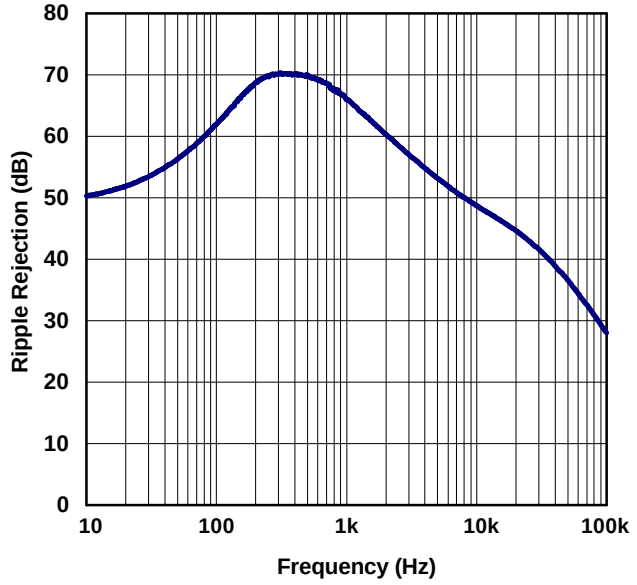
SHORT-CIRCUIT CURRENT vs (V_{IN} – V_{OUT})



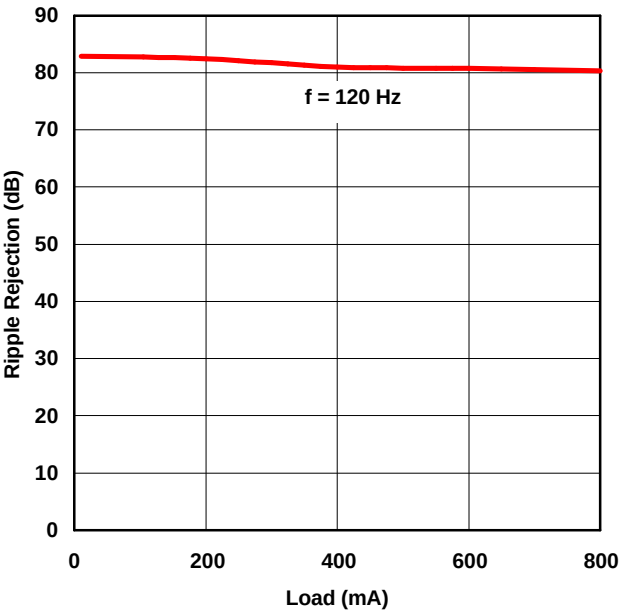
LOAD REGULATION



RIPPLE REJECTION vs FREQUENCY (ADJ VERSION)

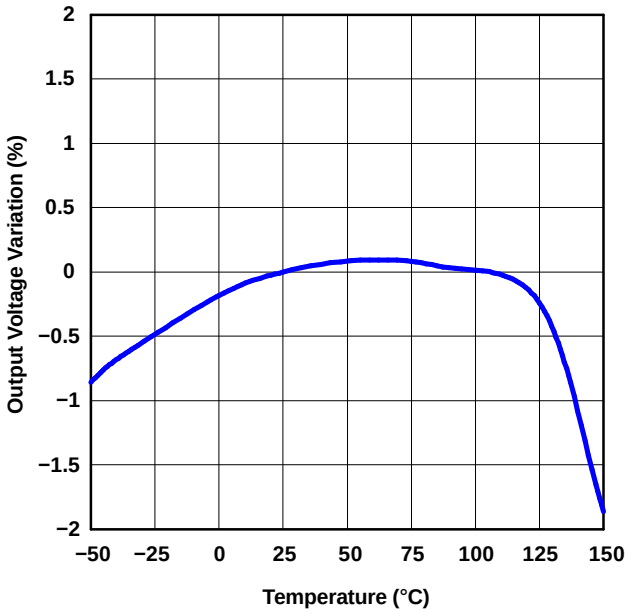


RIPPLE REJECTION vs LOAD CURRENT (ADJ VERSION)

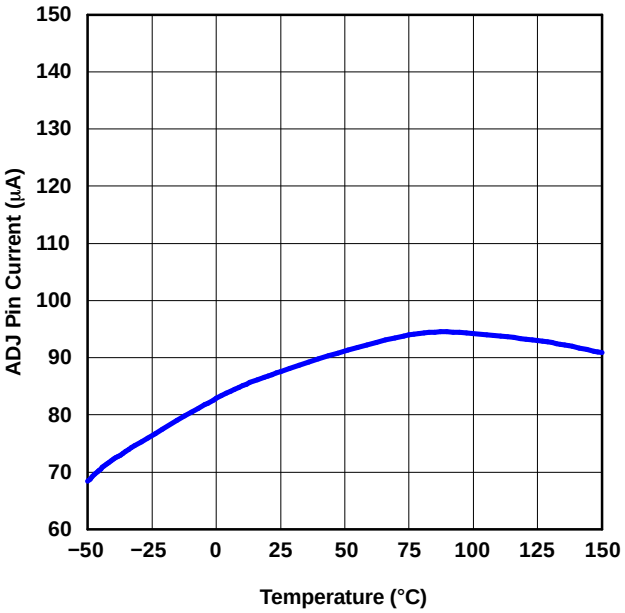


TYPICAL CHARACTERISTICS (continued)

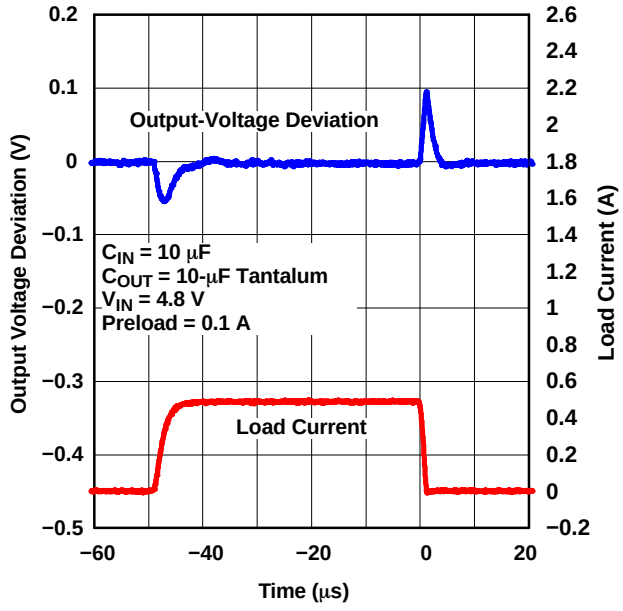
TEMPERATURE STABILITY



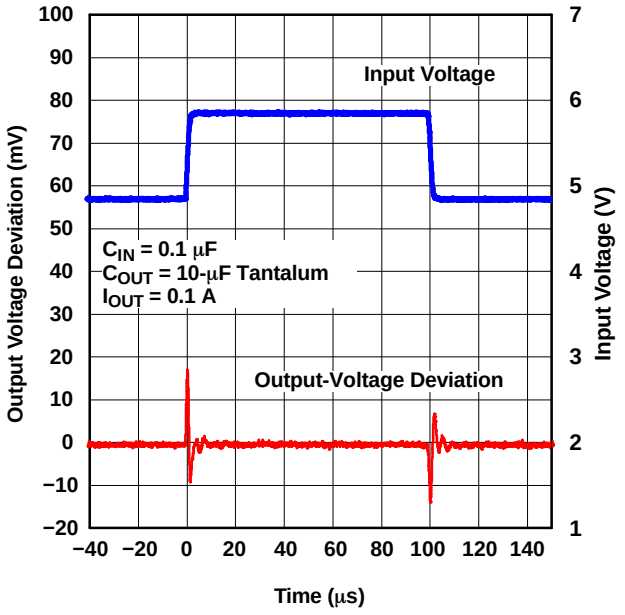
ADJ PIN CURRENT vs TEMPERATURE



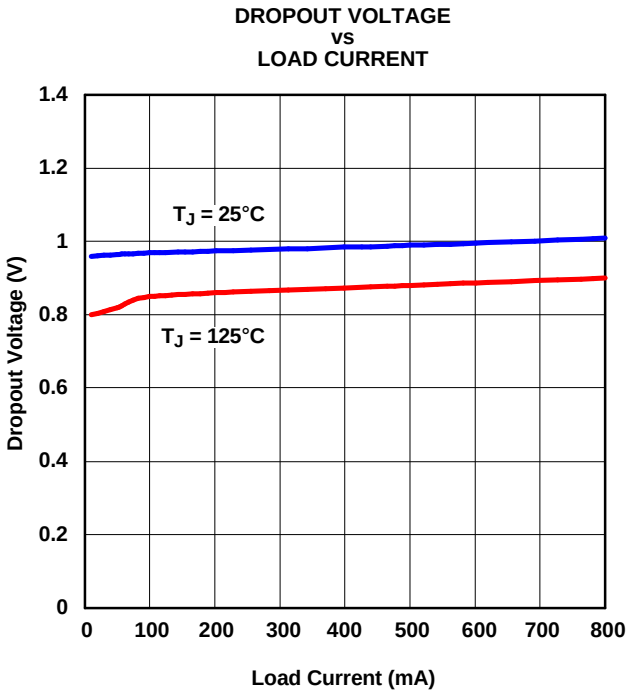
TLV1117-33 LOAD TRANSIENT RESPONSE



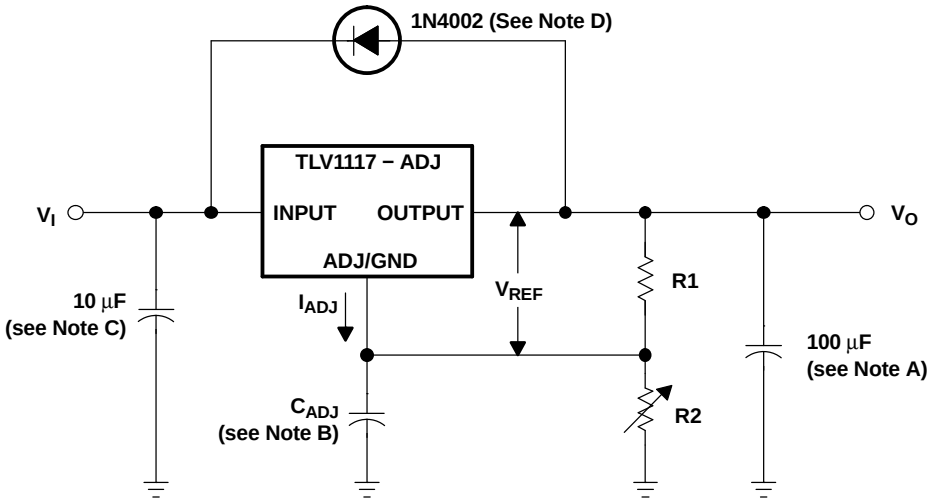
TLV1117-33 LINE TRANSIENT RESPONSE



TYPICAL CHARACTERISTICS (continued)



APPLICATION INFORMATION



V_{OUT} is calculated as:

$$V_{OUT} = V_{REF}\left(1 + \frac{R2}{R1}\right) + (I_{ADJ} \times R2)$$

Because I_{ADJ} typically is 55 μA, it is negligible in most applications.

A. Output capacitor selection is critical for regulator stability. Larger C_{OUT} values benefit the regulator by improving transient response and loop stability.

B. C_{ADJ} can be used to improve ripple rejection. If C_{ADJ} is used, a C_{OUT} that is larger in value than C_{ADJ} must be used.

C. C_{IN} is recommended if TLV1117 is not located near the power-supply filter.

D. An external diode is recommended to protect the regulator if the input instantaneously is shorted to GND.

E. This device is designed to be stable with ceramic, tantalum, and aluminum electrolytic output capacitors having an ESR between 0.05 Ω and 10 Ω.

Figure 1. Basic Adjustable Regulator

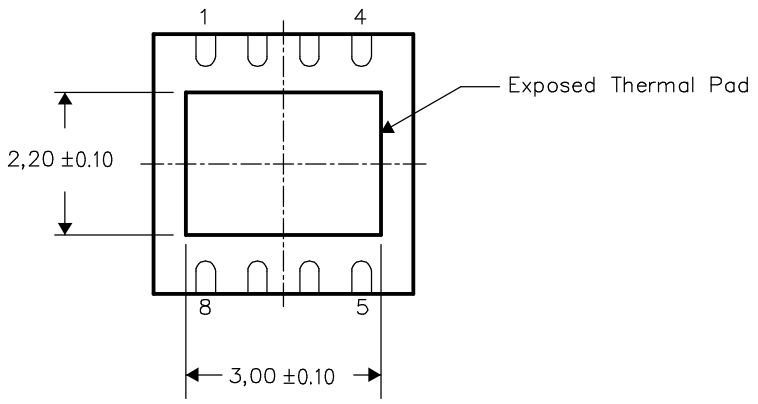
THERMAL PAD MECHANICAL DATA
DRJ (S-PDSO-N8)

THERMAL INFORMATION

This package incorporates an exposed thermal pad that is designed to be attached directly to an external heatsink. The thermal pad must be soldered directly to the printed circuit board (PCB), the PCB can be used as a heatsink. In addition, through the use of thermal vias, the thermal pad can be attached directly to a ground plane or special heatsink structure designed into the PCB. This design optimizes the heat transfer from the integrated circuit (IC).

For information on the Quad Flatpack No–Lead (QFN) package and its advantages, refer to Application Report, Quad Flatpack No–Lead Logic Packages, Texas Instruments Literature No. SCBA017. This document is available at www.ti.com.

The exposed thermal pad dimensions for this package are shown in the following illustration.



Bottom View

NOTE: All linear dimensions are in millimeters

Exposed Thermal Pad Dimensions

4206882/A 03/05

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish	MSL Peak Temp (3)
TLV1117-15CDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-15CDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-15CDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1YEAR
TLV1117-15CKCS	PREVIEW	TO-220	KCS	3	50	TBD	Call TI	Call TI
TLV1117-15IDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-15IDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-15IDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1YEAR
TLV1117-15IDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1YEAR
TLV1117-15IKCS	PREVIEW	TO-220	KCS	3	50	TBD	Call TI	Call TI
TLV1117-18CDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-18CDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-18CDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1YEAR
TLV1117-18CDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1YEAR
TLV1117-18CKCS	PREVIEW	TO-220	KCS	3	50	TBD	Call TI	Call TI
TLV1117-18IDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-18IDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-18IDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1YEAR
TLV1117-18IKCS	PREVIEW	TO-220	KCS	3	50	TBD	Call TI	Call TI
TLV1117-25CDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-25CDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-25CDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1YEAR
TLV1117-25CDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1YEAR
TLV1117-25CKCS	PREVIEW	TO-220	KCS	3	50	TBD	Call TI	Call TI
TLV1117-25CKTPR	PREVIEW	PFM	KTP	2	3000	TBD	Call TI	Call TI
TLV1117-25IDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-25IDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-25IDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1YEAR
TLV1117-25IKCS	PREVIEW	TO-220	KCS	3	50	TBD	Call TI	Call TI
TLV1117-33CDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-33CDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-33CDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1YEAR
TLV1117-33CDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1YEAR
TLV1117-33CKCS	PREVIEW	TO-220	KCS	3	50	TBD	Call TI	Call TI
TLV1117-33CKTTR	PREVIEW	DDPAK/ TO-263	KTT	3	1000	TBD	Call TI	Call TI

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish	MSL Peak Temp (3)
TLV1117-33DCY	PREVIEW	SOT-223	DCY	4	80	TBD	Call TI	Call TI
TLV1117-33IDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-33IDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-33IDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1YEAR
TLV1117-33IDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1YEAR
TLV1117-33IKCS	PREVIEW	TO-220	KCS	3	50	TBD	Call TI	Call TI
TLV1117-50CDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-50CDCYG3	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-50CDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-50CDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1YEAR
TLV1117-50CDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1YEAR
TLV1117-50CKCS	PREVIEW	TO-220	KCS	3	50	TBD	Call TI	Call TI
TLV1117-50CKTTR	PREVIEW	DDPAK/ TO-263	KTT	3		TBD	Call TI	Call TI
TLV1117-50IDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-50IDCYG3	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1YEAR
TLV1117-50IDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117-50IDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1YEAR
TLV1117-50IDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1YEAR
TLV1117CDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117CDCYG3	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1YEAR
TLV1117CDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117CDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1YEAR
TLV1117CKCS	ACTIVE	TO-220	KCS	3	50	TBD	CU SNPB	N / A for Pkg Type
TLV1117CKCSE3	ACTIVE	TO-220	KCS	3	50	Pb-Free (RoHS)	CU SN	N / A for Pkg Type
TLV1117CKTER	NRND	PFM	KTE	3	2000	TBD	CU SNPB	Level-1-220C-UNLIM
TLV1117CKTPR	ACTIVE	PFM	KTP	2	3000	TBD	CU SNPB	Level-1-220C-UNLIM
TLV1117CKTPRG3	NRND	PFM	KTP	2	3000	Green (RoHS & no Sb/Br)	CU SN	Level-1-260C-UNLIM
TLV1117CKVURG3	ACTIVE	PFM	KVU	3	2500	Green (RoHS & no Sb/Br)	CU SN	Level-3-260C-168 HR
TLV1117IDCY	ACTIVE	SOT-223	DCY	4	80	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117IDCYR	ACTIVE	SOT-223	DCY	4	2500	TBD	CU SNPB	Level-2-235C-1 YEAR
TLV1117IDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1YEAR
TLV1117IKCS	ACTIVE	TO-220	KCS	3	50	TBD	CU SNPB	N / A for Pkg Type
TLV1117IKCSE3	ACTIVE	TO-220	KCS	3	50	Pb-Free (RoHS)	CU SN	N / A for Pkg Type

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish	MSL Peak Temp (3)
TLV1117IKTER	ACTIVE	PFM	KTE	3	2000	TBD	CU SNPB	Level-1-220C-UNLIM
TLV1117IKTPR	ACTIVE	PFM	KTP	2	3000	TBD	CU SNPB	Level-1-220C-UNLIM
TLV1117IKTPRG3	ACTIVE	PFM	KTP	2	3000	Green (RoHS & no Sb/Br)	CU SN	Level-1-260C-UNLIM
TLV1117IKVURG3	ACTIVE	PFM	KVU	3	2500	Green (RoHS & no Sb/Br)	CU SN	Level-3-260C-168 HR

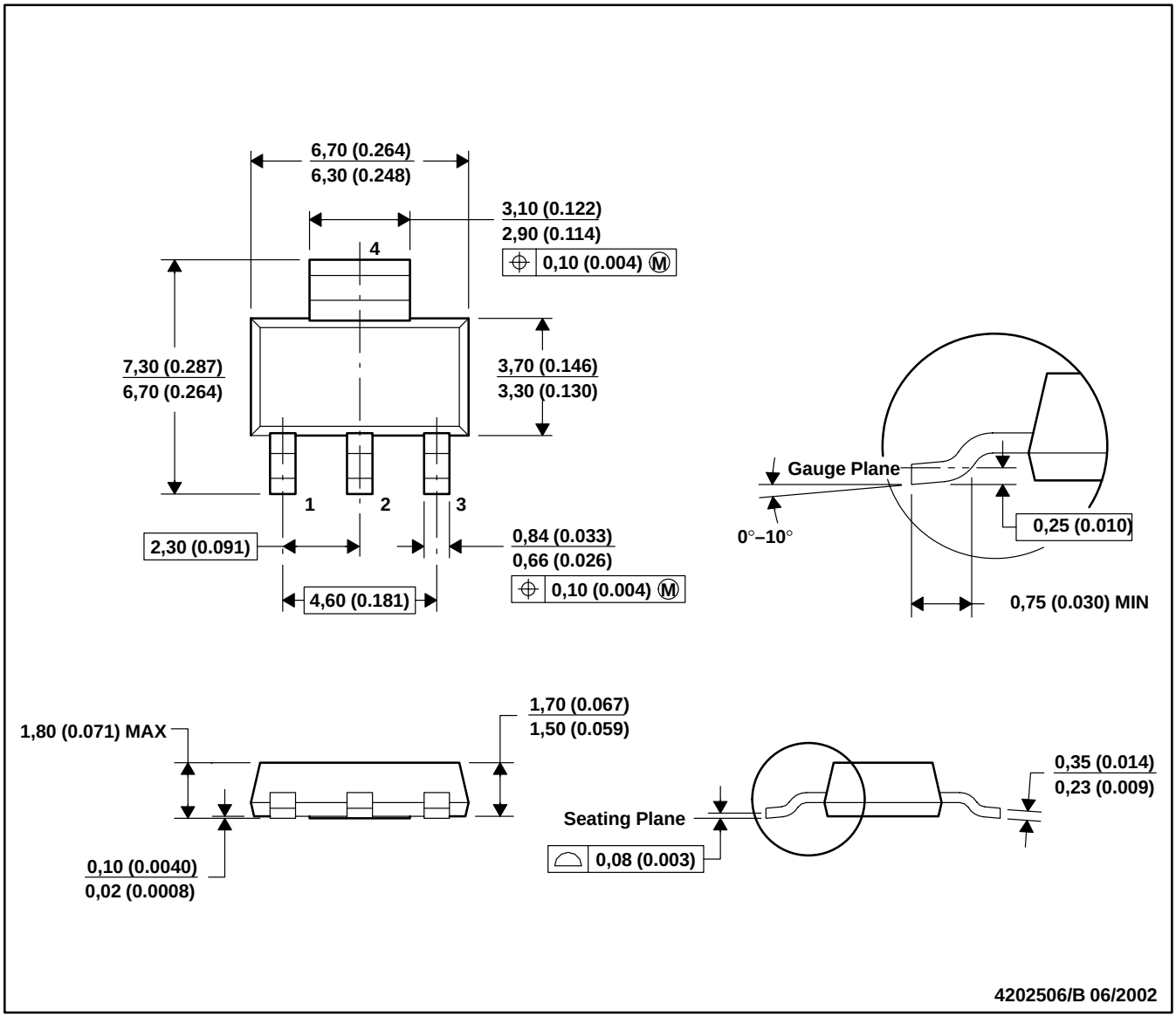
(1) The marketing status values are defined as follows:
ACTIVE: Product device recommended for new designs.
LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
NRND: Not recommended for new designs. Device is in production to support existing customers, 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), Pb-Free (RoHS Exempt), 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.
Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.
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.

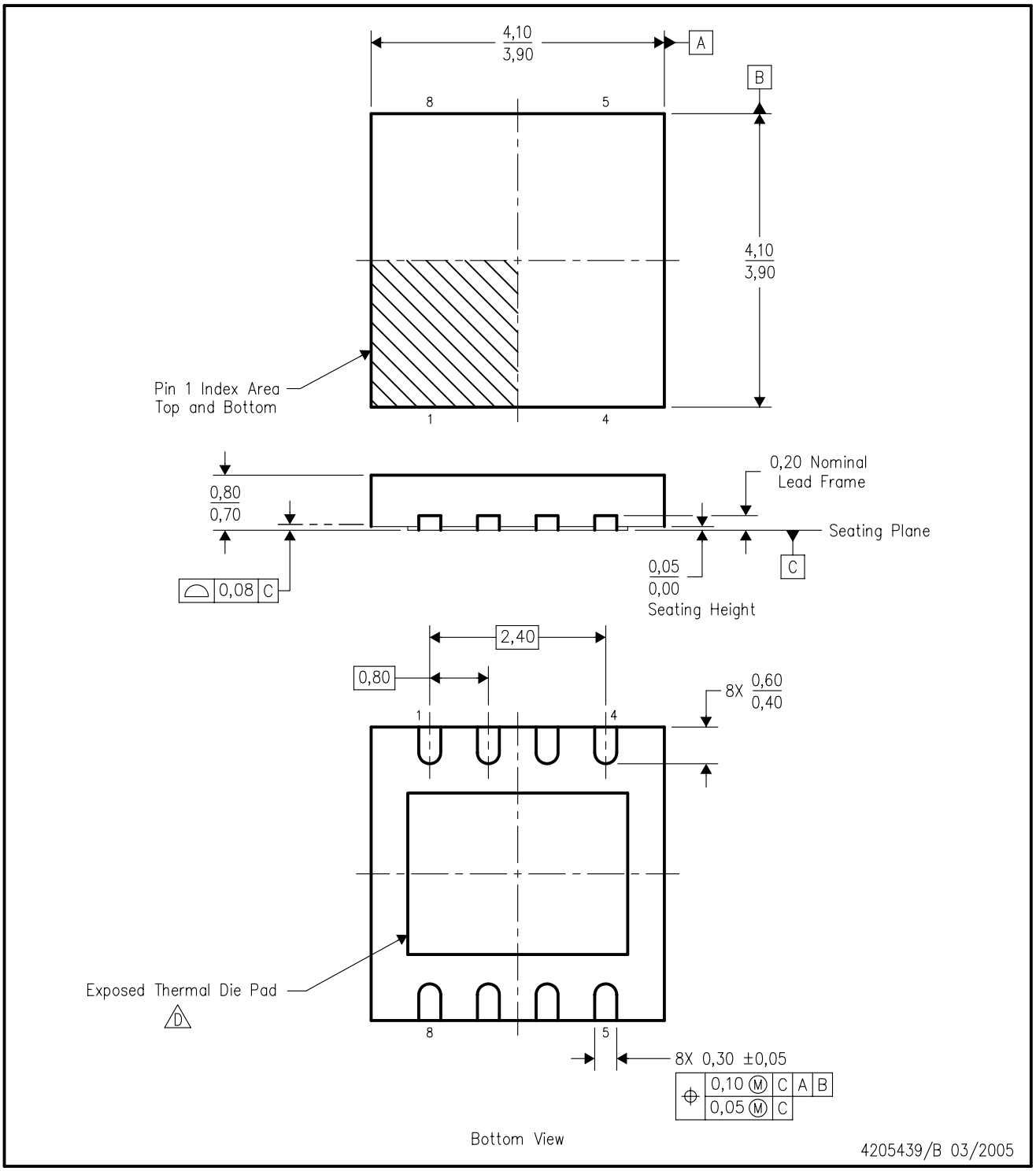
MPDS094A – APRIL 2001 – REVISED JUNE 2002

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.

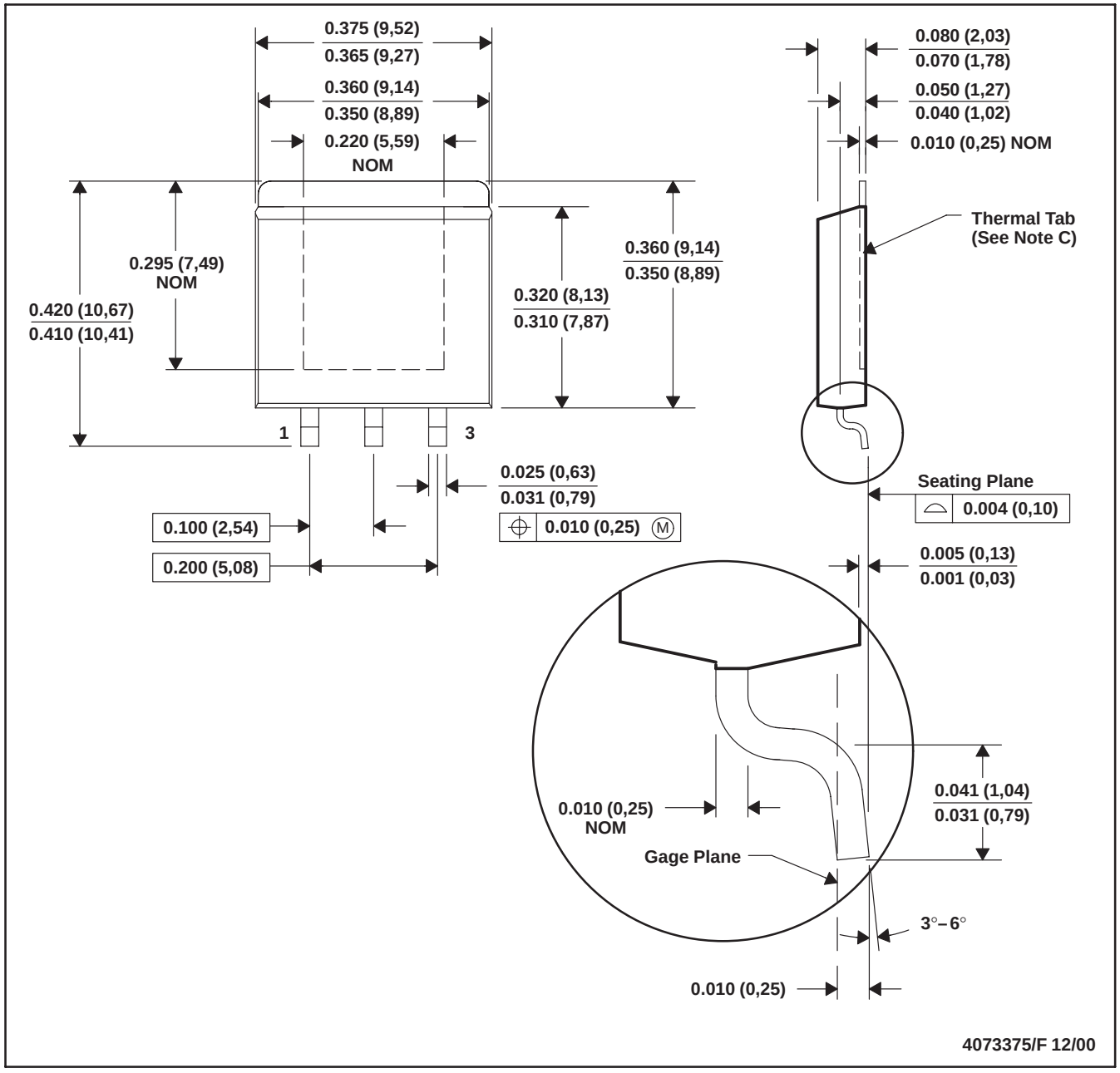
DRJ (S–PDSO–N8) PLASTIC SMALL OUTLINE



NOTES:
A. All linear dimensions are in millimeters. Dimensioning and tolerancing per ASME Y14.5M–1994.
B. This drawing is subject to change without notice.
C. SON (Small Outline No–Lead) package configuration.
D. The package thermal pad must be soldered to the board for thermal and mechanical performance. See the Product Data Sheet for details regarding the exposed thermal pad dimensions.
E. Package complies to JEDEC MO–229 variation WGGB.

MPFM001E – OCTOBER 1994 – REVISED JANUARY 2001

KTE (R-PSFM-G3) **PowerFLEX™ PLASTIC FLANGE-MOUNT**

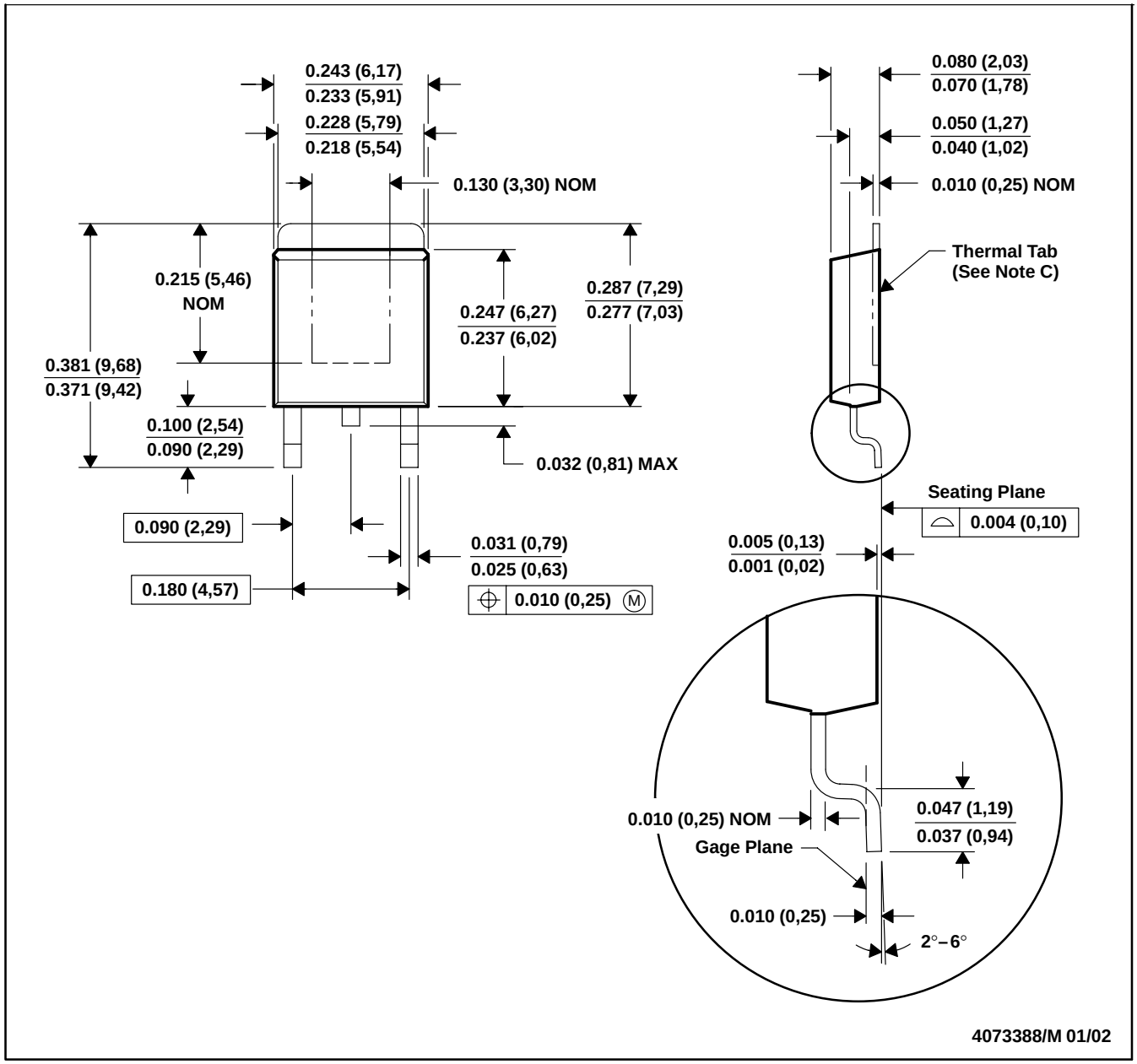


NOTES: A. All linear dimensions are in inches (millimeters).
B. This drawing is subject to change without notice.
C. The center lead is in electrical contact with the thermal tab.
D. Dimensions do not include mold protrusions, not to exceed 0.006 (0,15).
E. Falls within JEDEC MO-169

PowerFLEX is a trademark of Texas Instruments.

MPSF001F – JANUARY 1996 – REVISED JANUARY 2002

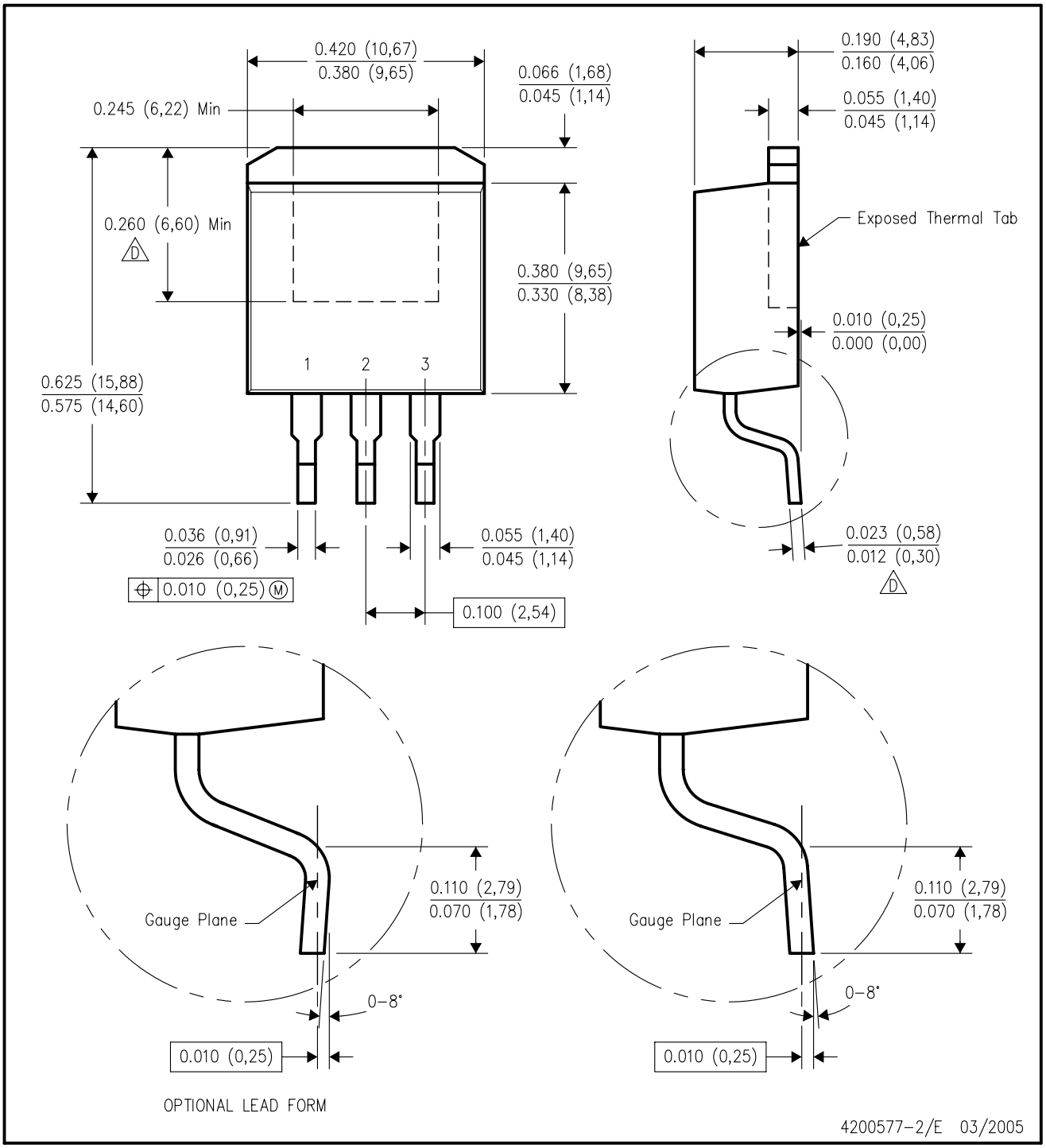
KTP (R-PSFM-G2) **PowerFLEX™ PLASTIC FLANGE-MOUNT PACKAGE**



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.

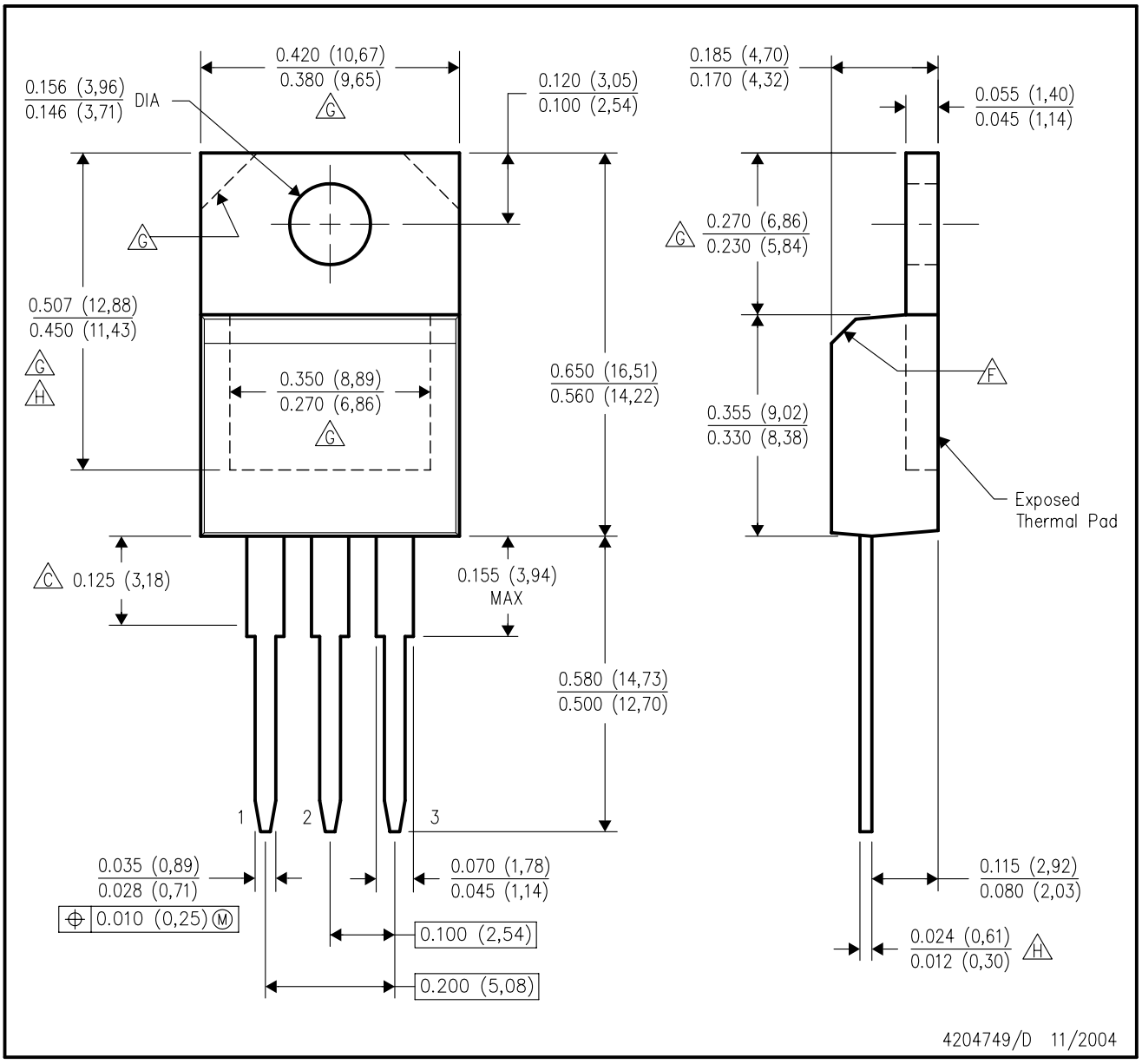
PowerFLEX is a trademark of Texas Instruments.

KTT (R–PSFM–G3) PLASTIC FLANGE–MOUNT PACKAGE



NOTES:
A. All linear dimensions are in inches (millimeters).
B. This drawing is subject to change without notice.
C. Body dimensions do not include mold flash or protrusion. Mold flash or protrusion not to exceed 0.005 (0,13) per side.
D. Falls within JEDEC TO–263 variation AA, except minimum lead thickness and minimum exposed pad length.

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.

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		Wireless	www.ti.com/wireless

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