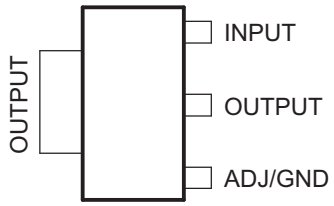
ADJUSTABLE AND FIXED LOW-DROPOUT VOLTAGE REGULATOR

Check for Samples: TLV1117

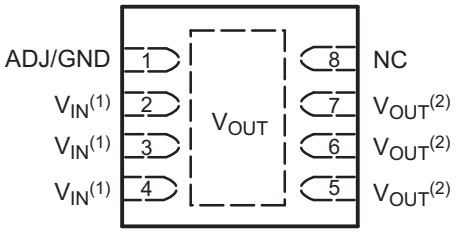
FEATURES

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

DCY (SOT-223) PACKAGE
(TOP VIEW)

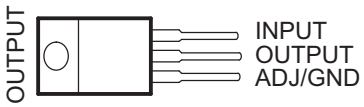


DRJ (QFN) PACKAGE
(TOP VIEW)

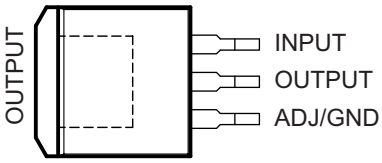


(1) V_{IN} pins (2, 3, 4) must be connected together.
(2) V_{OUT} pins (5, 6, 7) must be connected together.

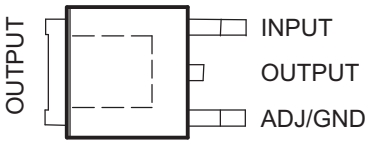
KCT / KCS (TO-220) PACKAGE
(TOP VIEW)



KTT (TO-263) 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 TLV1117 is designed to be stable with tantalum and aluminum electrolytic output capacitors having an ESR between 0.2 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.

These devices have limited built-in ESD protection. The leads should be shorted together or the device placed in conductive foam during storage or handling to prevent electrostatic damage to the MOS gates.

TLV1117C ORDERING INFORMATION(1)

T_A	V_O TYP	PACKAGE(2)		ORDERABLE PART NUMBER	TOP-SIDE MARKING
0°C to 125°C	1.5 V	QFN – DRJ	Reel of 1000	TLV1117-15CDRJR	ZYH
		SOT-223 – DCY	Tube of 80	TLV1117-15CDCY	T2
			Reel of 2500	TLV1117-15CDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-15CKVUR	ZE15
	1.8 V	QFN – DRJ	Reel of 1000	TLV1117-18CDRJR	ZYK
		SOT-223 – DCY	Tube of 80	TLV1117-18CDCY	T4
			Reel of 2500	TLV1117-18CDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-18CKVUR	ZE18
	2.5 V	QFN – DRJ	Reel of 1000	TLV1117-25CDRJR	ZYM
		SOT-223 – DCY	Tube of 80	TLV1117-25CDCY	T6
			Reel of 2500	TLV1117-25CDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-25CKVUR	ZE25
	3.3 V	QFN – DRJ	Reel of 1000	TLV1117-33CDRJR	ZYP
		SOT-223 – DCY	Tube of 80	TLV1117-33CDCY	V3
			Reel of 2500	TLV1117-33CDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-33CKVUR	ZE33
	5 V	QFN – DRJ	Reel of 1000	TLV1117-50CDRJR	ZE50
		SOT-223 – DCY	Tube of 80	TLV1117-50CDCY	VT
			Reel of 2500	TLV1117-50CDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-50CKVUR	ZE50
	ADJ	QFN – DRJ	Reel of 1000	TLV1117CDRJR	ZYS
		SOT-223 – DCY	Tube of 80	TLV1117CDCY	V4
			Reel of 2500	TLV1117CDCYR	
		TO-220 – KCS	Tube of 50	TLV1117CKCS	TLV1117C
		TO-220 – KCT	Tube of 50	TLV1117CKCT	TLV1117C
		TO-252 – KVU	Reel of 2500	TLV1117CKVUR	TV1117
		TO-263 – KTT	Reel of 500	TLV1117CKTTR	TLV1117C

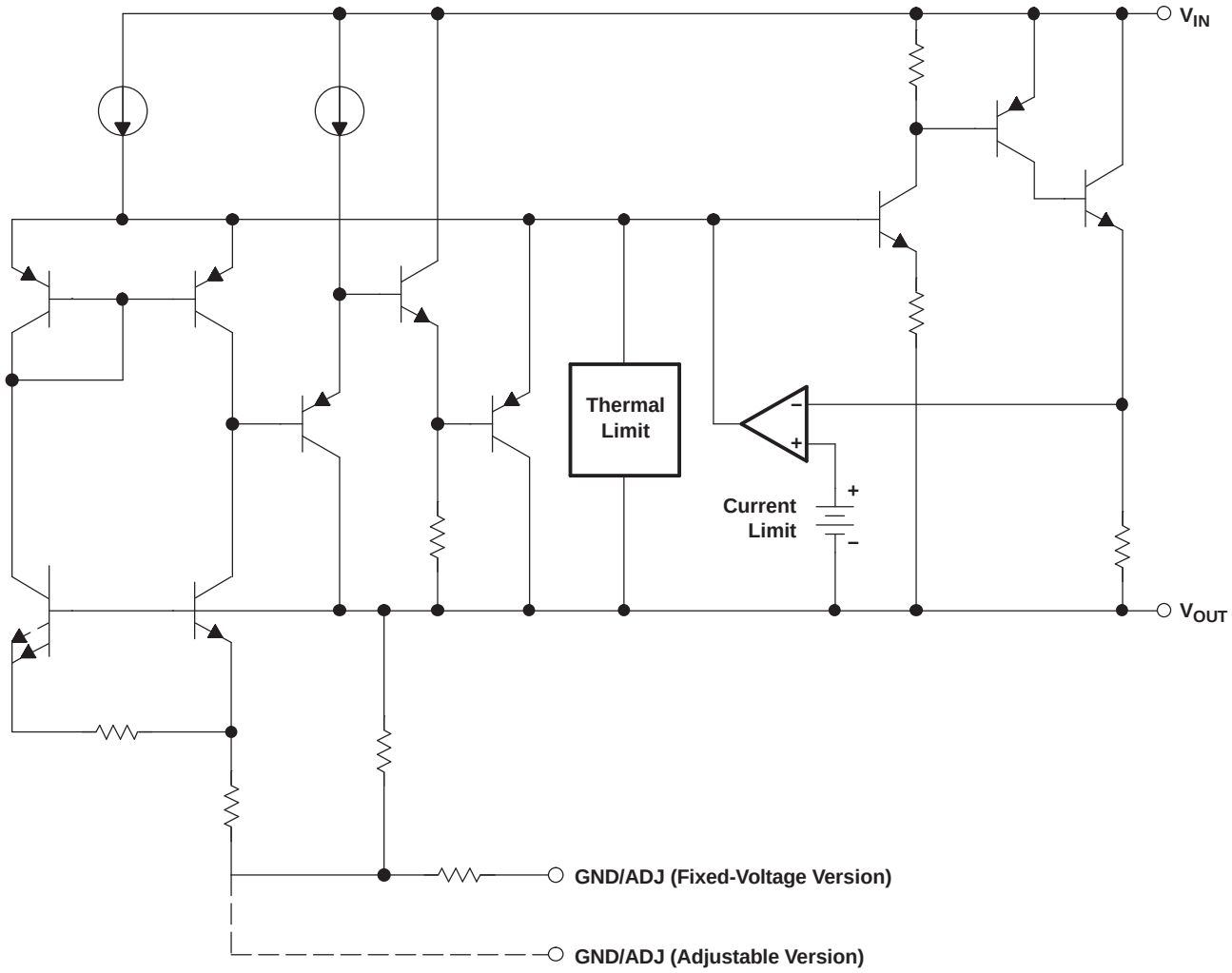
(1) For the most current package and ordering information, see the Package Option Addendum at the end of this document, or see the TI web site at www.ti.com.
(2) Package drawings, thermal data, and symbolization are available at www.ti.com/packaging.

TLV1117I ORDERING INFORMATION(1)

T_A	V_O TYP	PACKAGE(2)		ORDERABLE PART NUMBER	TOP-SIDE MARKING
–40°C to 125°C	1.5 V	QFN – DRJ	Reel of 1000	TLV1117-15IDRJR	ZYJ
		SOT-223 – DCY	Tube of 80	TLV1117-15IDCY	T3
			Reel of 2500	TLV1117-15IDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-15IKVUR	ZF15
	1.8 V	QFN – DRJ	Reel of 1000	TLV1117-18IDRJR	ZYL
		SOT-223 – DCY	Tube of 80	TLV1117-18IDCY	T5
			Reel of 2500	TLV1117-18IDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-18IKVUR	ZF18
	2.5 V	QFN – DRJ	Reel of 1000	TLV1117-25IDRJR	ZYN
		SOT-223 – DCY	Tube of 80	TLV1117-25IDCY	T8
			Reel of 2500	TLV1117-25IDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-25IKVUR	ZF25
	3.3 V	QFN – DRJ	Reel of 1000	TLV1117-33IDRJR	ZYR
		SOT-223 – DCY	Tube of 80	TLV1117-33IDCY	VS
			Reel of 2500	TLV1117-33IDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-33IKVUR	ZF33
	5 V	QFN – DRJ	Reel of 1000	TLV1117-50IDRJR	ZF50
		SOT-223 – DCY	Tube of 80	TLV1117-50IDCY	VU
			Reel of 2500	TLV1117-50IDCYR	
		TO-252 – KVU	Reel of 2500	TLV1117-50IKVUR	ZF50
	ADJ	QFN – DRJ	Reel of 1000	TLV1117IDRJR	ZYT
		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	TY1117
		TO-263 – KTT	Reel of 500	TLV1117IKTTR	TLV1117I

(1) For the most current package and ordering information, see the Package Option Addendum at the end of this document, or see the TI web site at www.ti.com.
(2) Package drawings, thermal data, and symbolization are available at www.ti.com/packaging.

FUNCTIONAL BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS(1)

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

		MIN	MAX	UNIT
V_{IN}	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.

THERMAL INFORMATION

THERMAL METRIC(1)(2)(3)		TLV1117							UNITS
		PowerFlex							
		KTE (3 PINS)	KTP (3 PINS)	DRJ (8 PINS)	DCY (4 PINS)	KVU (3 PINS)	KCS/KCT (3 PINS)	KTT (3 PINS)	
θ_{JA}	Junction-to-ambient thermal resistance	38.6	49.2	38.3	104.3	50.9	30.1	27.5	°C/W
θ_{JCtop}	Junction-to-case (top) thermal resistance	34.7	60.6	36.5	53.7	57.9	44.6	43.2	
θ_{JB}	Junction-to-board thermal resistance	3.2	3.1	60.5	5.7	34.8	1.2	17.3	
ψ_{JT}	Junction-to-top characterization parameter	5.9	8.7	0.2	3.1	6	5	2.8	
ψ_{JB}	Junction-to-board characterization parameter	3.1	3	12	5.5	23.7	1.2	9.3	
θ_{JCbot}	Junction-to-case (bottom) thermal resistance	3	3	4.7	n/a	0.4	0.4	0.3	
θ_{JP}	Thermal resistance between the die junction and the bottom of the exposed pad.	2.7	1.4	1.78	n/a	n/a	3	1.94	

(1) For more information about traditional and new thermal metrics, see the *IC Package Thermal Metrics* application report, SPRA953.
(2) For thermal estimates of this device based on PCB copper area, see the TI PCB Thermal Calculator.
(3) 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 $P_D = (T_J(max) – T_A)/\theta J_A$. Operating at the absolute maximum T_J of 150°C can affect reliability.

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:
$V_{IN(min)} = V_{OUT(max)} + V_{DO(max\ at\ rated\ current)}$

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	4.950	5.0	5.050	
	V_{IN} = 6.5 V to 12 V, I_{OUT} = 0 to 800 mA		4.900	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} ≤ 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

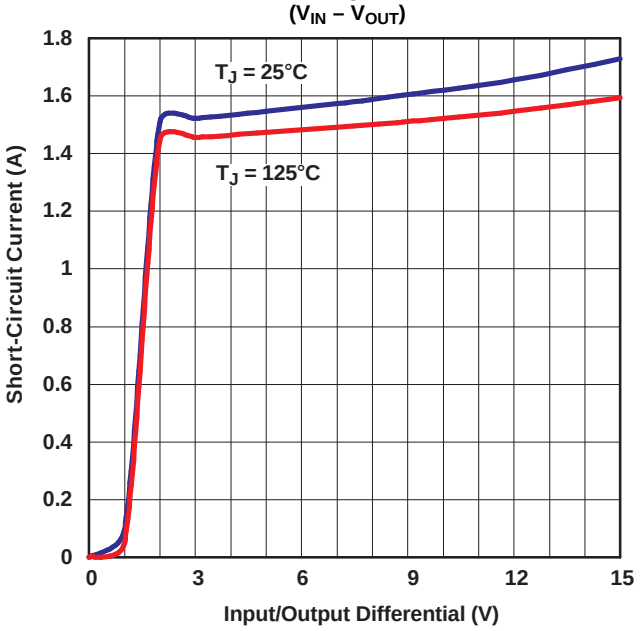
T_J = –40°C to 125°C, all typical values are at T_J = 25°C (unless otherwise noted)

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		1.200	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		4.80	5.0	5.20	
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		%

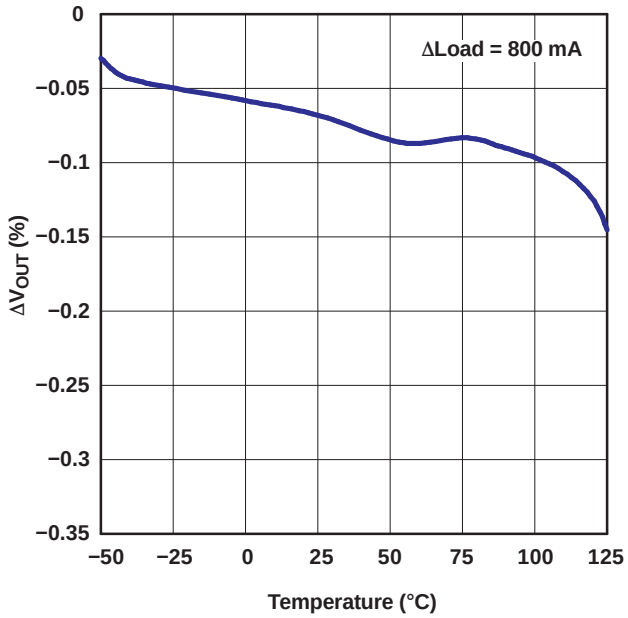
(1) All characteristics are measured with a 10-µF capacitor across the input and a 10-µF capacitor across the output. Pulse testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible.
(2) Dropout is defined as the V_{IN} to V_{OUT} differential at 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

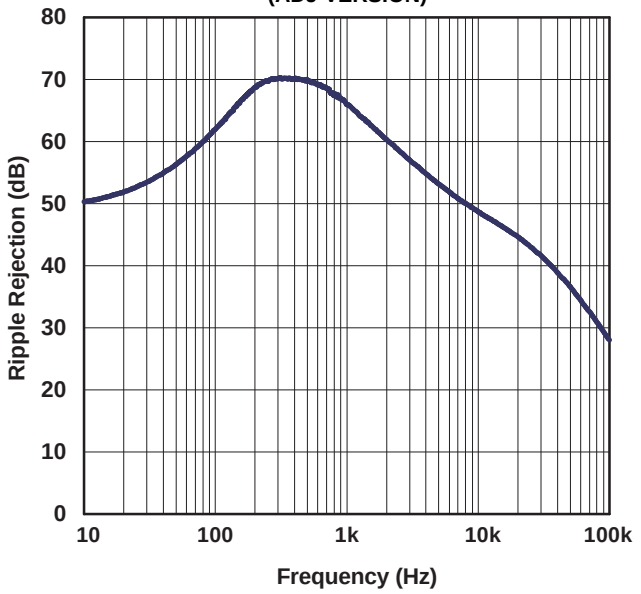
SHORT-CIRCUIT CURRENT vs (V_{IN} – V_{OUT})



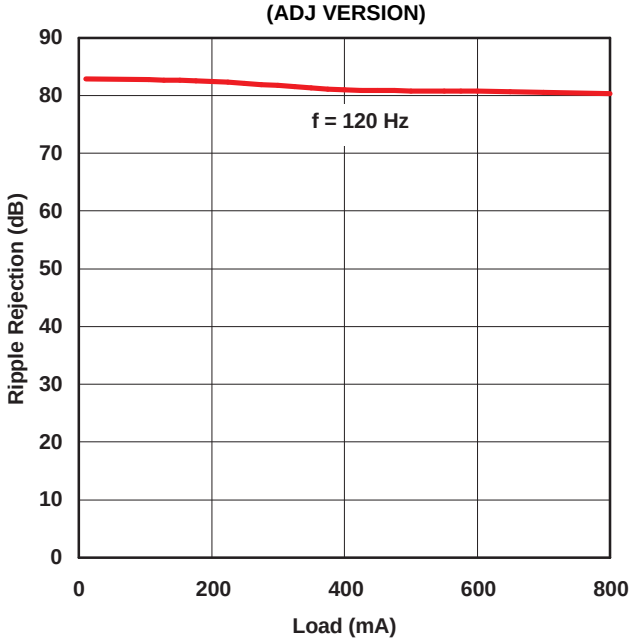
LOAD REGULATION



RIPPLE REJECTION vs FREQUENCY (ADJ VERSION)

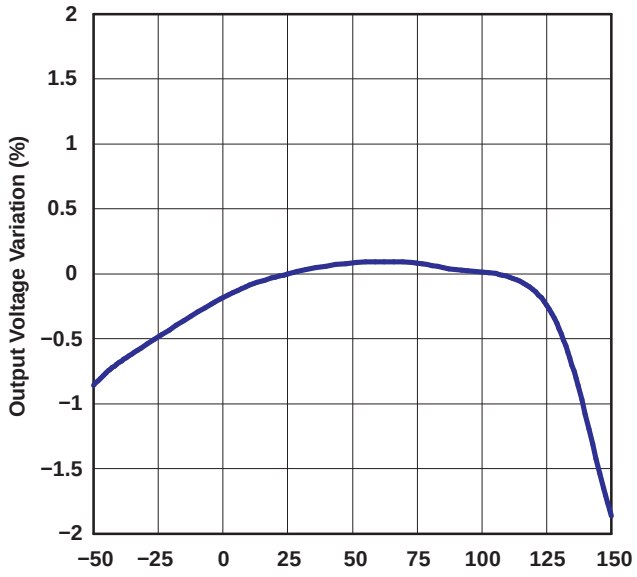


RIPPLE REJECTION vs LOAD CURRENT (ADJ VERSION)

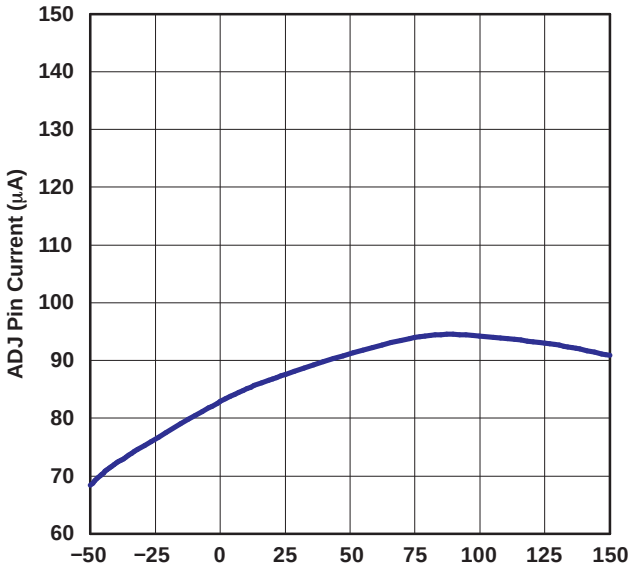


TYPICAL CHARACTERISTICS (continued)

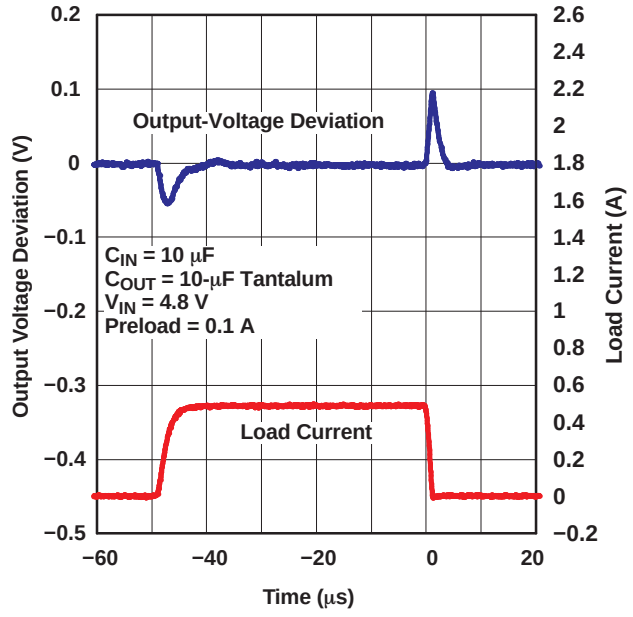
TEMPERATURE STABILITY



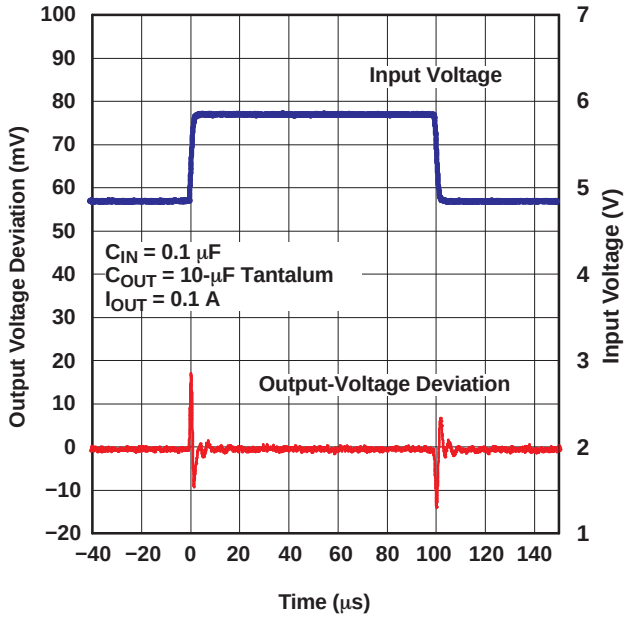
ADJ PIN CURRENT vs TEMPERATURE



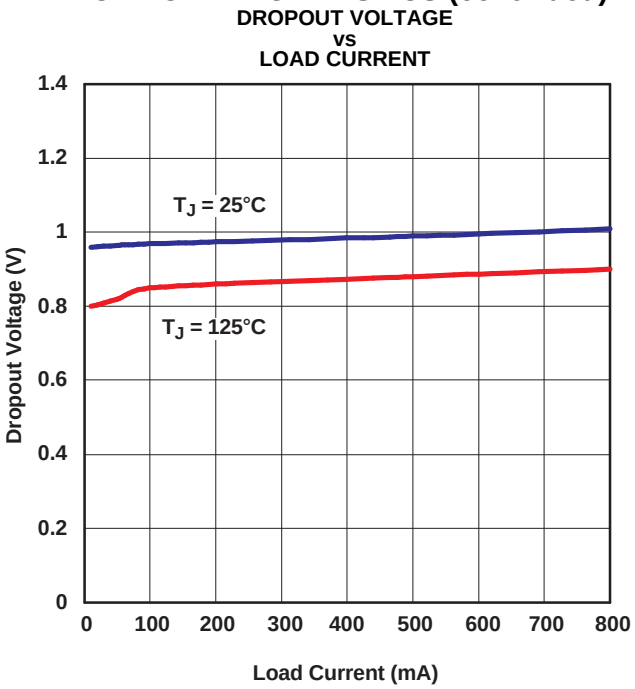
TLV1117-33 LOAD TRANSIENT RESPONSE



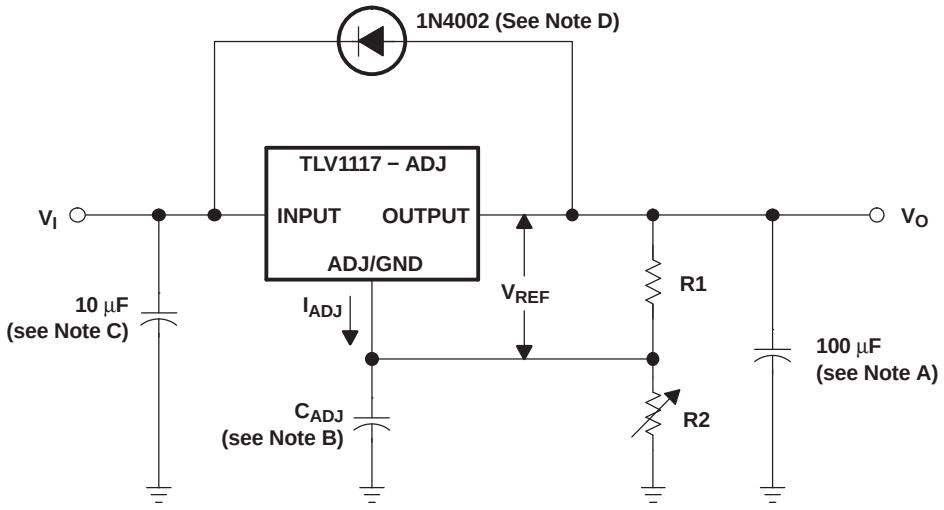
TLV1117-33 LINE TRANSIENT RESPONSE



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 tantalum and aluminum electrolytic output capacitors having an ESR between 0.2 Ω and 10 Ω.

Figure 1. Basic Adjustable Regulator

REVISION HISTORY

Changes from Revision J (April 2013) to Revision K	Page
• Added additional package options.	1

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
TLV1117-15CDCY	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	T2	Samples
TLV1117-15CDCYR	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	T2	Samples
TLV1117-15CDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	T2	Samples
TLV1117-15CDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	0 to 125	ZYH	Samples
TLV1117-15IDCY	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	T3	Samples
TLV1117-15IDCYR	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	T3	Samples
TLV1117-15IKVURG3	ACTIVE	TO-252	KVU	3	2500	Green (RoHS & no Sb/Br)	CU SN	Level-3-260C-168 HR	-40 to 125	ZF15	Samples
TLV1117-18CDCY	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	T4	Samples
TLV1117-18CDCYG3	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	T4	Samples
TLV1117-18CDCYR	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	T4	Samples
TLV1117-18CDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	T4	Samples
TLV1117-18CDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	0 to 125	ZYK	Samples
TLV1117-18CKVURG3	ACTIVE	TO-252	KVU	3	2500	Green (RoHS & no Sb/Br)	CU SN	Level-3-260C-168 HR	0 to 125	ZE18	Samples
TLV1117-18IDCY	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	T5	Samples
TLV1117-18IDCYG3	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	T5	Samples
TLV1117-18IDCYR	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	T5	Samples
TLV1117-18IDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	T5	Samples

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
TLV1117-18IDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 125	ZYL	Samples
TLV1117-18IKVURG3	ACTIVE	TO-252	KVU	3	2500	Green (RoHS & no Sb/Br)	CU SN	Level-3-260C-168 HR	-40 to 125	ZF18	Samples
TLV1117-25CDCY	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	T6	Samples
TLV1117-25CDCYR	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	T6	Samples
TLV1117-25CDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	T6	Samples
TLV1117-25CKVURG3	ACTIVE	TO-252	KVU	3	2500	Green (RoHS & no Sb/Br)	CU SN	Level-3-260C-168 HR	0 to 125	ZE25	Samples
TLV1117-25IDCY	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	T8	Samples
TLV1117-25IDCYR	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	T8	Samples
TLV1117-25IDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 125	ZYN	Samples
TLV1117-25IKCS	PREVIEW	TO-220	KCS	3	50	TBD	Call TI	Call TI	-40 to 125		
TLV1117-33CDCY	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	V3	Samples
TLV1117-33CDCYG3	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	V3	Samples
TLV1117-33CDCYR	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	V3	Samples
TLV1117-33CDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	V3	Samples
TLV1117-33CDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	0 to 125	ZYP	Samples
TLV1117-33CKVURG3	ACTIVE	TO-252	KVU	3	2500	Green (RoHS & no Sb/Br)	CU SN	Level-3-260C-168 HR	0 to 125	ZE33	Samples
TLV1117-33IDCY	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	(V3 ~ VS)	Samples
TLV1117-33IDCYG3	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	(V3 ~ VS)	Samples

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
TLV1117-33IDCYR	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	VS	Samples
TLV1117-33IDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	VS	Samples
TLV1117-33IDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 125	ZYR	Samples
TLV1117-33IDRJRG4	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 125	ZYR	Samples
TLV1117-33IKVURG3	ACTIVE	TO-252	KVU	3	2500	Green (RoHS & no Sb/Br)	CU SN	Level-3-260C-168 HR	-40 to 125	ZF33	Samples
TLV1117-50CDCY	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	VT	Samples
TLV1117-50CDCYG3	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	VT	Samples
TLV1117-50CDCYR	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	VT	Samples
TLV1117-50CDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	VT	Samples
TLV1117-50CDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	0 to 125	ZE50	Samples
TLV1117-50CDRJRG4	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	0 to 125	ZE50	Samples
TLV1117-50CKVURG3	ACTIVE	TO-252	KVU	3	2500	Green (RoHS & no Sb/Br)	CU SN	Level-3-260C-168 HR	0 to 125	ZE50	Samples
TLV1117-50IDCY	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	VU	Samples
TLV1117-50IDCYR	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	VU	Samples
TLV1117-50IDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	VU	Samples
TLV1117-50IDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 125	ZF50	Samples
TLV1117-50IDRJRG4	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 125	ZF50	Samples
TLV1117-50IKVURG3	ACTIVE	TO-252	KVU	3	2500	Green (RoHS & no Sb/Br)	CU SN	Level-3-260C-168 HR	-40 to 125	ZF50	Samples

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
TLV1117CDCY	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	V4	Samples
TLV1117CDCYG3	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	V4	Samples
TLV1117CDCYR	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	V4	Samples
TLV1117CDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	0 to 125	V4	Samples
TLV1117CDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	0 to 125	ZYS	Samples
TLV1117CKCS	ACTIVE	TO-220	KCS	3	50	Pb-Free (RoHS)	CU SN	N / A for Pkg Type	0 to 125	TLV1117C	Samples
TLV1117CKCSE3	ACTIVE	TO-220	KCS	3	50	Pb-Free (RoHS)	CU SN	N / A for Pkg Type	0 to 125	TLV1117C	Samples
TLV1117CKCT	ACTIVE	TO-220	KCT	3	50	Pb-Free (RoHS)	CU SN	N / A for Pkg Type	0 to 125	TLV1117C	Samples
TLV1117CKTER	OBSOLETE	PFM	KTE	3		TBD	Call TI	Call TI	0 to 125	TLV1117C	
TLV1117CKTPR	OBSOLETE	PFM	KTP	2		TBD	Call TI	Call TI	0 to 125	TV1117	
TLV1117CKTPRG3	OBSOLETE	PFM	KTP	2		TBD	Call TI	Call TI	0 to 125	TV1117	
TLV1117CKTTR	ACTIVE	DDPAK/ TO-263	KTT	3	500	Green (RoHS & no Sb/Br)	CU SN	Level-3-245C-168 HR	0 to 125	TLV1117C	Samples
TLV1117CKTTRG3	ACTIVE	DDPAK/ TO-263	KTT	3	500	Green (RoHS & no Sb/Br)	CU SN	Level-3-245C-168 HR	0 to 125	TLV1117C	Samples
TLV1117CKVURG3	ACTIVE	TO-252	KVU	3	2500	Green (RoHS & no Sb/Br)	CU SN	Level-3-260C-168 HR	0 to 125	TV1117	Samples
TLV1117IDCY	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	V2	Samples
TLV1117IDCYG3	ACTIVE	SOT-223	DCY	4	80	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	V2	Samples
TLV1117IDCYR	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	V2	Samples
TLV1117IDCYRG3	ACTIVE	SOT-223	DCY	4	2500	Green (RoHS & no Sb/Br)	CU SN	Level-2-260C-1 YEAR	-40 to 125	V2	Samples
TLV1117IDRJR	ACTIVE	SON	DRJ	8	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 125	ZYT	Samples

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
TLV1117IKCS	ACTIVE	TO-220	KCS	3	50	Pb-Free (RoHS)	CU SN	N / A for Pkg Type	-40 to 125	TLV1117I	Samples
TLV1117IKCSE3	ACTIVE	TO-220	KCS	3	50	Pb-Free (RoHS)	CU SN	N / A for Pkg Type	-40 to 125	TLV1117I	Samples
TLV1117IKTER	OBSOLETE	PFM	KTE	3		TBD	Call TI	Call TI	-40 to 125	TLV1117I	
TLV1117IKTPR	OBSOLETE	PFM	KTP	2		TBD	Call TI	Call TI	-40 to 125	TY1117	
TLV1117IKTPRG3	OBSOLETE	PFM	KTP	2		TBD	Call TI	Call TI	-40 to 125	TY1117	
TLV1117IKTTR	ACTIVE	DDPAK/ TO-263	KTT	3	500	Green (RoHS & no Sb/Br)	CU SN	Level-3-245C-168 HR	-40 to 125	TLV1117I	Samples
TLV1117IKTTRG3	ACTIVE	DDPAK/ TO-263	KTT	3	500	Green (RoHS & no Sb/Br)	CU SN	Level-3-245C-168 HR	-40 to 125	TLV1117I	Samples
TLV1117IKVURG3	ACTIVE	TO-252	KVU	3	2500	Green (RoHS & no Sb/Br)	CU SN	Level-3-260C-168 HR	-40 to 125	TY1117	Samples

(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.

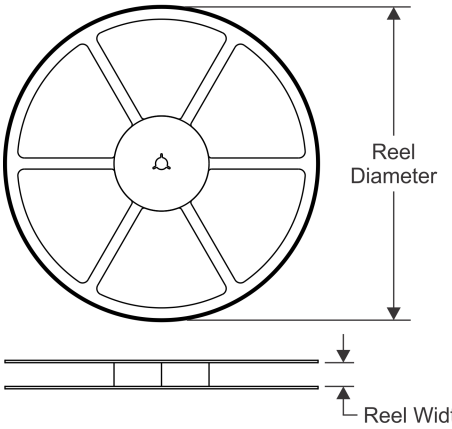
(4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

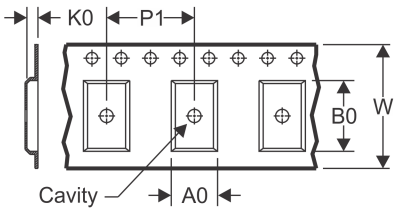
(6) Lead/Ball Finish - Orderable Devices may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead/Ball Finish values may wrap to two lines if the finish value exceeds the maximum column width.

TAPE AND REEL INFORMATION

REEL DIMENSIONS

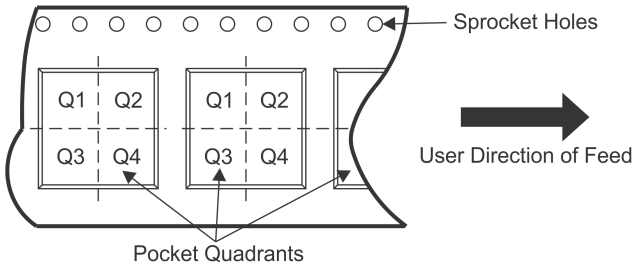


TAPE DIMENSIONS



A0	Dimension designed to accommodate the component width
B0	Dimension designed to accommodate the component length
K0	Dimension designed to accommodate the component thickness
W	Overall width of the carrier tape
P1	Pitch between successive cavity centers

QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE

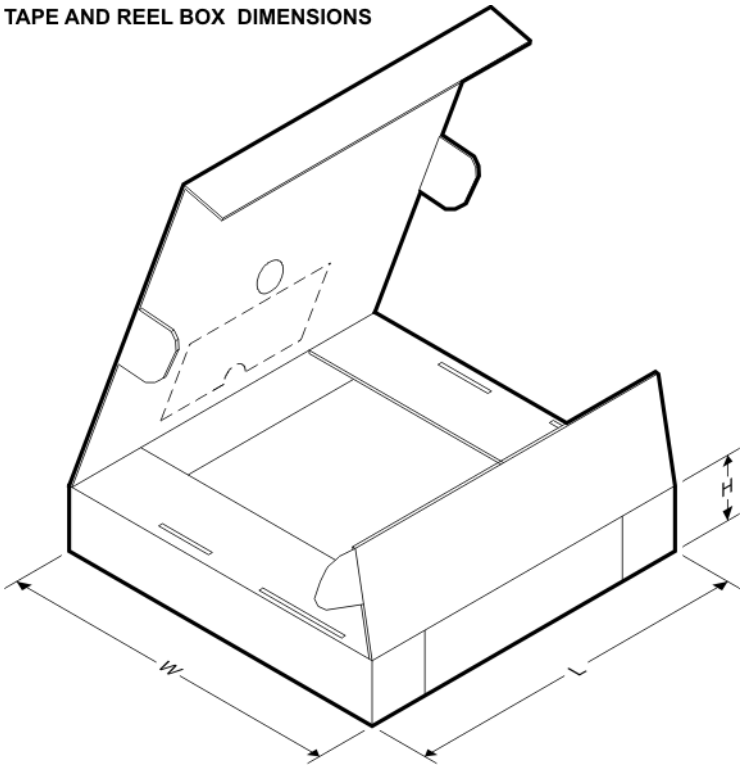


*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
TLV1117-15CDCYR	SOT-223	DCY	4	2500	330.0	12.4	7.05	7.4	1.9	8.0	12.0	Q3
TLV1117-15CDRJR	SON	DRJ	8	1000	180.0	12.4	4.25	4.25	1.15	8.0	12.0	Q2
TLV1117-15IDCYR	SOT-223	DCY	4	2500	330.0	12.4	7.05	7.4	1.9	8.0	12.0	Q3
TLV1117-15IKVURG3	TO-252	KVU	3	2500	330.0	16.4	6.9	10.5	2.7	8.0	16.0	Q2
TLV1117-18CDRJR	SON	DRJ	8	1000	180.0	12.4	4.25	4.25	1.15	8.0	12.0	Q2
TLV1117-18CKVURG3	TO-252	KVU	3	2500	330.0	16.4	6.9	10.5	2.7	8.0	16.0	Q2
TLV1117-18IDRJR	SON	DRJ	8	1000	180.0	12.4	4.25	4.25	1.15	8.0	12.0	Q2
TLV1117-18IKVURG3	TO-252	KVU	3	2500	330.0	16.4	6.9	10.5	2.7	8.0	16.0	Q2
TLV1117-25CDCYR	SOT-223	DCY	4	2500	330.0	12.4	7.05	7.4	1.9	8.0	12.0	Q3
TLV1117-25CKVURG3	TO-252	KVU	3	2500	330.0	16.4	6.9	10.5	2.7	8.0	16.0	Q2
TLV1117-25IDCYR	SOT-223	DCY	4	2500	330.0	12.4	7.05	7.4	1.9	8.0	12.0	Q3
TLV1117-25IDRJR	SON	DRJ	8	1000	180.0	12.4	4.25	4.25	1.15	8.0	12.0	Q2
TLV1117-33CDCYR	SOT-223	DCY	4	2500	330.0	12.4	7.05	7.4	1.9	8.0	12.0	Q3
TLV1117-33CDRJR	SON	DRJ	8	1000	180.0	12.4	4.25	4.25	1.15	8.0	12.0	Q2
TLV1117-33CKVURG3	TO-252	KVU	3	2500	330.0	16.4	6.9	10.5	2.7	8.0	16.0	Q2
TLV1117-33IDCYR	SOT-223	DCY	4	2500	330.0	12.4	7.05	7.4	1.9	8.0	12.0	Q3
TLV1117-33IDRJR	SON	DRJ	8	1000	180.0	12.4	4.25	4.25	1.15	8.0	12.0	Q2
TLV1117-33IKVURG3	TO-252	KVU	3	2500	330.0	16.4	6.9	10.5	2.7	8.0	16.0	Q2

Device	Package Type	Package Drawing	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
TLV1117-50CDCYR	SOT-223	DCY	4	2500	330.0	12.4	7.05	7.4	1.9	8.0	12.0	Q3
TLV1117-50CDRJR	SON	DRJ	8	1000	180.0	12.4	4.25	4.25	1.15	8.0	12.0	Q2
TLV1117-50CKVURG3	TO-252	KVU	3	2500	330.0	16.4	6.9	10.5	2.7	8.0	16.0	Q2
TLV1117-50IDCYR	SOT-223	DCY	4	2500	330.0	12.4	7.05	7.4	1.9	8.0	12.0	Q3
TLV1117-50IDRJR	SON	DRJ	8	1000	180.0	12.4	4.25	4.25	1.15	8.0	12.0	Q2
TLV1117-50IKVURG3	TO-252	KVU	3	2500	330.0	16.4	6.9	10.5	2.7	8.0	16.0	Q2
TLV1117CDRJR	SON	DRJ	8	1000	180.0	12.4	4.25	4.25	1.15	8.0	12.0	Q2
TLV1117CKTTR	DDPAK/ TO-263	KTT	3	500	330.0	24.4	10.8	16.3	5.11	16.0	24.0	Q2
TLV1117CKVURG3	TO-252	KVU	3	2500	330.0	16.4	6.9	10.5	2.7	8.0	16.0	Q2
TLV1117IDRJR	SON	DRJ	8	1000	180.0	12.4	4.25	4.25	1.15	8.0	12.0	Q2
TLV1117IKTTR	DDPAK/ TO-263	KTT	3	500	330.0	24.4	10.8	16.3	5.11	16.0	24.0	Q2
TLV1117IKVURG3	TO-252	KVU	3	2500	330.0	16.4	6.9	10.5	2.7	8.0	16.0	Q2

TAPE AND REEL BOX DIMENSIONS



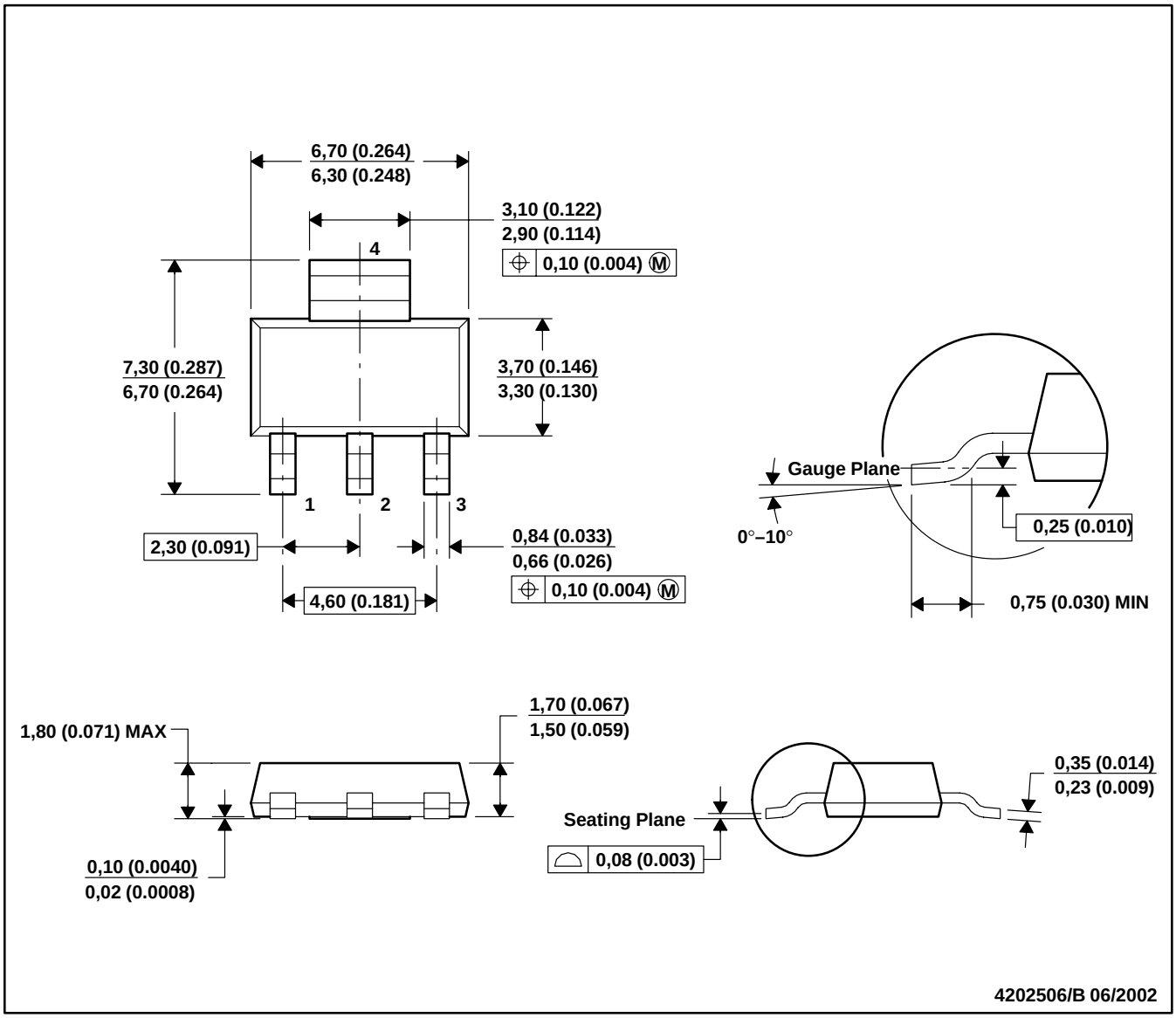
*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
TLV1117-15CDCYR	SOT-223	DCY	4	2500	340.0	340.0	38.0
TLV1117-15CDRJR	SON	DRJ	8	1000	210.0	185.0	35.0
TLV1117-15IDCYR	SOT-223	DCY	4	2500	340.0	340.0	38.0

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
TLV1117-15IKVURG3	TO-252	KVU	3	2500	340.0	340.0	38.0
TLV1117-18CDRJR	SON	DRJ	8	1000	210.0	185.0	35.0
TLV1117-18CKVURG3	TO-252	KVU	3	2500	340.0	340.0	38.0
TLV1117-18IDRJR	SON	DRJ	8	1000	210.0	185.0	35.0
TLV1117-18IKVURG3	TO-252	KVU	3	2500	340.0	340.0	38.0
TLV1117-25CDCYR	SOT-223	DCY	4	2500	340.0	340.0	38.0
TLV1117-25CKVURG3	TO-252	KVU	3	2500	340.0	340.0	38.0
TLV1117-25IDCYR	SOT-223	DCY	4	2500	340.0	340.0	38.0
TLV1117-25IDRJR	SON	DRJ	8	1000	210.0	185.0	35.0
TLV1117-33CDCYR	SOT-223	DCY	4	2500	340.0	340.0	38.0
TLV1117-33CDRJR	SON	DRJ	8	1000	210.0	185.0	35.0
TLV1117-33CKVURG3	TO-252	KVU	3	2500	340.0	340.0	38.0
TLV1117-33IDCYR	SOT-223	DCY	4	2500	340.0	340.0	38.0
TLV1117-33IDRJR	SON	DRJ	8	1000	210.0	185.0	35.0
TLV1117-33IKVURG3	TO-252	KVU	3	2500	340.0	340.0	38.0
TLV1117-50CDCYR	SOT-223	DCY	4	2500	340.0	340.0	38.0
TLV1117-50CDRJR	SON	DRJ	8	1000	210.0	185.0	35.0
TLV1117-50CKVURG3	TO-252	KVU	3	2500	340.0	340.0	38.0
TLV1117-50IDCYR	SOT-223	DCY	4	2500	340.0	340.0	38.0
TLV1117-50IDRJR	SON	DRJ	8	1000	210.0	185.0	35.0
TLV1117-50IKVURG3	TO-252	KVU	3	2500	340.0	340.0	38.0
TLV1117CDRJR	SON	DRJ	8	1000	210.0	185.0	35.0
TLV1117CKTTR	DDPAK/TO-263	KTT	3	500	340.0	340.0	38.0
TLV1117CKVURG3	TO-252	KVU	3	2500	340.0	340.0	38.0
TLV1117IDRJR	SON	DRJ	8	1000	210.0	185.0	35.0
TLV1117IKTTR	DDPAK/TO-263	KTT	3	500	340.0	340.0	38.0
TLV1117IKVURG3	TO-252	KVU	3	2500	340.0	340.0	38.0

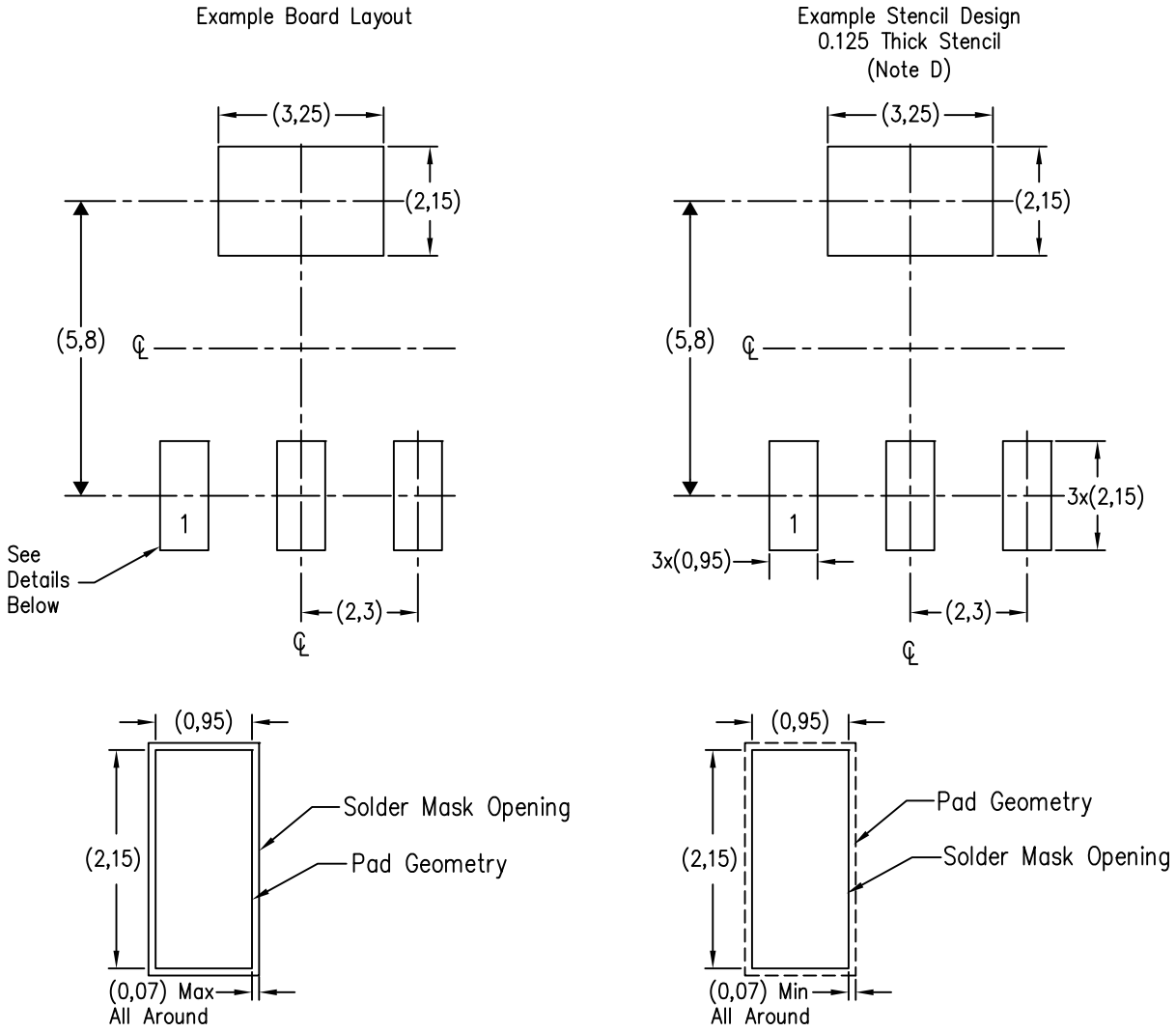
MPDS094A – APRIL 2001 – REVISED JUNE 2002

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.

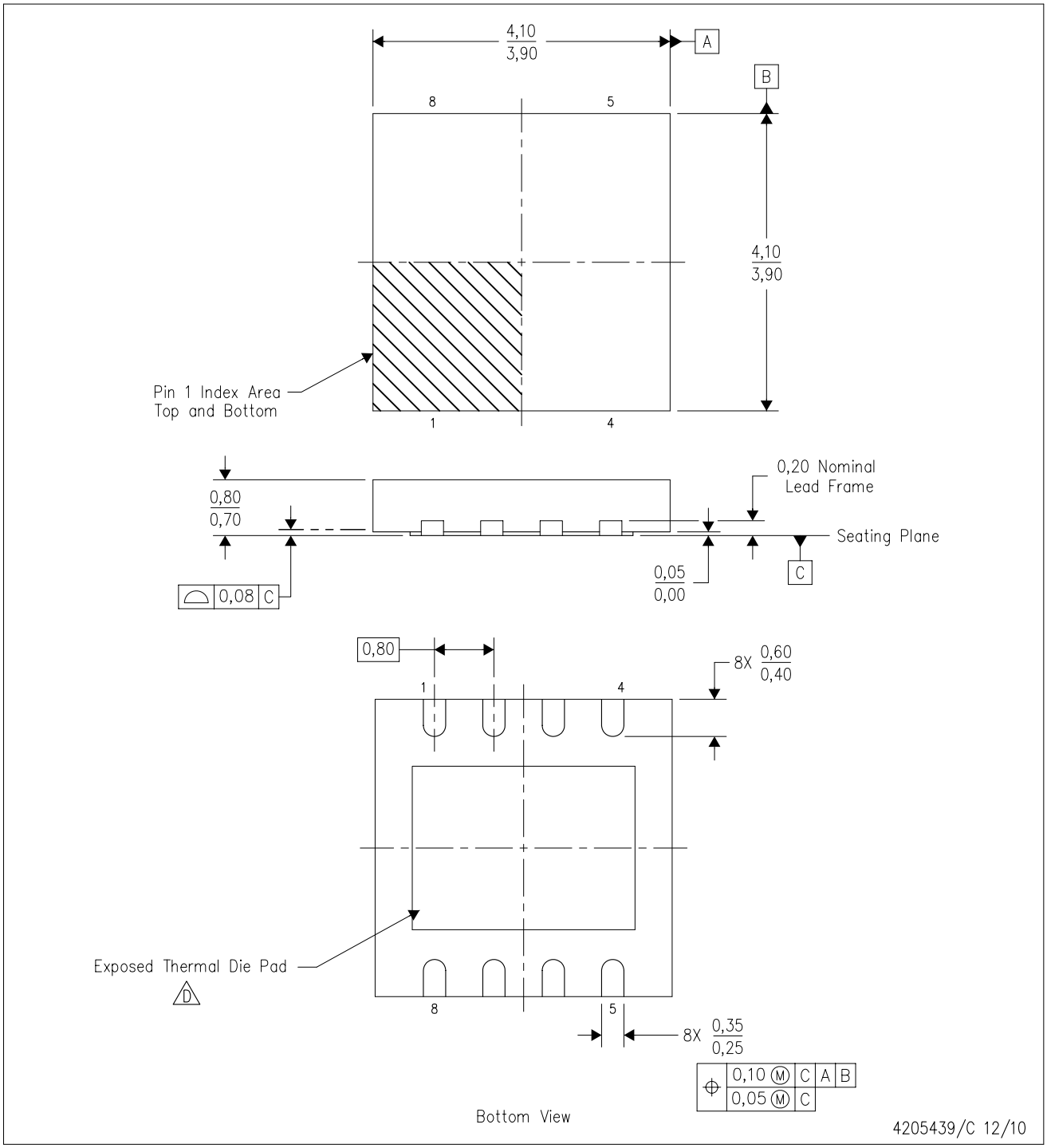
DCY (R–PDSO–G4) PLASTIC SMALL OUTLINE



NOTES:

A. All linear dimensions are in millimeters.
B. This drawing is subject to change without notice.
C. Publication IPC–7351 is recommended for alternate designs.
D. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil recommendations. Refer to IPC 7525 for stencil design considerations.

DRJ (S–PWSON–N8) PLASTIC SMALL OUTLINE NO–LEAD



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.

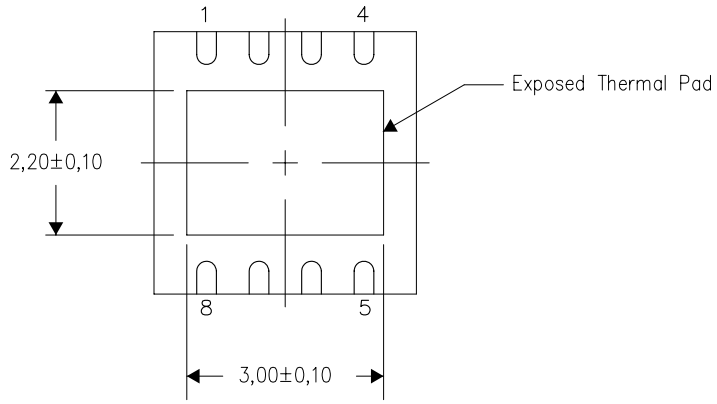
DRJ (S–PWSON–N8) PLASTIC SMALL OUTLINE NO–LEAD

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). After soldering, the PCB can be used as a heatsink. In addition, through the use of thermal vias, the thermal pad can be attached directly to the appropriate copper plane shown in the electrical schematic for the device, or alternatively, can be attached to a 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, QFN/SON PCB Attachment, Texas Instruments Literature No. SLUA271. This document is available at www.ti.com.

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



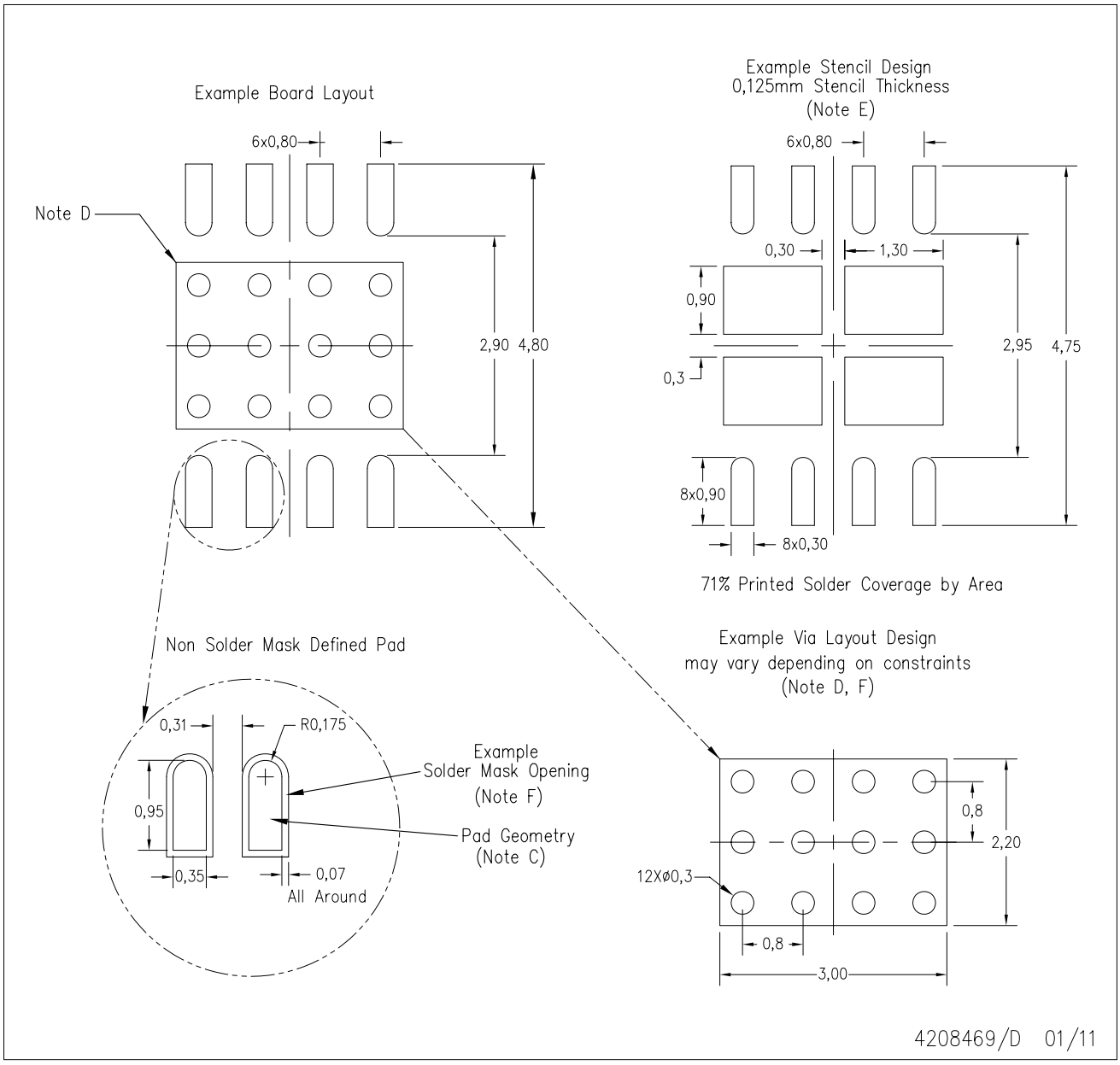
Bottom View

Exposed Thermal Pad Dimensions

4206882/F 01/11

NOTE: All linear dimensions are in millimeters

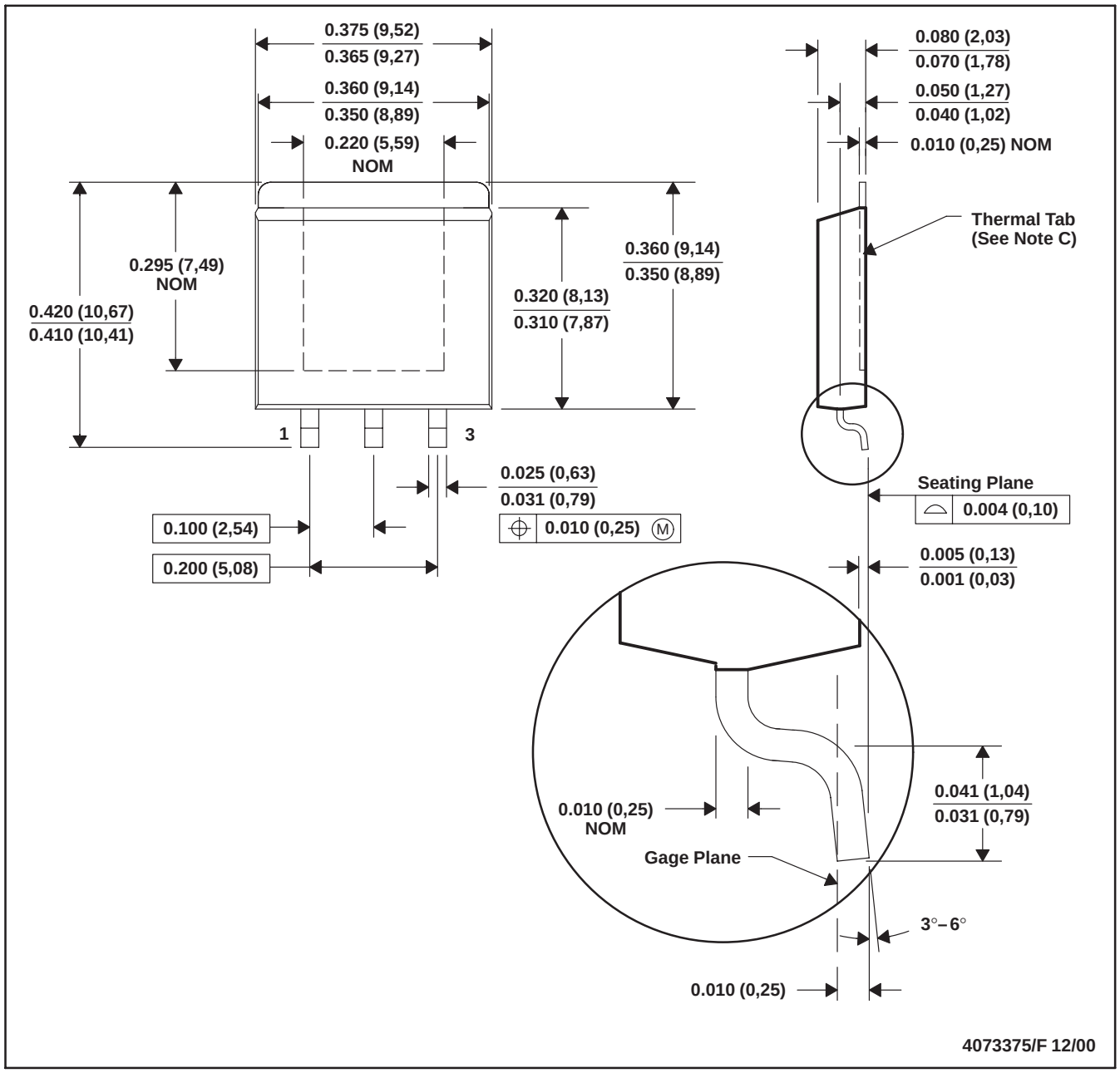
DRJ (S–PWSON–N8) SMALL PACKAGE OUTLINE NO–LEAD



NOTES:
A. All linear dimensions are in millimeters.
B. This drawing is subject to change without notice.
C. Publication IPC–7351 is recommended for alternate designs.
D. This package is designed to be soldered to a thermal pad on the board. Refer to Application Note, Quad Flat–Pack Packages, Texas Instruments Literature No. SLUA271, and also the Product Data Sheets for specific thermal information, via requirements, and recommended board layout. These documents are available at www.ti.com <http://www.ti.com>.
E. Laser cutting apertures with electropolish and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC 7525 for stencil design considerations.
F. Customers should contact their board fabrication site for solder mask tolerances and vias tenting recommendations for vias placed in the thermal pad.

MPFM001E – OCTOBER 1994 – REVISED JANUARY 2001

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

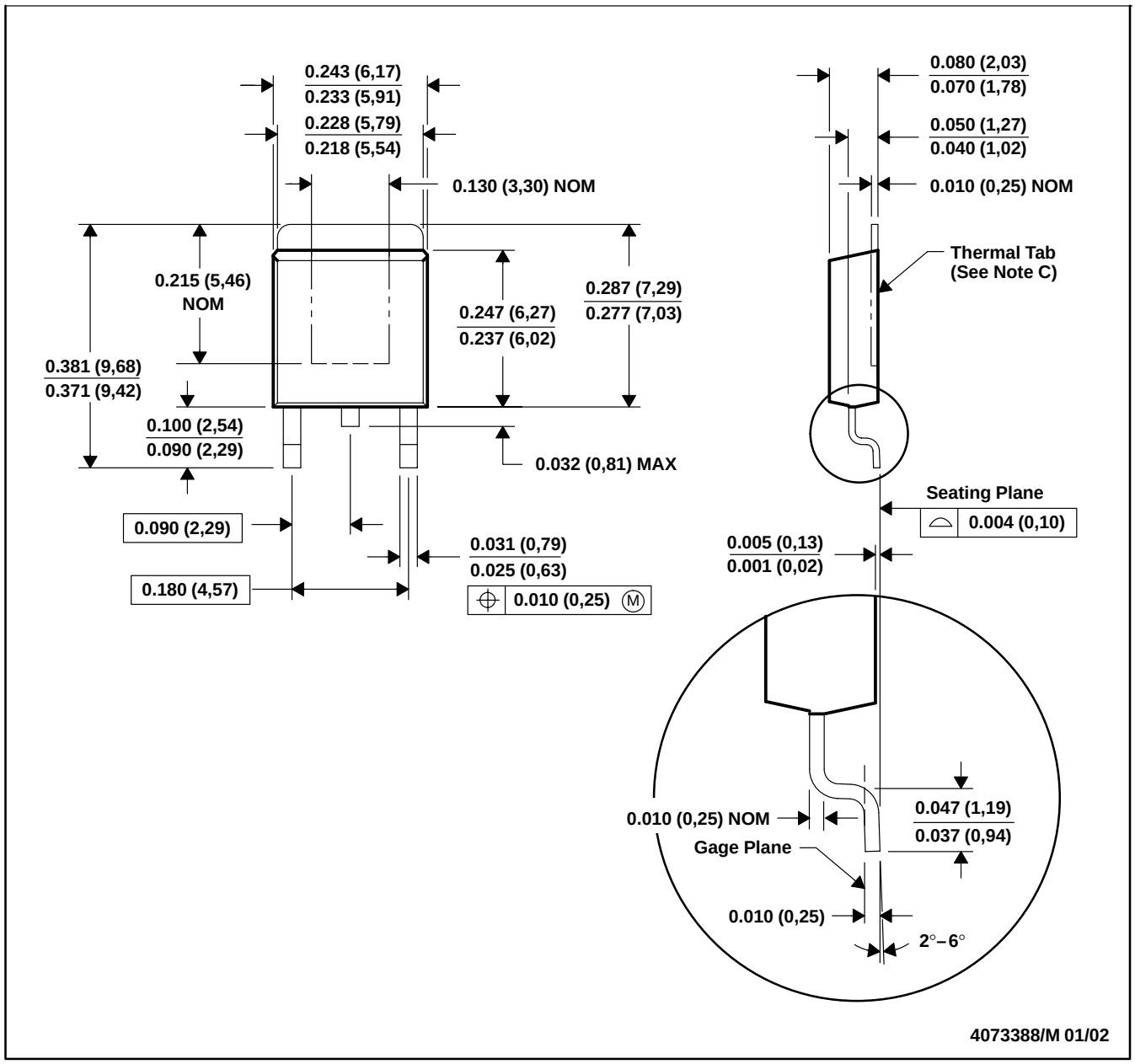


NOTES: A. All linear dimensions are in inches (millimeters).
B. This drawing is subject to change without notice.
C. The center lead is in electrical contact with the thermal tab.
D. Dimensions do not include mold protrusions, not to exceed 0.006 (0,15).
E. Falls within JEDEC MO-169

PowerFLEX is a trademark of Texas Instruments.

MPSF001F – JANUARY 1996 – REVISED JANUARY 2002

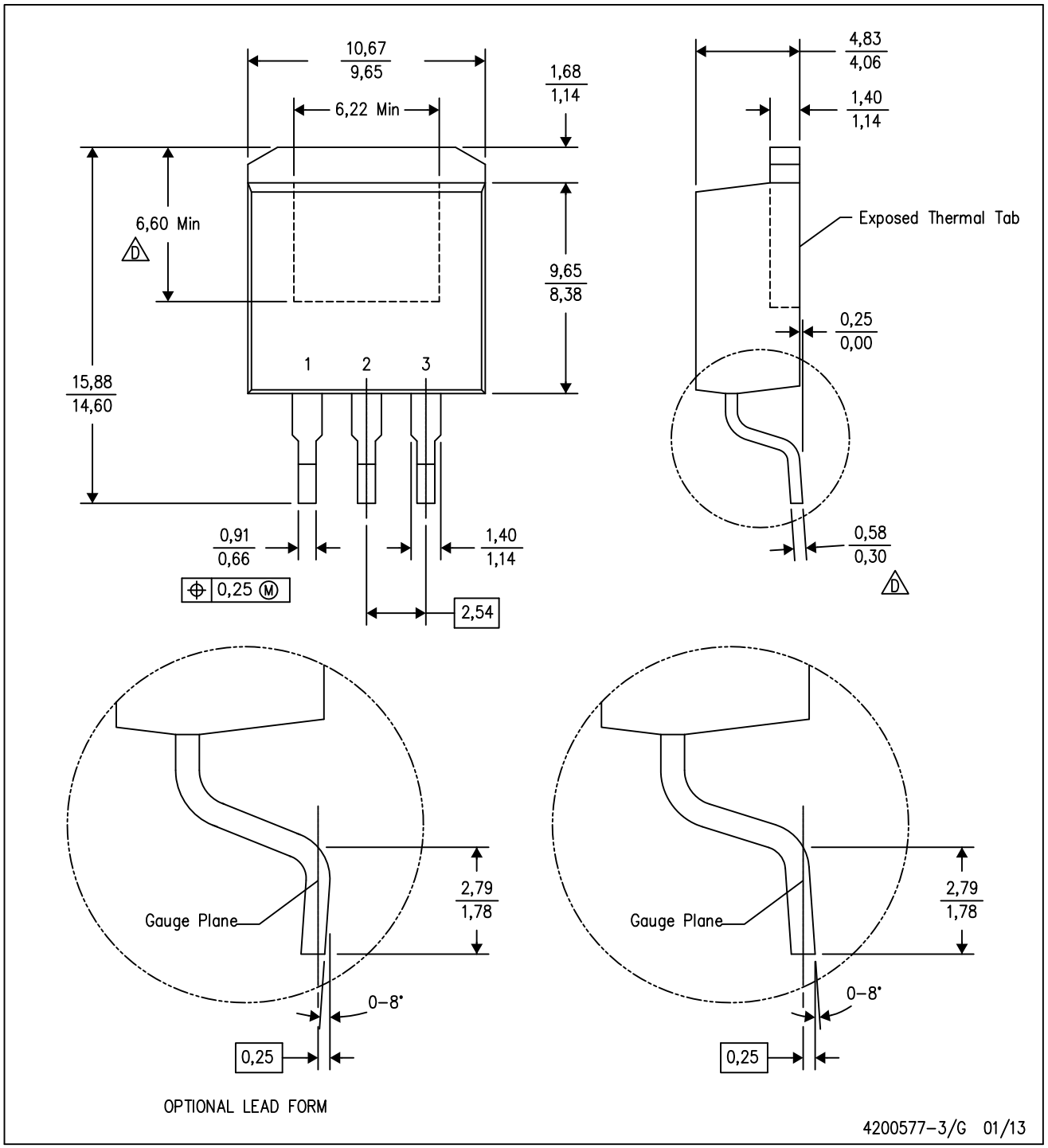
KTP (R-PSFM-G2) **PowerFLEX™ PLASTIC FLANGE-MOUNT PACKAGE**



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.

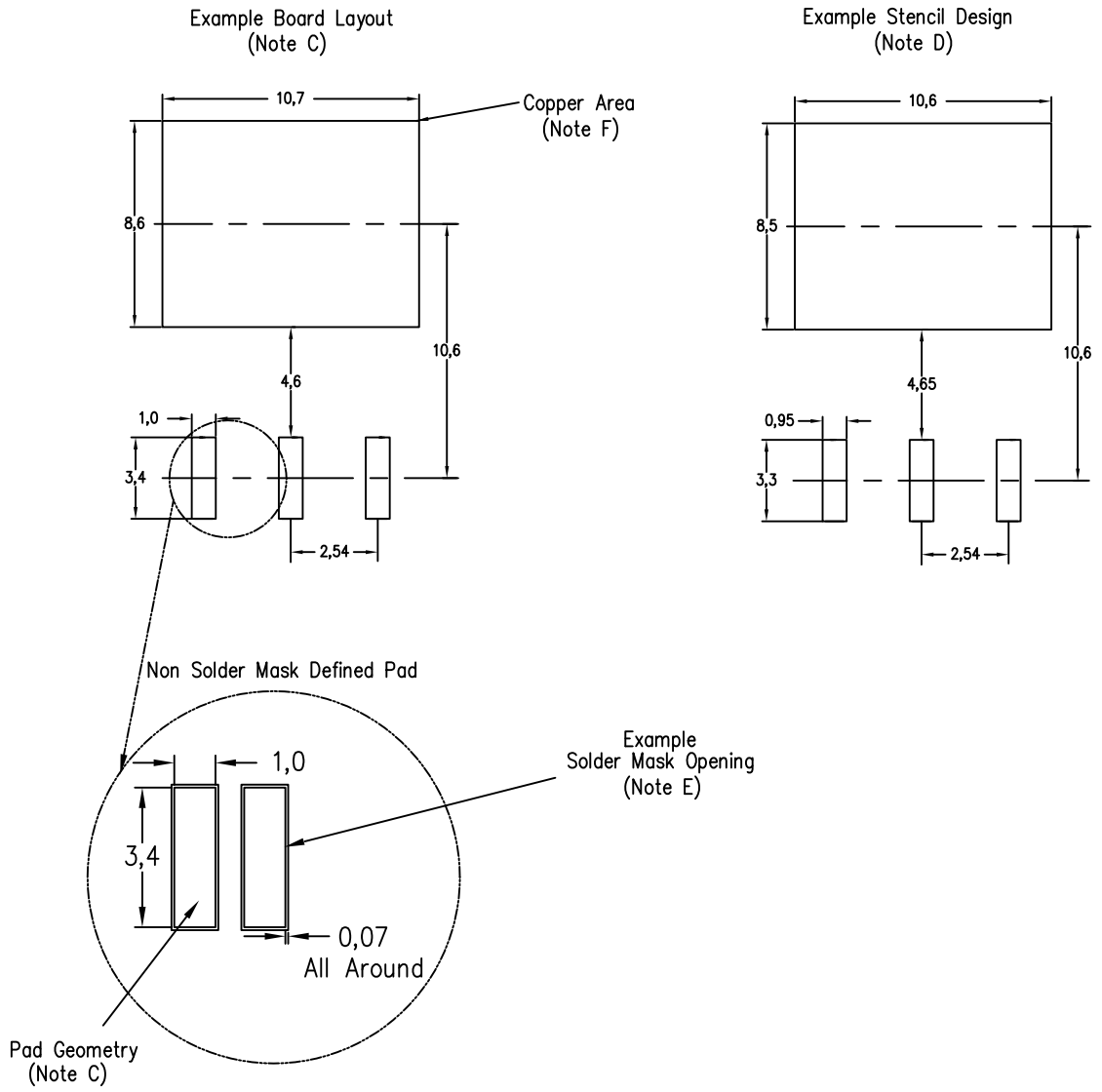
PowerFLEX is a trademark of Texas Instruments.

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



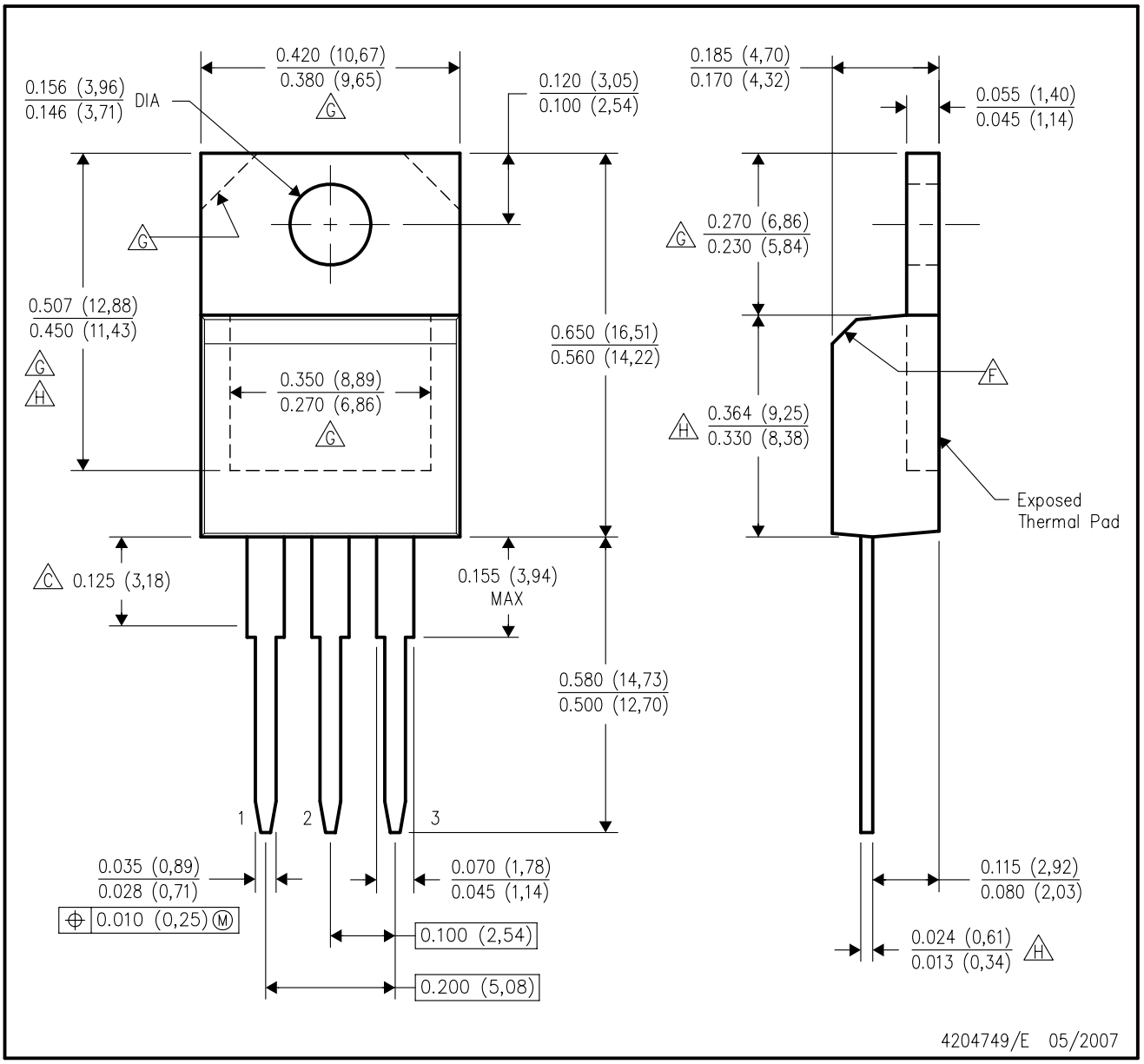
NOTES:
A. All linear dimensions are in millimeters.
B. This drawing is subject to change without notice.
C. Body dimensions do not include mold flash or protrusion. Mold flash or protrusion not to exceed 0.005 (0,13) per side.
D. Falls within JEDEC TO–263 variation AA, except minimum lead thickness and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

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



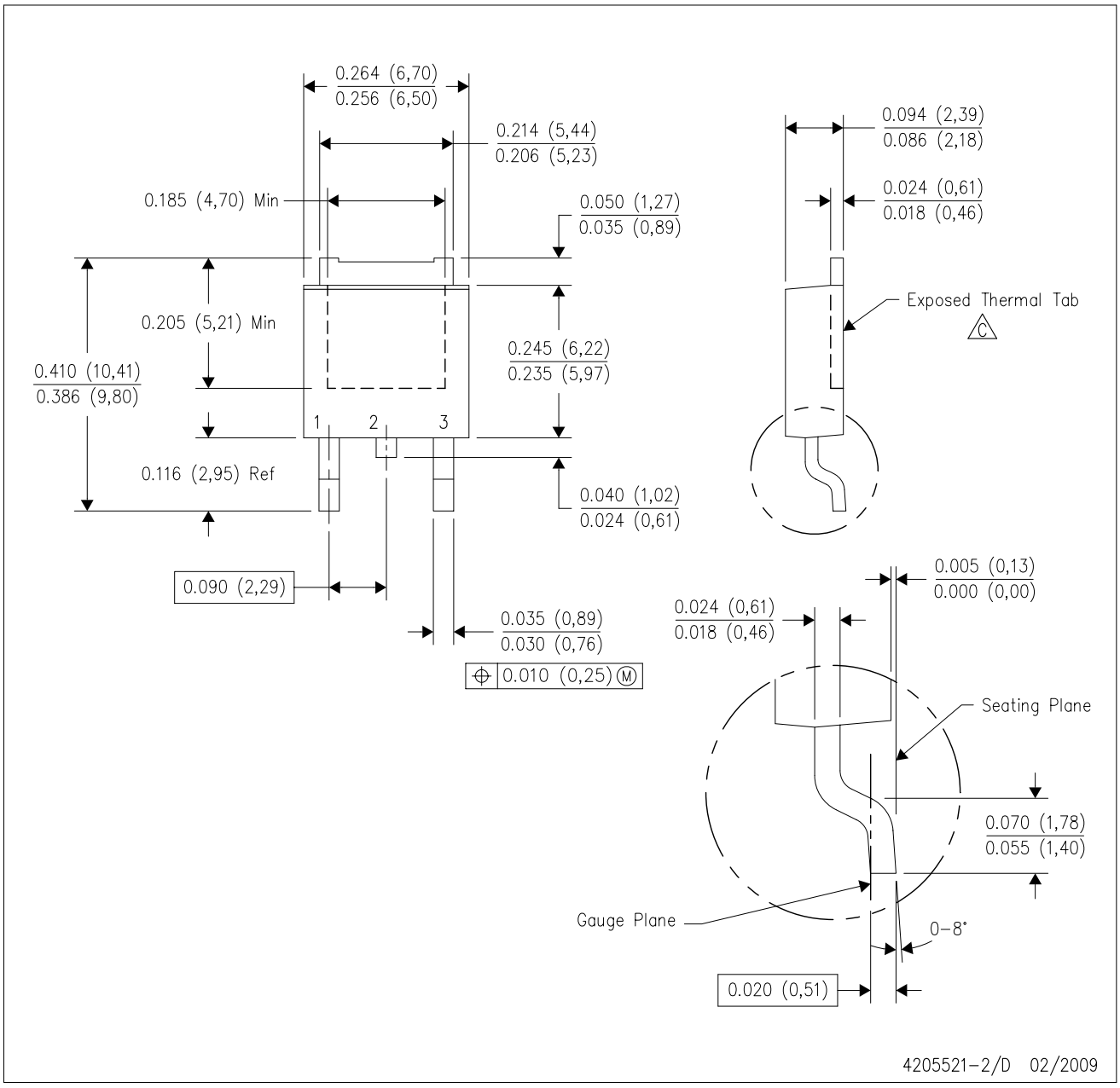
NOTES:
A. All linear dimensions are in millimeters.
B. This drawing is subject to change without notice.
C. Publication IPC–SM–782 is recommended for alternate designs.
D. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC–7525.
E. Customers should contact their board fabrication site for solder mask tolerances between and around signal pads.
F. This package is designed to be soldered to a thermal pad on the board. Refer to the Product Datasheet for specific thermal information, via requirements, and recommended thermal pad size. For thermal pad sizes larger than shown a solder mask defined pad is recommended in order to maintain the solderable pad geometry while increasing copper area.

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



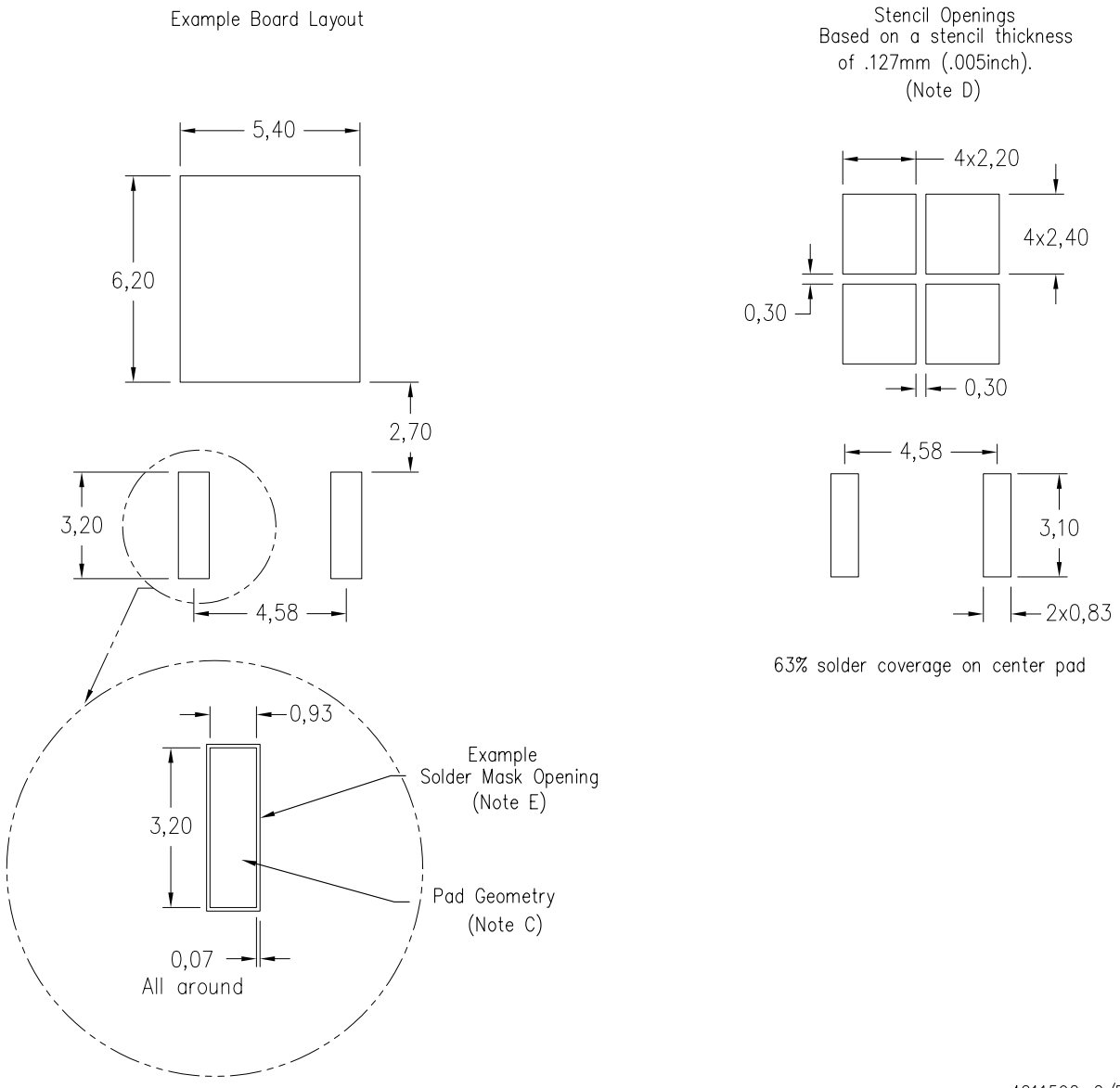
NOTES:
A. All linear dimensions are in inches (millimeters).
B. This drawing is subject to change without notice.
C. Lead dimensions are not controlled within this area.
D. All lead dimensions apply before solder dip.
E. The center lead is in electrical contact with the mounting tab.
F. The chamfer is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

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



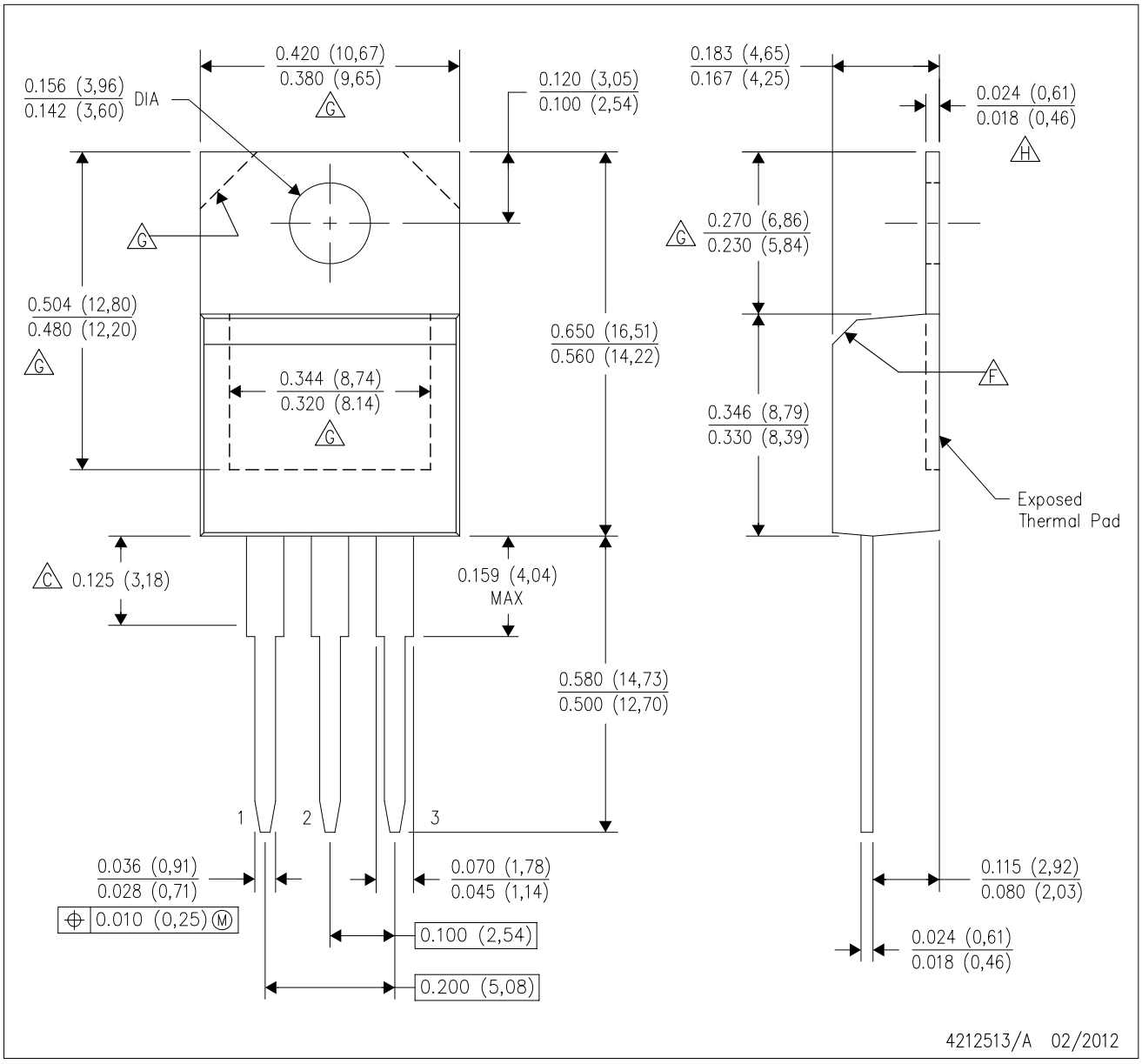
NOTES:
A. All linear dimensions are in inches (millimeters).
B. This drawing is subject to change without notice.
C. The center lead is in electrical contact with the exposed thermal tab.
D. Body Dimensions do not include mold flash or protrusions. Mold flash and protrusion shall not exceed 0.006 (0,15) per side.
E. Falls within JEDEC TO–252 variation AA.

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



NOTES:
A. All linear dimensions are in millimeters.
B. This drawing is subject to change without notice.
C. Publication IPC–SM–782 is an alternate information source for PCB land pattern designs.
D. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC–7525 for other stencil recommendations.
E. Customers should contact their board fabrication site for recommended solder mask tolerances and via tenting recommendations for vias placed in thermal pad.

KCT (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 tab thickness.

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