



**THE DATASHEET OF
AZ1117ID-ADJTRG1**



Description

The DIODES™ AZ1117I is a low dropout three-terminal regulator optimized for a low voltage where transient response and minimum input voltage are critical. The device provides current-limit and thermal-shutdown features. Its circuit includes a trimmed bandgap reference to assure an output voltage accuracy of within $\pm 1\%$. On-chip thermal shutdown provides protection against a combination of high current and ambient temperature that may create excessive junction temperature.

The AZ1117I is available in 1.2V, 1.5V, 1.8V, 2.5V, 3.3V, and 5.0V fixed output voltage versions and an ADJ output voltage version. The fixed versions integrate the adjust resistors. It is also available in an adjustable version which can set the output voltage with two external resistors.

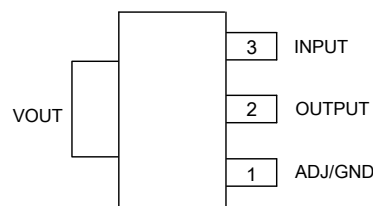
The AZ1117I is available in the industry-standard SOT223 and TO252-2 packages.

Features

- Current Limit: 1.35A (Typ)
- Output Noise from 10Hz to 10KHz: 0.003% of V_{OUT}
- PSRR at $I_{OUT} = 300\text{mA}$ and $f = 120\text{Hz}$: 70dB
- Output Voltage Accuracy: $\pm 1\%$ (Except 1.2V Version)
- On-chip Thermal Shutdown
- Maximum Quiescent Current: $I_{QMAX} = 6\text{mA}$
- Compatible with Low ESR Ceramic Capacitor
- Operation Junction Temperature: -40°C to $+125^\circ\text{C}$
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

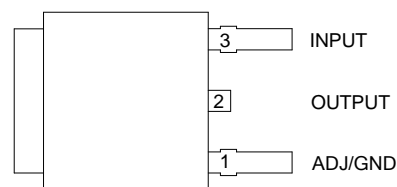
Pin Assignments

(Top View)



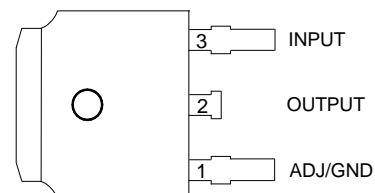
SOT223

(Top View)



TO252-2

(Top View)



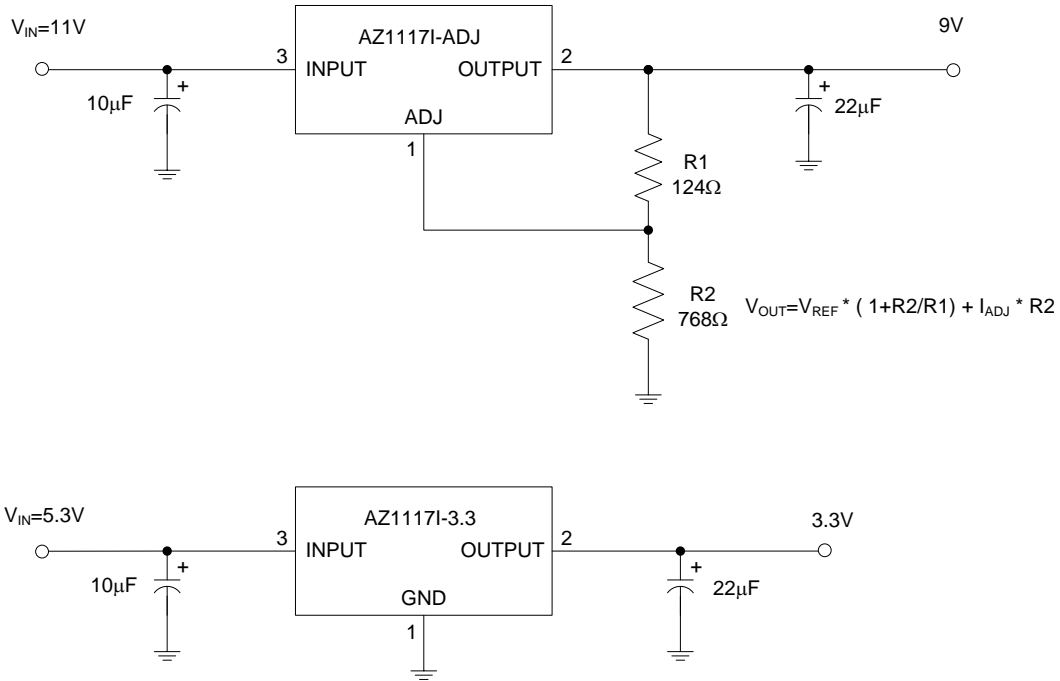
TO252 (Type CJ)

Applications

- USB devices
- Add-on cards
- DVD players
- PC motherboards

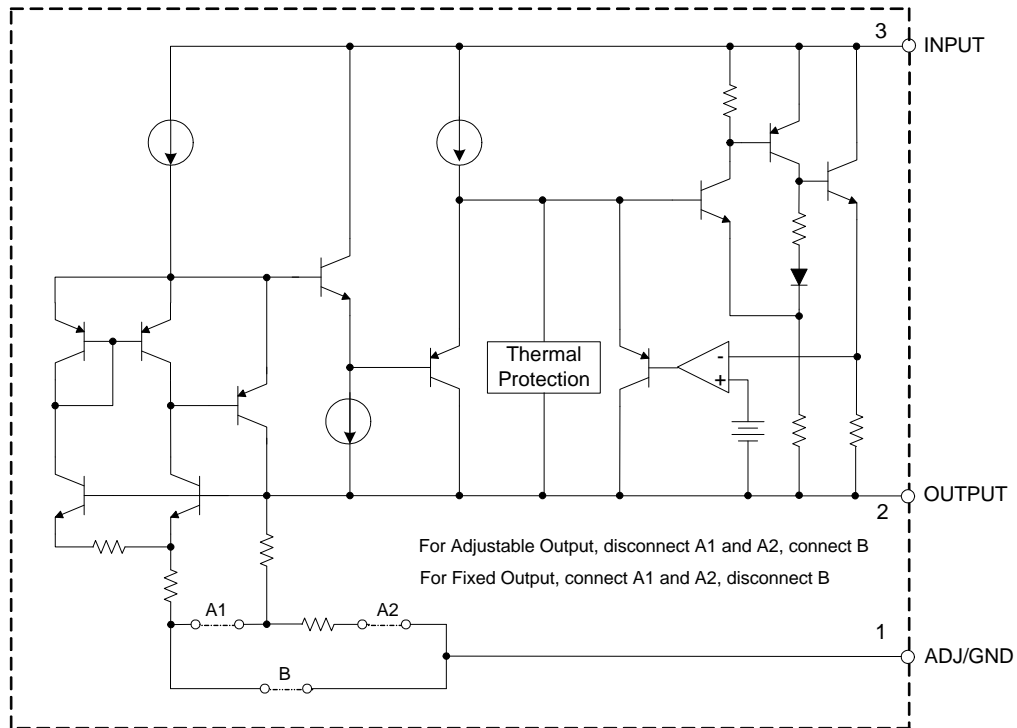
Notes: 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Typical Applications Circuit (Note 4)



Note: 4. The AZ1117I is compatible with low ESR ceramic capacitor. The ESR of the output capacitors must be less than 20Ω. A minimum of 10µF output capacitor is required.

Functional Block Diagram



Absolute Maximum Ratings (Note 5) (@T_A = +25°C, unless otherwise specified.)

| Symbol | Parameter | Rating | | Unit |
|-------------------|---|-------------|-----|------|
| V _{IN} | Input Voltage | 18 | | V |
| T _J | Operating Junction Temperature Range | +150 | | °C |
| T _{STG} | Storage Temperature Range | -65 to +150 | | °C |
| θ _{JA} | Thermal Resistance (Without Heatsink) | SOT223 | 125 | °C/W |
| | | TO252-2 | 100 | |
| θ _{JA} | Thermal Resistance (With Heatsink) (Note 6) | SOT223 | 100 | °C/W |
| | | TO252-2 | 70 | |
| T _{LEAD} | Lead Temperature (Soldering, 10sec) | +260 | | °C |

- Notes:
- Stresses greater than 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 Ratings" for extended periods may affect device reliability.
 - Chip is soldered to 100mm²(10mm*10mm) copper (top side solder mask) on 2oz.2 layers FR-4 PCB with 8*0.5mm vias.

Recommended Operating Conditions (@T_A = +25°C, unless otherwise specified.)

| Symbol | Parameter | Min | Max | Unit |
|-----------------|--------------------------------------|-----|------|------|
| V _{IN} | Input Voltage | — | 15 | V |
| T _J | Operating Junction Temperature Range | -40 | +125 | °C |

Electrical Characteristics AZ1117I-ADJ

(Operating Conditions: V_{IN} = V_{OUT}+2V, I_{OUT} = 10mA, T_J = +25°C, unless otherwise specified. (P ≤ maximum power dissipation). Limits appearing in **Boldface** type apply over the entire junction temperature range for operation, -40°C to +125°C.)

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit | |
|--------------------|---|---|--------------|-------|--------------|------|---|
| V _{REF} | Reference Voltage | 1.5V ≤ V _{IN} -V _{OUT} ≤ 10V | 1.238 | 1.250 | 1.262 | V | |
| | | | 1.225 | 1.250 | 1.275 | | |
| V _{RLINE} | Line Regulation | 1.5V ≤ V _{IN} -V _{OUT} ≤ 10V | — | 0.001 | 0.1 | % | |
| | | | — | — | 0.2 | | |
| V _{RLOAD} | Load Regulation | V _{IN} = V _{OUT} +2V 1mA ≤ I _{OUT} ≤ 1A | — | 0.4 | 1.0 | % | |
| V _{DROP} | Dropout Voltage | ΔV _{REF} = 1%, I _{OUT} = 0.8A | SOT223 | — | 1.2 | 1.3 | V |
| | | | TO252-2 | — | 1.3 | 1.4 | V |
| I _{LIMIT} | Current Limit | — | 1 | 1.35 | — | A | |
| — | Adjust Pin Current | — | — | 60 | 120 | μA | |
| — | Adjust Pin Current Change | 1.5 ≤ (V _{IN} -V _{OUT}) ≤ 10V | — | 0.2 | 5 | μA | |
| — | Minimum Load Current | 1.5 ≤ (V _{IN} -V _{OUT}) ≤ 10V | — | 1.7 | 5 | mA | |
| PSRR | Ripple Rejection | f = 120Hz, C _{OUT} = 22μF (V _{IN} -V _{OUT}) = 3V, I _{OUT} = 300mA | — | 70 | — | dB | |
| — | Temperature Stability | — | — | 0.5 | — | % | |
| — | RMS Output Noise (% of V _{OUT}) | T _A = +25°C, 10Hz ≤ f ≤ 10KHz | — | 0.003 | — | % | |
| — | Thermal Shutdown | Junction Temperature | — | +160 | — | °C | |
| — | Thermal Shutdown Hysteresis | — | — | +16 | — | °C | |
| θ _{JC} | Thermal Resistance (Junction to Case) | SOT223 | — | 15 | — | °C/W | |
| | | | — | | — | | |
| | | | TO252-2 | — | 10 | | — |

Electrical Characteristics AZ1117I-1.2

(Operating Conditions: $V_{IN} \leq 10V$, $I_{OUT} = 10mA$, $T_J = +25^\circ C$, unless otherwise specified. ($P \leq$ maximum power dissipation). Limits appearing in **Boldface** type apply over the entire junction temperature range for operation, $-40^\circ C$ to $+125^\circ C$.)

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit | |
|---------------|--|--|--------------|-------|--------------|--------------|----|
| V_{OUT} | Output Voltage | $1.5V \leq V_{IN} - V_{OUT} \leq 10V$ | 1.176 | 1.2 | 1.224 | V | |
| | | | 1.152 | 1.2 | 1.248 | | |
| V_{RLINE} | Line Regulation | $1.5V \leq V_{IN} - V_{OUT} \leq 10V$ | — | 0.5 | 6 | mV | |
| | | | — | — | 10 | | |
| V_{RLOAD} | Load Regulation | $V_{IN} = V_{OUT} + 2V$ $1mA \leq I_{OUT} \leq 1A$ | — | 2 | 15 | mV | |
| V_{DROP} | Dropout Voltage | $\Delta V_{OUT} = 1\%$, $I_{OUT} = 0.8A$ | SOT223 | — | 1.2 | 1.3 | V |
| | | | TO252-2 | — | 1.3 | 1.4 | V |
| I_{LIMIT} | Current Limit | — | 1 | 1.35 | — | A | |
| I_Q | Quiescent Current | $I_{OUT} = 0$ | — | 4 | 6 | mA | |
| PSRR | Ripple Rejection | $f = 120Hz$, $C_{OUT} = 22\mu F$ $(V_{IN} - V_{OUT}) = 3V$, $I_{OUT} = 300mA$ | — | 70 | — | dB | |
| — | Temperature Stability | — | — | 0.5 | — | % | |
| — | RMS Output Noise (% of V_{OUT}) | $T_A = +25^\circ C$, $10Hz \leq f \leq 10KHz$ | — | 0.003 | — | % | |
| — | Thermal Shutdown | Junction Temperature | — | +160 | — | $^\circ C$ | |
| — | Thermal Shutdown Hysteresis | — | — | +16 | — | $^\circ C$ | |
| θ_{JC} | Thermal Resistance (Junction to Case) | SOT223 | — | 15 | — | $^\circ C/W$ | |
| | | | — | | — | | |
| | | | TO252-2 | | — | | 10 |

Electrical Characteristics AZ1117I-1.5

(Operating Conditions: $V_{IN} \leq 10V$, $I_{OUT} = 10mA$, $T_J = +25^\circ C$, unless otherwise specified. ($P \leq$ maximum power dissipation). Limits appearing in **Boldface** type apply over the entire junction temperature range for operation, $-40^\circ C$ to $+125^\circ C$.)

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit | |
|---------------|--|--|-------------|-------|-------------|--------------|----|
| V_{OUT} | Output Voltage | $1.5V \leq V_{IN} - V_{OUT} \leq 10V$ | 1.485 | 1.5 | 1.515 | V | |
| | | | 1.47 | 1.5 | 1.53 | | |
| V_{RLINE} | Line Regulation | $1.5V \leq V_{IN} - V_{OUT} \leq 10V$ | — | 0.5 | 6 | mV | |
| | | | — | — | 10 | | |
| V_{RLOAD} | Load Regulation | $V_{IN} = V_{OUT} + 2V$ $1mA \leq I_{OUT} \leq 1A$ | — | 2 | 15 | mV | |
| V_{DROP} | Dropout Voltage | $\Delta V_{OUT} = 1\%$, $I_{OUT} = 0.8A$ | SOT223 | — | 1.2 | 1.3 | V |
| | | | TO252-2 | — | 1.3 | 1.4 | V |
| I_{LIMIT} | Current Limit | — | 1 | 1.35 | — | A | |
| I_Q | Quiescent Current | $I_{OUT} = 0$ | — | 4 | 6 | mA | |
| PSRR | Ripple Rejection | $f = 120Hz$, $C_{OUT} = 22\mu F$ $(V_{IN} - V_{OUT}) = 3V$, $I_{OUT} = 300mA$ | — | 70 | — | dB | |
| — | Temperature Stability | — | — | 0.5 | — | % | |
| — | RMS Output Noise (% of V_{OUT}) | $T_A = +25^\circ C$, $10Hz \leq f \leq 10KHz$ | — | 0.003 | — | % | |
| — | Thermal Shutdown | Junction Temperature | — | +160 | — | $^\circ C$ | |
| — | Thermal Shutdown Hysteresis | — | — | +16 | — | $^\circ C$ | |
| θ_{JC} | Thermal Resistance (Junction to Case) | SOT223 | — | 15 | — | $^\circ C/W$ | |
| | | | — | | — | | |
| | | | TO252-2 | | — | | 10 |

Electrical Characteristics AZ1117I-1.8

(Operating Conditions: $V_{IN} \leq 10V$, $I_{OUT} = 10mA$, $T_J = +25^\circ C$, unless otherwise specified. ($P \leq$ maximum power dissipation). Limits appearing in **Boldface** type apply over the entire junction temperature range for operation, $-40^\circ C$ to $+125^\circ C$.)

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit | |
|---------------|--|--|--------------|-------|--------------|--------------|---|
| V_{OUT} | Output Voltage | $1.5V \leq V_{IN}-V_{OUT} \leq 10V$ | 1.782 | 1.8 | 1.818 | V | |
| | | | 1.764 | 1.8 | 1.836 | | |
| V_{RLINE} | Line Regulation | $1.5V \leq V_{IN}-V_{OUT} \leq 10V$ | — | 0.5 | 6 | mV | |
| | | | — | — | 10 | | |
| V_{RLOAD} | Load Regulation | $V_{IN} = V_{OUT}+2V$ $1mA \leq I_{OUT} \leq 1A$ | — | 2 | 15 | mV | |
| V_{DROP} | Dropout Voltage | $\Delta V_{OUT} = 1\%$, $I_{OUT} = 0.8A$ | SOT223 | — | 1.2 | 1.3 | V |
| | | | TO252-2 | — | 1.3 | 1.4 | V |
| I_{LIMIT} | Current Limit | — | 1 | 1.35 | — | A | |
| I_Q | Quiescent Current | $I_{OUT} = 0$ | — | 4 | 6 | mA | |
| PSRR | Ripple Rejection | $f = 120Hz$, $C_{OUT} = 22\mu F$ $(V_{IN}-V_{OUT}) = 3V$, $I_{OUT} = 300mA$ | — | 70 | — | dB | |
| — | Temperature Stability | — | — | 0.5 | — | % | |
| — | RMS Output Noise (% of V_{OUT}) | $T_A = +25^\circ C$, $10Hz \leq f \leq 10KHz$ | — | 0.003 | — | % | |
| — | Thermal Shutdown | Junction Temperature | — | +160 | — | $^\circ C$ | |
| — | Thermal Shutdown Hysteresis | — | — | +16 | — | $^\circ C$ | |
| θ_{JC} | Thermal Resistance (Junction to Case) | SOT223 | — | 15 | — | $^\circ C/W$ | |
| | | | — | | — | | |
| | | TO252-2 | — | 10 | — | | |

Electrical Characteristics AZ1117I-2.5

(Operating Conditions: $V_{IN} \leq 10V$, $I_{OUT} = 10mA$, $T_J = +25^\circ C$, unless otherwise specified. ($P \leq$ maximum power dissipation). Limits appearing in **Boldface** type apply over the entire junction temperature range for operation, $-40^\circ C$ to $+125^\circ C$.)

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit | |
|---------------|--|--|--------------|------------|--------------|--------------|---|
| V_{OUT} | Output Voltage | $1.5V \leq V_{IN}-V_{OUT} \leq 10V$ | 2.475 | 2.5 | 2.525 | V | |
| | | | 2.455 | 2.5 | 2.545 | | |
| V_{RLINE} | Line Regulation | $1.5V \leq V_{IN}-V_{OUT} \leq 10V$ | — | 0.5 | 6 | mV | |
| | | | — | — | 10 | | |
| V_{RLOAD} | Load Regulation | $V_{IN} = V_{OUT}+2V$ $1mA \leq I_{OUT} \leq 1A$ | — | 2 | 15 | mV | |
| V_{DROP} | Dropout Voltage | $\Delta V_{OUT} = 1\%$, $I_{OUT} = 0.8A$ | SOT223 | — | 1.2 | 1.3 | V |
| | | | TO252-2 | — | 1.3 | 1.4 | V |
| I_{LIMIT} | Current Limit | — | 1 | 1.35 | — | A | |
| I_Q | Quiescent Current | $I_{OUT} = 0$ | — | 4 | 6 | mA | |
| PSRR | Ripple Rejection | $f = 120Hz$, $C_{OUT} = 22\mu F$ $(V_{IN}-V_{OUT}) = 3V$, $I_{OUT} = 300mA$ | — | 70 | — | dB | |
| — | Temperature Stability | — | — | 0.5 | — | % | |
| — | RMS Output Noise (% of V_{OUT}) | $T_A = +25^\circ C$, $10Hz \leq f \leq 10KHz$ | — | 0.003 | — | % | |
| — | Thermal Shutdown | Junction Temperature | — | +160 | — | $^\circ C$ | |
| — | Thermal Shutdown Hysteresis | — | — | +16 | — | $^\circ C$ | |
| θ_{JC} | Thermal Resistance (Junction to Case) | SOT223 | — | 15 | — | $^\circ C/W$ | |
| | | | — | | — | | |
| | | TO252-2 | — | 10 | — | | |

Electrical Characteristics AZ1117I-3.3

(Operating Conditions: $V_{IN} \leq 10V$, $I_{OUT} = 10mA$, $T_J = +25^\circ C$, unless otherwise specified. ($P \leq$ maximum power dissipation). Limits appearing in **Boldface** type apply over the entire junction temperature range for operation, $-40^\circ C$ to $+125^\circ C$.)

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---------------|---------------------------------------|--|-----------------------|------------|-----------------------|--------------|
| V_{OUT} | Output Voltage | $1.5V \leq V_{IN}-V_{OUT} \leq 10V$ | 3.267 3.235 | 3.3 3.3 | 3.333 3.365 | V |
| V_{RLINE} | Line Regulation | $1.5V \leq V_{IN}-V_{OUT} \leq 10V$ | — | 0.5 | 6 10 | mV |
| V_{RLOAD} | Load Regulation | $V_{IN} = V_{OUT}+2V$ $1mA \leq I_{OUT} \leq 1A$ | — | 2 | 15 | mV |
| V_{DROP} | Dropout Voltage | $\Delta V_{OUT} = 1\%$, $I_{OUT} = 0.8A$ | — | 1.2 | 1.3 | V |
| | | SOT223 | — | 1.3 | 1.4 | V |
| | | TO252-2 | — | 1.3 | 1.4 | V |
| I_{LIMIT} | Current Limit | — | 1 | 1.35 | — | A |
| I_Q | Quiescent Current | $I_{OUT} = 0$ | — | 4 | 6 | mA |
| PSRR | Ripple Rejection | $f = 120Hz$, $C_{OUT} = 22\mu F$ $(V_{IN}-V_{OUT}) = 3V$, $I_{OUT} = 300mA$ | — | 70 | — | dB |
| — | Temperature Stability | — | — | 0.5 | — | % |
| — | RMS Output Noise (% of V_{OUT}) | $T_A = +25^\circ C$, $10Hz \leq f \leq 10KHz$ | — | 0.003 | — | % |
| — | Thermal Shutdown | Junction Temperature | — | +160 | — | $^\circ C$ |
| — | Thermal Shutdown Hysteresis | — | — | +16 | — | $^\circ C$ |
| θ_{JC} | Thermal Resistance (Junction to Case) | SOT223 | — | 15 | — | $^\circ C/W$ |
| | | TO252-2 | — | 10 | — | $^\circ C/W$ |

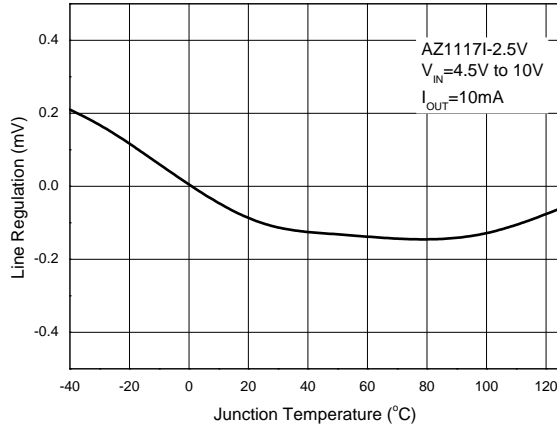
Electrical Characteristics AZ1117I-5.0

(Operating Conditions: $V_{IN} \leq 10V$, $I_{OUT} = 10mA$, $T_J = +25^\circ C$, unless otherwise specified. ($P \leq$ maximum power dissipation). Limits appearing in **Boldface** type apply over the entire junction temperature range for operation, $-40^\circ C$ to $+125^\circ C$.)

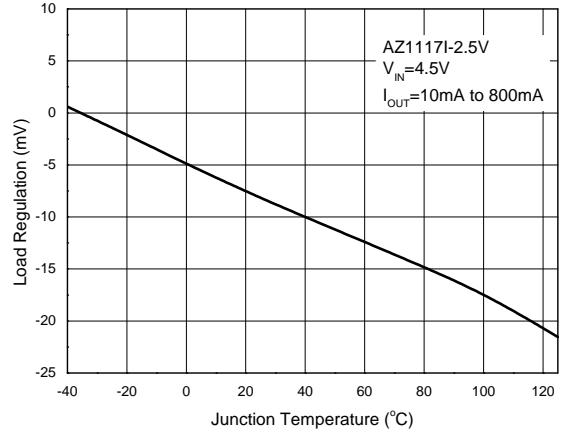
| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---------------|---------------------------------------|--|-----------------------|------------|-----------------------|--------------|
| V_{OUT} | Output Voltage | $1.5V \leq V_{IN}-V_{OUT} \leq 10V$ | 4.950 4.900 | 5.0 5.0 | 5.050 5.100 | V |
| V_{RLINE} | Line Regulation | $1.5V \leq V_{IN}-V_{OUT} \leq 10V$ | — | 0.5 | 6 10 | mV |
| V_{RLOAD} | Load Regulation | $V_{IN} = V_{OUT}+2V$ $1mA \leq I_{OUT} \leq 1A$ | — | 2 | 15 | mV |
| V_{DROP} | Dropout Voltage | $\Delta V_{OUT} = 1\%$, $I_{OUT} = 0.8A$ | — | 1.2 | 1.3 | V |
| | | SOT223 | — | 1.3 | 1.4 | V |
| | | TO252-2 | — | 1.3 | 1.4 | V |
| I_{LIMIT} | Current Limit | — | 1 | 1.35 | — | A |
| I_Q | Quiescent Current | $I_{OUT} = 0$ | — | 4 | 6 | mA |
| PSRR | Ripple Rejection | $f = 120Hz$, $C_{OUT} = 22\mu F$ $(V_{IN}-V_{OUT}) = 3V$, $I_{OUT} = 300mA$ | — | 70 | — | dB |
| — | Temperature Stability | — | — | 0.5 | — | % |
| — | RMS Output Noise (% of V_{OUT}) | $T_A = +25^\circ C$, $10Hz \leq f \leq 10KHz$ | — | 0.003 | — | % |
| — | Thermal Shutdown | Junction Temperature | — | +160 | — | $^\circ C$ |
| — | Thermal Shutdown Hysteresis | — | — | +16 | — | $^\circ C$ |
| θ_{JC} | Thermal Resistance (Junction to Case) | SOT223 | — | 15 | — | $^\circ C/W$ |
| | | TO252-2 | — | 10 | — | $^\circ C/W$ |

Performance Characteristics

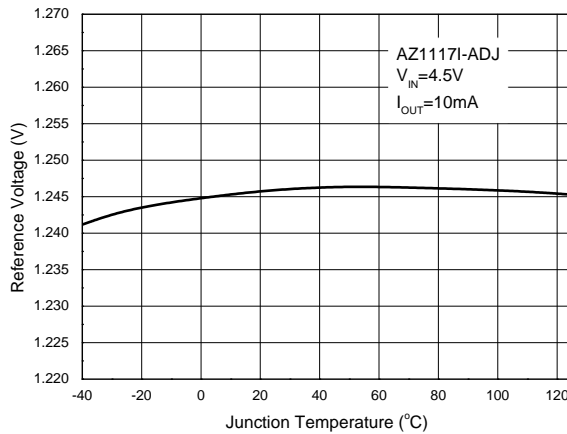
Line Regulation vs. Temperature



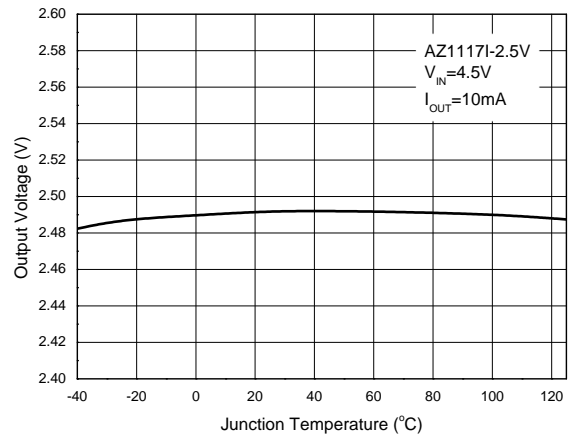
Load Regulation vs. Temperature



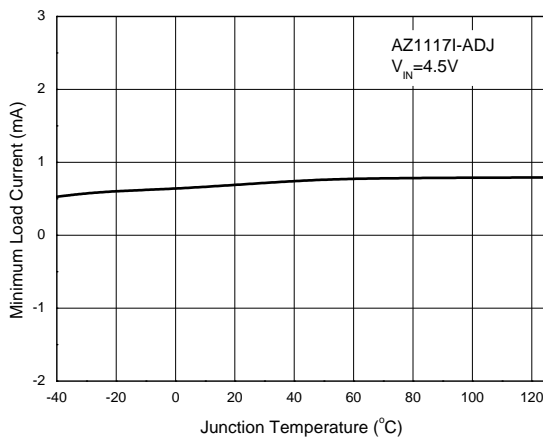
Reference Voltage vs. Temperature



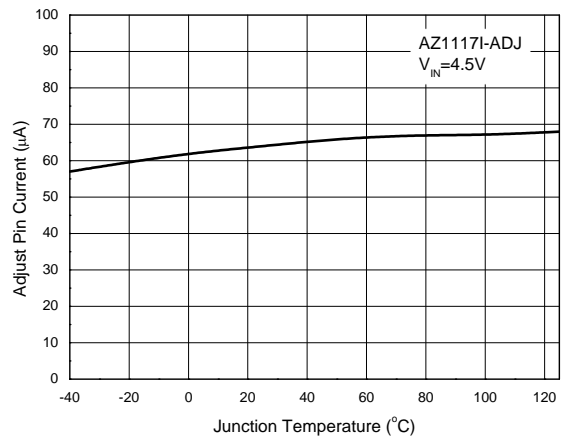
Output Voltage vs. Temperature



Minimum Load Current vs. Temperature

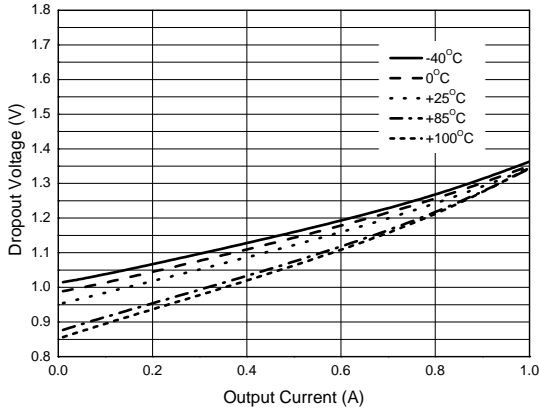


Adjust Pin Current vs. Temperature

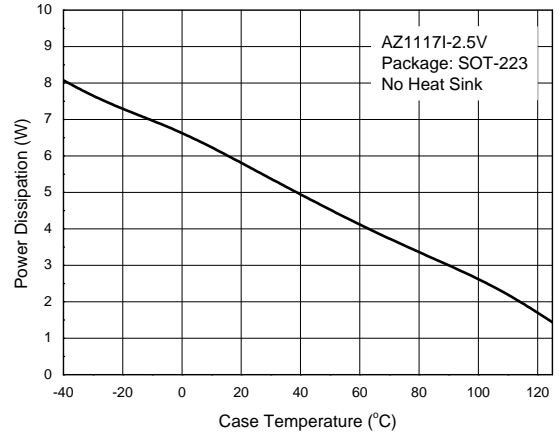


Performance Characteristics (continued)

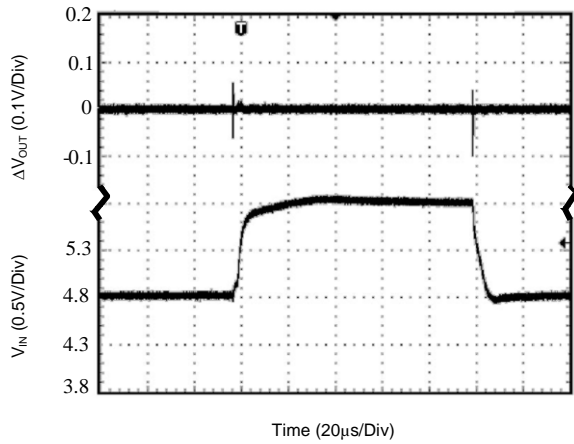
Dropout Voltage vs. Output Current



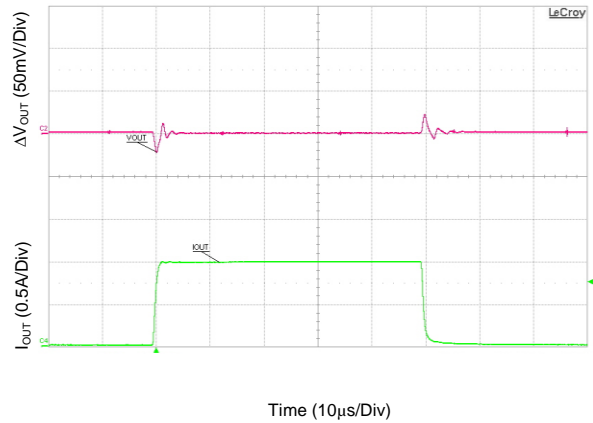
Power Dissipation vs. Temperature



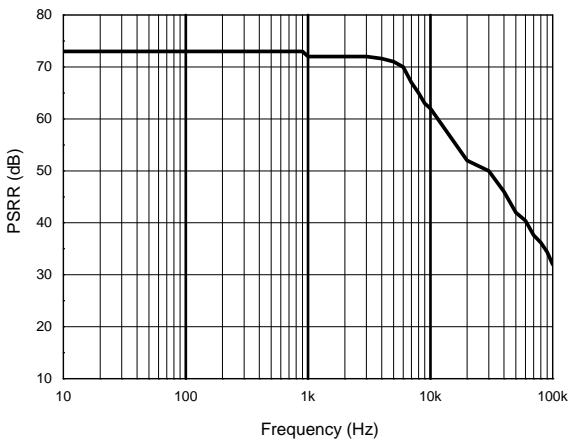
Line Transient Response



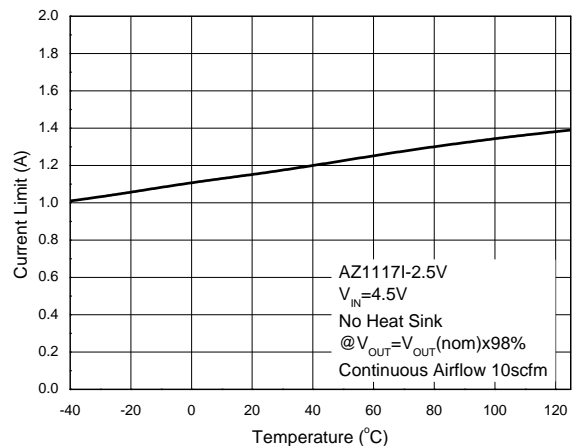
Load Transient Response



PSRR vs. Frequency

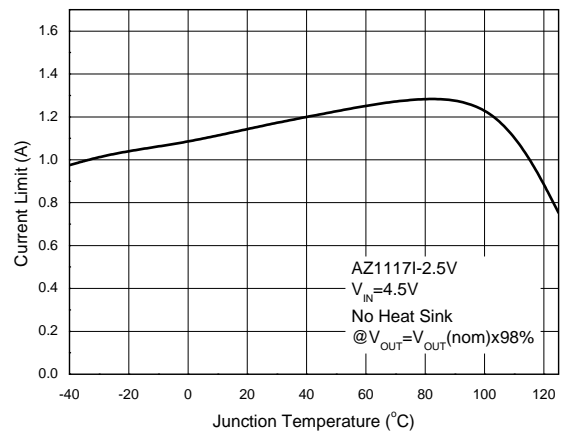
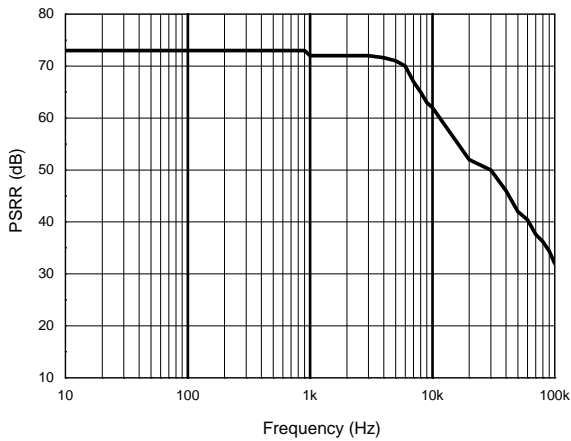
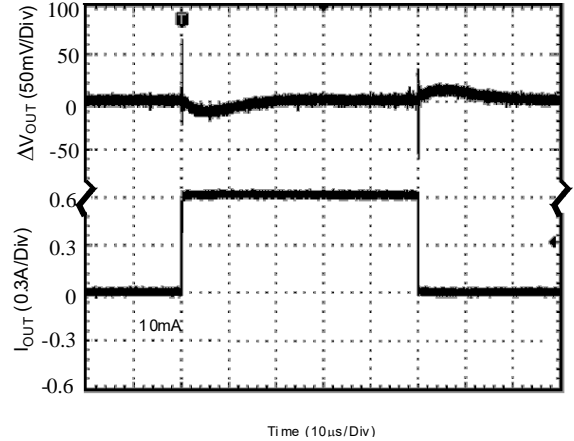
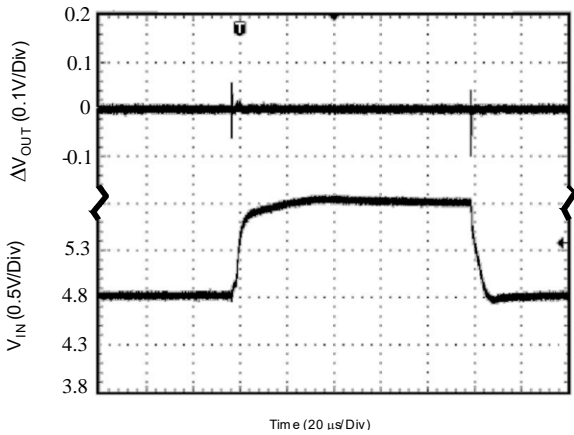
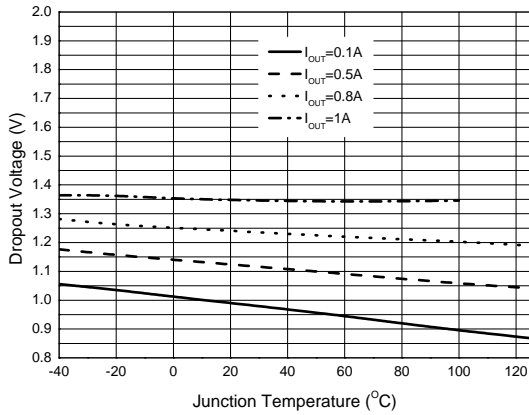


Current Limit vs. Temperature

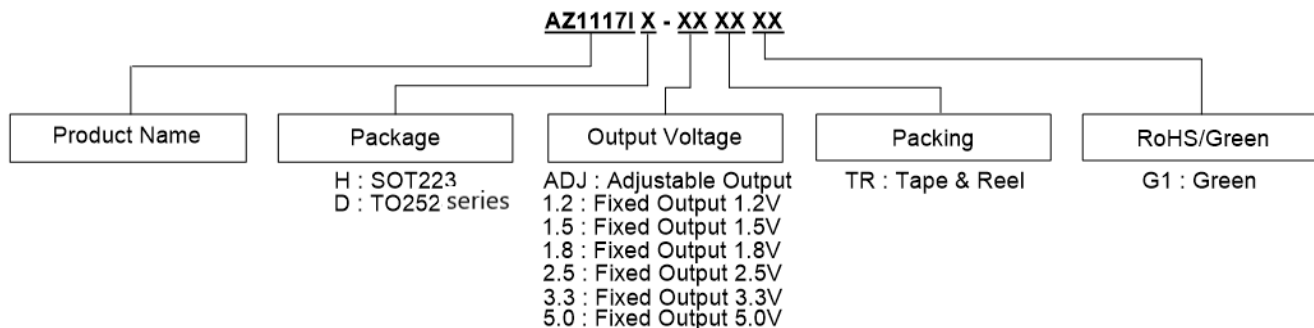


Performance Characteristics (continued)

Dropout Voltage vs. Temperature



Ordering Information

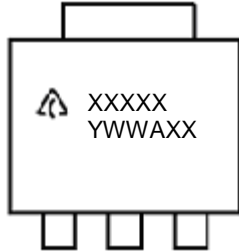


| Package | Temperature Range | Orderable Part Number | Marking ID | Packing | |
|----------------------------|-------------------|-----------------------|----------------|---------|-------------|
| | | | | Qty. | Carrier |
| SOT223 | -40°C to +125°C | AZ1117IH-ADJTRG1 | GH86J | 4000 | Tape & Reel |
| | | AZ1117IH-1.2TRG1 | GH86K | 4000 | Tape & Reel |
| | | AZ1117IH-1.5TRG1 | GH86L | 4000 | Tape & Reel |
| | | AZ1117IH-1.8TRG1 | GH86M | 4000 | Tape & Reel |
| | | AZ1117IH-2.5TRG1 | GH86N | 4000 | Tape & Reel |
| | | AZ1117IH-3.3TRG1 | GH86P | 4000 | Tape & Reel |
| | | AZ1117IH-5.0TRG1 | GH86Q | 4000 | Tape & Reel |
| TO252-2 TO252 (Type CJ) | -40°C to +125°C | AZ1117ID-ADJTRG1 | AZ1117ID-ADJG1 | 2500 | Tape & Reel |
| | | AZ1117ID-1.2TRG1 | AZ1117ID-1.2G1 | 2500 | Tape & Reel |
| | | AZ1117ID-1.5TRG1 | AZ1117ID-1.5G1 | 2500 | Tape & Reel |
| | | AZ1117ID-1.8TRG1 | AZ1117ID-1.8G1 | 2500 | Tape & Reel |
| | | AZ1117ID-2.5TRG1 | AZ1117ID-2.5G1 | 2500 | Tape & Reel |
| | | AZ1117ID-3.3TRG1 | AZ1117ID-3.3G1 | 2500 | Tape & Reel |
| | | AZ1117ID-5.0TRG1 | AZ1117ID-5.0G1 | 2500 | Tape & Reel |

Marking Information

(1) SOT223

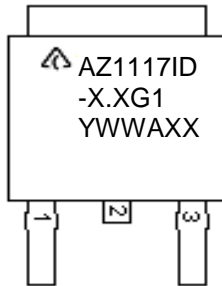
(Top View)



First Line: Logo and Marking ID
(See Ordering Information)
Second Line: Date Code
Y: Year
WW: Work Week of Molding
A: Assembly House Code
XX: 7th and 8th Digits of Batch Number

(2) TO252-2 /TO252 (Type CJ)

(Top View)

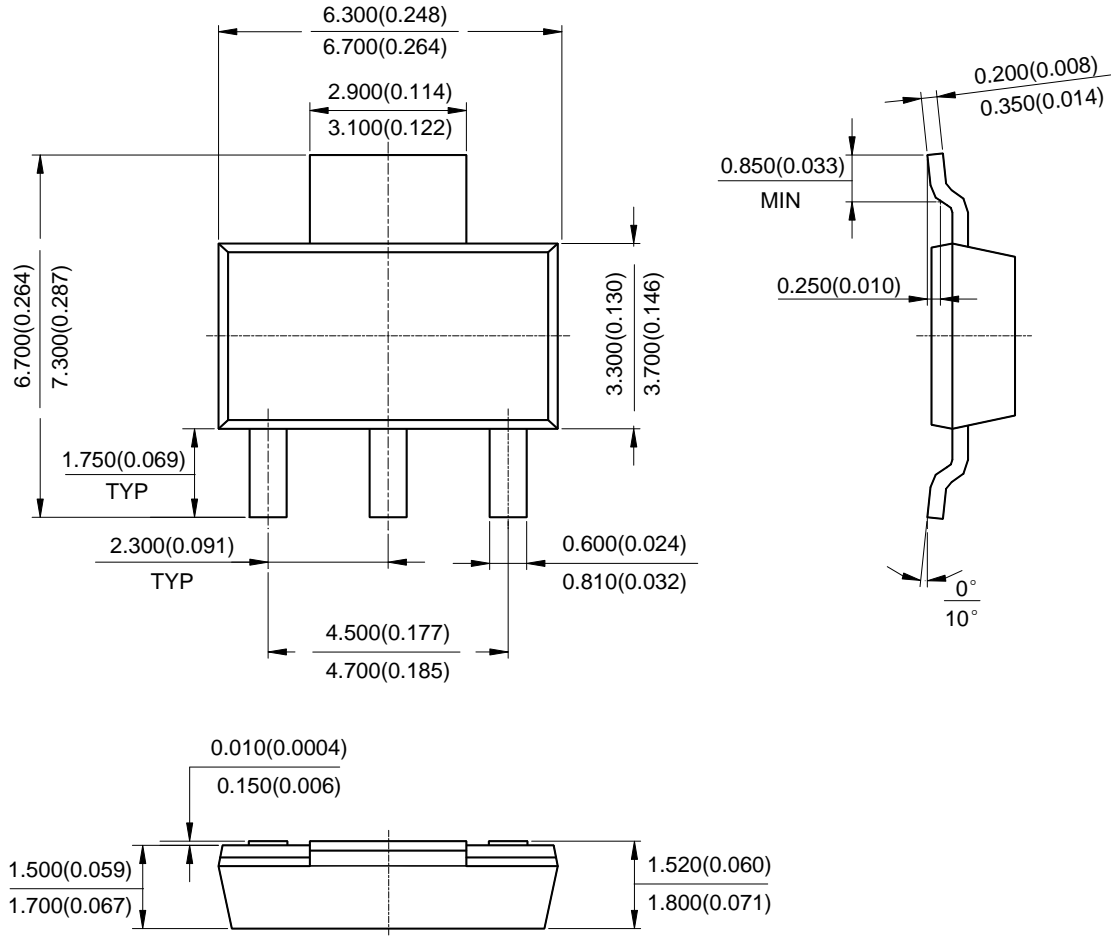


First and Second Lines: Logo and Marking ID
(See Ordering Information)
Third Line: Date Code
Y: Year
WW: Work Week of Molding
A: Assembly House Code
XX: 7th and 8th Digits of Batch Number

Package Outline Dimensions (All dimensions in mm)

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

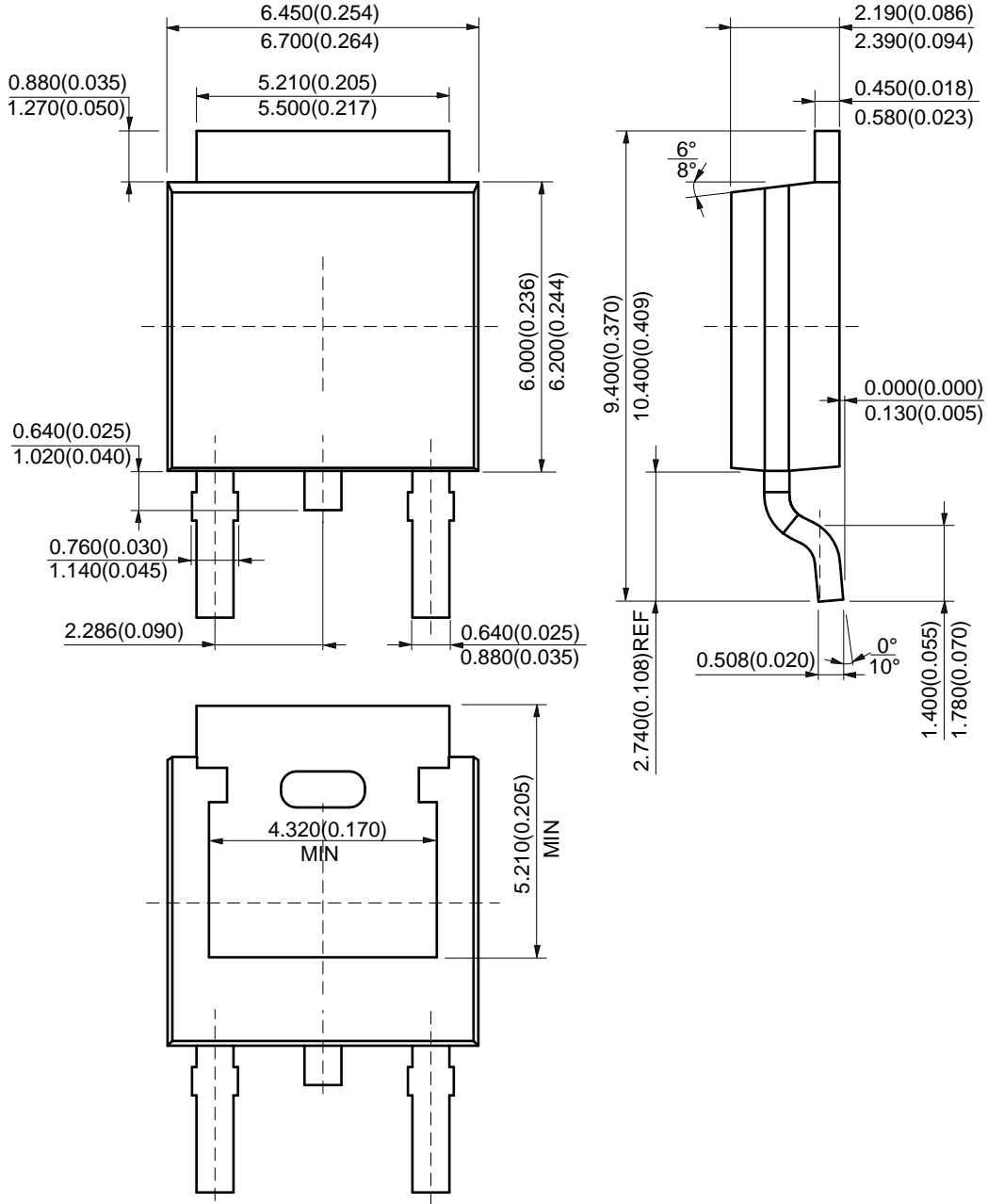
(1) Package Type: SOT223



Package Outline Dimensions (All dimensions in mm) (continued)

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

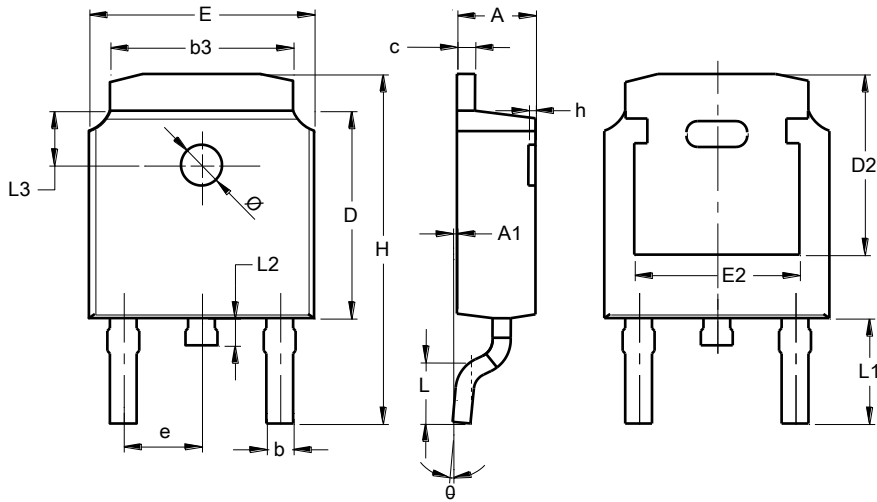
(2) Package Type: TO252-2 (5)



Package Outline Dimensions (All dimensions in mm) (continued)

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

(3) Package Type : TO252 (Type CJ)

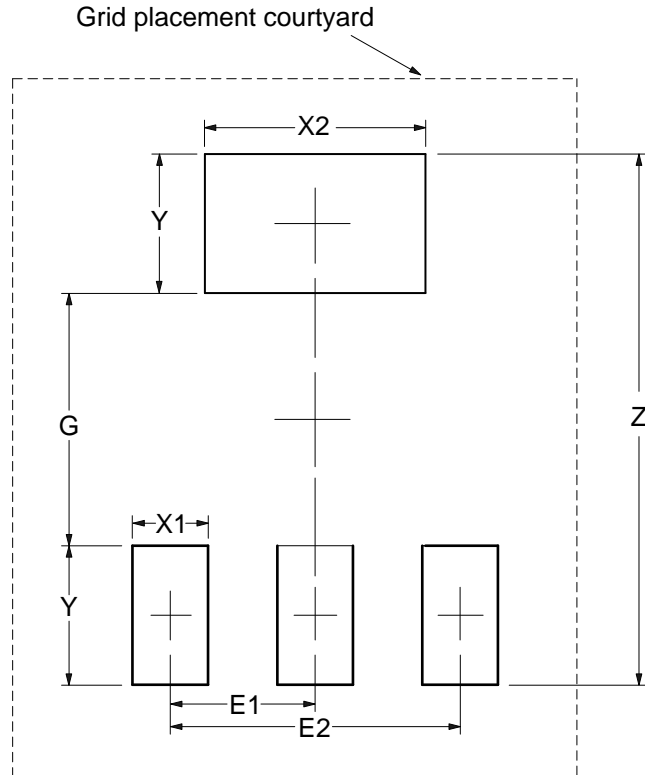


| TO252 (Type CJ) | | | |
|-----------------------------|-----------|--------|-----|
| Dim | Min | Max | Typ |
| A | 2.200 | 2.400 | -- |
| A1 | 0.000 | 0.127 | -- |
| b | 0.635 | 0.770 | -- |
| b3 | 5.100 | 5.460 | -- |
| c | 0.460 | 0.580 | -- |
| D | 6.000 | 6.200 | -- |
| D2 | 5.250 REF | | -- |
| E | 6.500 | 6.700 | -- |
| E2 | 4.830 REF | | -- |
| e | 2.186 | 2.386 | -- |
| h | 0.000 | 0.300 | -- |
| H | 9.712 | 10.312 | -- |
| L | 1.400 | 1.700 | -- |
| L1 | 2.900 REF | | -- |
| L2 | 0.600 | 1.000 | -- |
| L3 | 1.600 REF | | -- |
| Ø | 1.100 | 1.300 | -- |
| θ | 0° | 8° | -- |
| All Dimensions in mm | | | |

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

(1) Package Type: SOT223

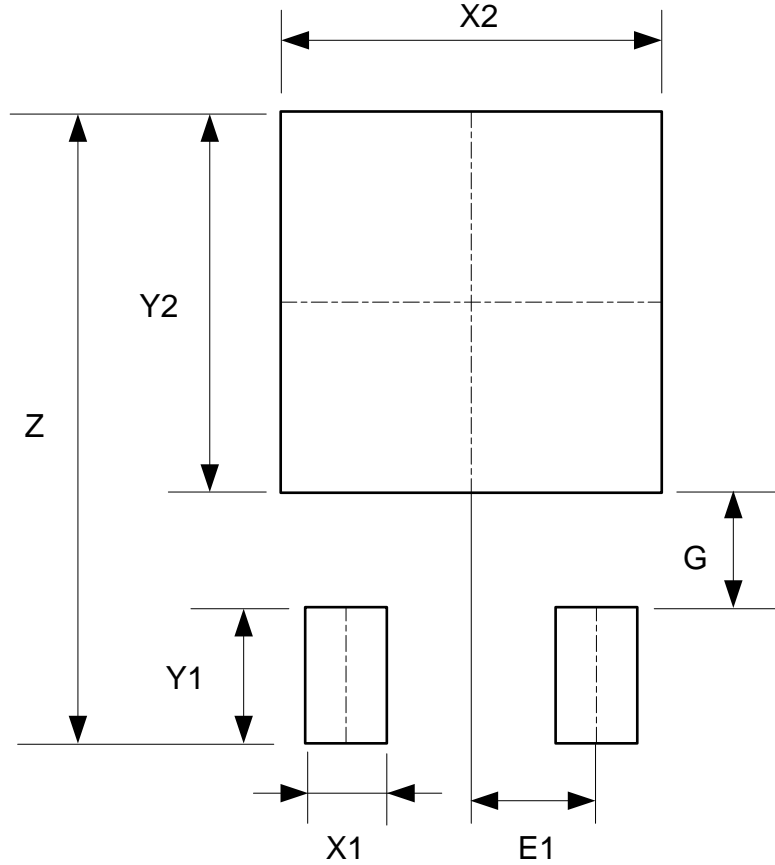


| Dimensions | Z (mm)/(inch) | G (mm)/(inch) | X1 (mm)/(inch) | X2 (mm)/(inch) | Y (mm)/(inch) | E1 (mm)/(inch) | E2 (mm)/(inch) |
|------------|------------------|------------------|-------------------|-------------------|------------------|-------------------|-------------------|
| Value | 8.400/0.331 | 4.000/0.157 | 1.200/0.047 | 3.500/0.138 | 2.200/0.087 | 2.300/0.091 | 4.600/0.181 |

Suggested Pad Layout (continued)

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

(2) Package Type: TO252-2 (5) / TO252 (Type CJ)



| Dimensions | Z (mm)/(inch) | X1 (mm)/(inch) | X2=Y2 (mm)/(inch) | Y1 (mm)/(inch) | G (mm)/(inch) | E1 (mm)/(inch) |
|------------|------------------|-------------------|----------------------|-------------------|------------------|-------------------|
| Value | 11.600/0.457 | 1.500/0.059 | 7.000/0.276 | 2.500/0.098 | 2.100/0.083 | 2.300/0.091 |

Mechanical Data

- Moisture Sensitivity: Level 3 per J-STD-020
- Terminals: Finish— Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (e3)
- Weight:
 - TO-252-2 / TO252 (Type CJ): 0.312 grams (Approximate)
 - SOT-223: 0.116 grams (Approximate)

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