

**1A ULTRA LOW DROPOUT LINEAR REGULATOR**

**Description**

The AZ2940 is a low dropout three-terminal regulator with a typical dropout of 280mV at 1A output current.

The AZ2940 provides current limit and thermal shutdown. On-chip thermal shutdown provides protection against any combination of high current and ambient temperature that would create excessive junction temperatures.

The AZ2940 has 1.2V, 1.8V, 2.5V, 3.3V and 5.0V versions.

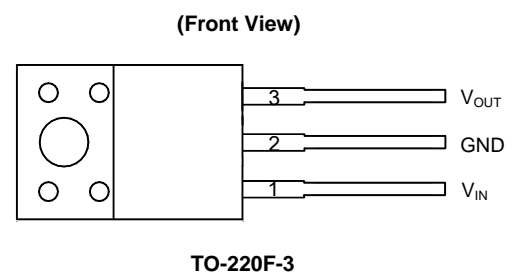
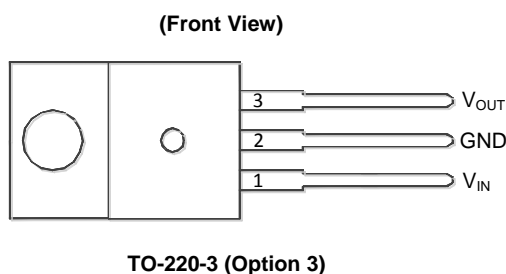
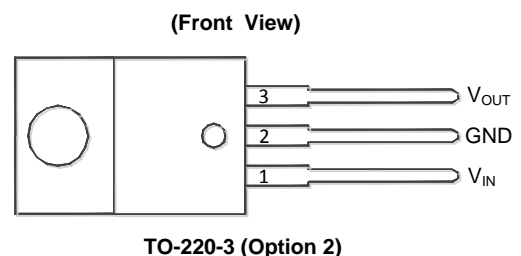
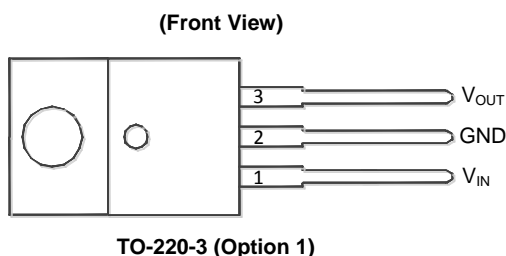
The AZ2940 series is available in the industry standard TO-220-3, TO-220F-3, TO-263-3, TO-252-2 (3), TO-252-2 (4), TO-252-2 (5) and SOT-223 power packages. (Detailed information please refer to pages 13, 14)

**Applications**

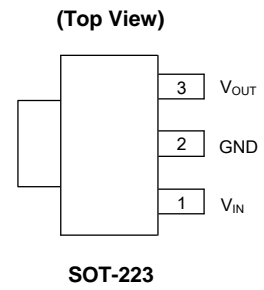
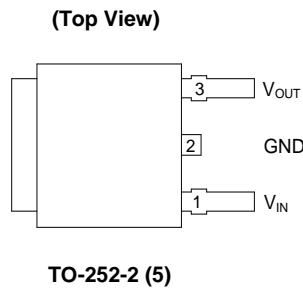
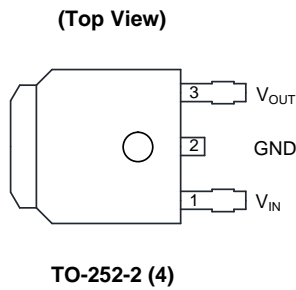
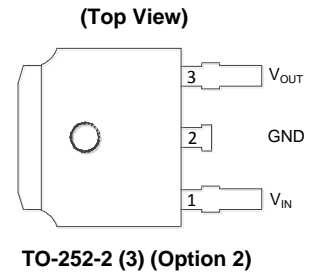
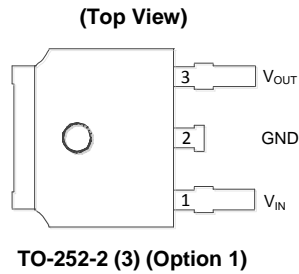
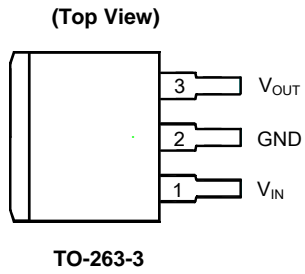
- LCD TV
- Set Top Box
- LCD Monitor
- SMPS Post Regulator
- Laptop, Palmtop and Notebook
- Portable Instrumentation
- USB Power Supply

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) 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.

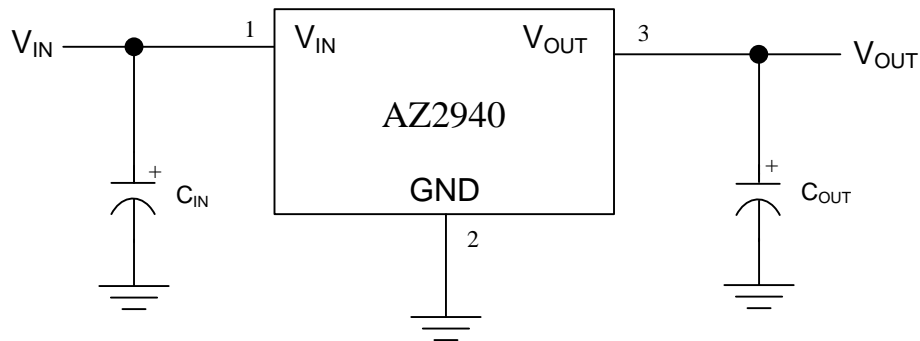
**Pin Assignments**



**Pin Assignments** (Cont.)



**Typical Applications Circuit** (Note 4)

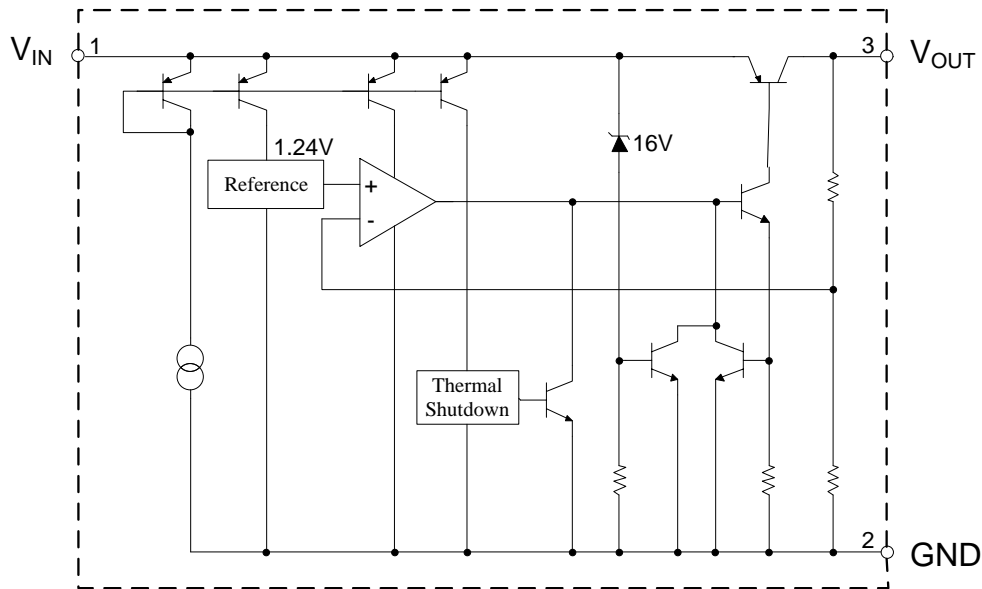


Note 4:  $C_{IN}$  is required if regulator is located far from power supply filter and is recommended to be  $0.47\mu\text{F}$  or greater. To maintain stability,  $C_{OUT}$  is recommended to be  $2.2\mu\text{F}$  or greater. The ESR of this capacitor is critical, please see curve.

**Pin Description**

| Pin Number | Pin Name  | Function  |
|------------|-----------|---|
| 1          | $V_{IN}$  | Unregulated Input                                     |
| 2          | GND       | Ground pin. This pin and TAB are internally connected |
| 3          | $V_{OUT}$ | Regulated Output                                      |

**Functional Block Diagram**



**Absolute Maximum Ratings** (Note 5)

| Symbol        | Parameter                                | Rating               |     | Unit |
|---------------|--|----------------------|-----|------|
| $V_{IN}$      | Input Voltage                            | 16                   |     | V    |
| $T_J$         | Operating Junction Temperature           | +150                 |     | °C   |
| $T_{STG}$     | Storage Temperature Range                | -65 to +150          |     | °C   |
| $T_{LEAD}$    | Lead Temperature (Soldering, 10sec)      | +260                 |     | °C   |
| $\theta_{JA}$ | Thermal Resistance (Junction to Ambient) | TO-220-3/TO-220F-3   | 60  | °C/W |
|               |  | TO-263-3             | 60  |      |
|               |  | TO-252-2 (3)/(4)/(5) | 100 |      |
|               |  | SOT-223              | 120 |      |
| ESD           | ESD (Human Body Model)                   | 5000                 |     | V    |
| ESD           | ESD (Machine Model)                      | 300                  |     | V    |

Note 5: 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.

**Recommended Operating Conditions**

| Symbol   | Parameter                      | Min | Max  | Unit |
|----------|--------------------------------|-----|------|------|
| $V_{IN}$ | Input Voltage                  | 2.5 | 13.2 | V    |
| $T_J$    | Operating Junction Temperature | -40 | +125 | °C   |

## Electrical Characteristics

### AZ2940-1.2 Electrical Characteristics

(Operating Conditions:  $V_{IN} = 2.5V$ ,  $I_{OUT} = 10mA$ ,  $C_{IN} = 10\mu F$ ,  $C_{OUT} = 10\mu F$ ,  $T_J = +25^\circ C$ , unless otherwise specified. The **Boldface** applies over  $-40^\circ C$  to  $+125^\circ C$ )

| Symbol                    | Parameter                              | Condition   | Min               | Typ        | Max          | Unit             |    |
|---------------------------|--|---|-------------------|------------|--------------|------------------|----|
| $V_{OUT}$                 | Output Voltage                         | $I_{OUT} = 10mA$  | 1.188             | 1.2        | 1.212        | V                |    |
|                           |  | $10mA \leq I_{OUT} \leq 1A$ , $2.5V \leq V_{IN} \leq 13.2V$ | <b>1.176</b>      | <b>1.2</b> | <b>1.224</b> | V                |    |
| $V_{RLINE}$               | Line Regulation                        | $I_{OUT} = 10mA$ , $2.5V \leq V_{IN} \leq 13.2V$            | –                 | 3.6        | 18           | mV               |    |
| $V_{RLOAD}$               | Load Regulation                        | $V_{IN} = 2.5V$ , $10mA \leq I_{OUT} \leq 1A$               | –                 | 5.4        | 27           | mV               |    |
| $\Delta V_{OUT}/\Delta T$ | Output Voltage Temperature Coefficient | $I_{OUT} = 10mA$  | –                 | –          | <b>180</b>   | $\mu V/^\circ C$ |    |
| $I_{GND}$                 | Ground Current                         | $V_{IN} = 2.5V$   | $I_{OUT} = 750mA$ | –          | 12           | <b>25</b>        | mA |
|                           |  |   | $I_{OUT} = 1A$    | –          | 18           | –                | mA |
| $I_{SC}$                  | Short Circuit Current                  | $V_{OUT} = 0V$ (Note 6)                                     | 1.5               | 2.2        | –            | A                |    |
| $I_{LOAD(MIN)}$           | Minimum Load Current                   | –   | –                 | 1          | 5            | mA               |    |
| –                         | Output Noise Voltage (rms)             | 10Hz to 100kHz, $I_{OUT} = 100mA$ ,<br>$C_{OUT} = 10\mu F$  | –                 | 400        | –            | $\mu V$          |    |
| $\theta_{JC}$             | Thermal Resistance                     | TO-252-2 (3)/(4)/(5)  | –                 | 7.8        | –            | $^\circ C/W$     |    |
|                           |  | SOT-223   | –                 | 29.7       | –            |                  |    |

Note 6:  $V_{IN} = V_{OUT(NOMINAL)} + 1V$ .

**Electrical Characteristics** (Cont.)

**AZ2940-1.8 Electrical Characteristics**

(Operating Conditions:  $V_{IN} = 2.8V$ ,  $I_{OUT} = 10mA$ ,  $C_{IN} = 10\mu F$ ,  $C_{OUT} = 10\mu F$ ,  $T_J = +25^\circ C$ , unless otherwise specified. The **Boldface** applies over  $-40^\circ C$  to  $+125^\circ C$ )

| Symbol                    | Parameter                              | Condition   | Min               | Typ        | Max          | Unit             |    |
|---------------------------|--|---|-------------------|------------|--------------|------------------|----|
| $V_{OUT}$                 | Output Voltage                         | $I_{OUT} = 10mA$  | 1.782             | 1.8        | 1.818        | V                |    |
|                           |  | $10mA \leq I_{OUT} \leq 1A$ , $2.8V \leq V_{IN} \leq 13.2V$ | <b>1.764</b>      | <b>1.8</b> | <b>1.836</b> | V                |    |
| $V_{RLINE}$               | Line Regulation                        | $I_{OUT} = 10mA$ , $2.8V \leq V_{IN} \leq 13.2V$            | –                 | 3.6        | 18           | mV               |    |
| $V_{RLOAD}$               | Load Regulation                        | $V_{IN} = 2.8V$ , $10mA \leq I_{OUT} \leq 1A$               | –                 | 5.4        | 27           | mV               |    |
| $\Delta V_{OUT}/\Delta T$ | Output Voltage Temperature Coefficient | $I_{OUT} = 10mA$  | –                 | <b>36</b>  | <b>180</b>   | $\mu V/^\circ C$ |    |
| $V_{DROP}$                | Dropout Voltage (Note 7)               | $\Delta V_{OUT} = 1\%$                                      | $I_{OUT} = 100mA$ | –          | 290          | <b>500</b>       | mV |
|                           |  |   | $I_{OUT} = 1A$    | –          | 330          | <b>750</b>       | mV |
| $I_{GND}$                 | Ground Current                         | $V_{IN} = 2.8V$   | $I_{OUT} = 750mA$ | –          | 12           | <b>25</b>        | mA |
|                           |  |   | $I_{OUT} = 1A$    | –          | 18           | –                | mA |
| $I_{SC}$                  | Short Circuit Current                  | $V_{OUT} = 0V$ (Note 6)                                     | 1.5               | 2.2        | –            | A                |    |
| $I_{LOAD (MIN)}$          | Minimum Load Current                   | –   | –                 | 1          | 5            | mA               |    |
| –                         | Output Noise Voltage (rms)             | 10Hz to 100kHz, $I_{OUT} = 100mA$ ,<br>$C_{OUT} = 10\mu F$  | –                 | 400        | –            | $\mu V$          |    |
| $\theta_{JC}$             | Thermal Resistance                     | TO-252-2 (3)/(4)/(5)  | –                 | 7.8        | –            | $^\circ C/W$     |    |
|                           |  | SOT-223   | –                 | 29.7       | –            |                  |    |

Notes: 6.  $V_{IN} = V_{OUT(NOMINAL)} + 1V$ .

7. Dropout voltage is defined as the input-to-output differential when the output voltage drops to 99% of its nominal value which is measured at  $V_{OUT} + 1V$  applied to  $V_{IN}$ . In application,  $V_{IN}$  should be no less than 2.5V.

**Electrical Characteristics** (Cont.)

**AZ2940-2.5 Electrical Characteristics**

(Operating Conditions:  $V_{IN} = 3.5V$ ,  $I_{OUT} = 10mA$ ,  $C_{IN} = 10\mu F$ ,  $C_{OUT} = 10\mu F$ ,  $T_J = +25^\circ C$ , unless otherwise specified. The **Boldface** applies over  $-40^\circ C$  to  $+125^\circ C$ )

| Symbol                    | Parameter                              | Condition   | Min               | Typ        | Max         | Unit             |    |
|---------------------------|--|---|-------------------|------------|-------------|------------------|----|
| $V_{OUT}$                 | Output Voltage                         | $I_{OUT} = 10mA$  | 2.475             | 2.5        | 2.525       | V                |    |
|                           |  | $10mA \leq I_{OUT} \leq 1A$ , $3.5V \leq V_{IN} \leq 13.2V$ | <b>2.45</b>       | <b>2.5</b> | <b>2.55</b> | V                |    |
| $V_{RLINE}$               | Line Regulation                        | $I_{OUT} = 10mA$ , $3.5V \leq V_{IN} \leq 13.2V$            | –                 | 5.0        | 25          | mV               |    |
| $V_{RLOAD}$               | Load Regulation                        | $V_{IN} = 3.5V$ , $10mA \leq I_{OUT} \leq 1A$               | –                 | 7.5        | 37.5        | mV               |    |
| $\Delta V_{OUT}/\Delta T$ | Output Voltage Temperature Coefficient | $I_{OUT} = 10mA$  | –                 | <b>50</b>  | <b>250</b>  | $\mu V/^\circ C$ |    |
| $V_{DROP}$                | Dropout Voltage (Note 8)               | $\Delta V_{OUT} = 1\%$                                      | $I_{OUT} = 100mA$ | –          | 70          | <b>200</b>       | mV |
|                           |  |   | $I_{OUT} = 1A$    | –          | 280         | <b>550</b>       | mV |
| $I_{GND}$                 | Ground Current                         | $V_{IN} = 3.5V$   | $I_{OUT} = 750mA$ | –          | 12          | <b>25</b>        | mA |
|                           |  |   | $I_{OUT} = 1A$    | –          | 18          | –                | mA |
| $I_{SC}$                  | Short Circuit Current                  | $V_{OUT} = 0V$ (Note 6)                                     | 1.5               | 2.2        | –           | A                |    |
| $I_{LOAD (MIN)}$          | Minimum Load Current                   | –   | –                 | 1          | 5           | mA               |    |
| –                         | Output Noise Voltage (rms)             | 10Hz to 100kHz, $I_{OUT} = 100mA$ ,<br>$C_{OUT} = 10\mu F$  | –                 | 400        | –           | $\mu V$          |    |
| $\theta_{JC}$             | Thermal Resistance                     | TO-252-2 (3)/(4)/(5)  | –                 | 7.8        | –           | $^\circ C/W$     |    |
|                           |  | SOT-223   | –                 | 29.7       | –           |                  |    |

- Notes:
- 6.  $V_{IN} = V_{OUT(NOMINAL)} + 1V$ .
  - 8. Dropout voltage is defined as the input-to-output differential when the output voltage drops to 99% of its nominal value which is measured at  $V_{OUT} + 1V$  applied to  $V_{IN}$ .

**Electrical Characteristics** (Cont.)

**AZ2940-3.3 Electrical Characteristics**

(Operating Conditions:  $V_{IN} = 4.3V$ ,  $I_{OUT} = 10mA$ ,  $C_{IN} = 10\mu F$ ,  $C_{OUT} = 10\mu F$ ,  $T_J = +25^\circ C$ , unless otherwise specified. The **Boldface** applies over -40°C to +125°C)

| Symbol                    | Parameter                              | Condition   | Min               | Typ        | Max         | Unit             |    |
|---------------------------|--|---|-------------------|------------|-------------|------------------|----|
| $V_{OUT}$                 | Output Voltage                         | $I_{OUT} = 10mA$  | 3.27              | 3.3        | 3.33        | V                |    |
|                           |  | $10mA \leq I_{OUT} \leq 1A$ , $4.3V \leq V_{IN} \leq 13.2V$ | <b>3.23</b>       | <b>3.3</b> | <b>3.37</b> | V                |    |
| $V_{RLINE}$               | Line Regulation                        | $I_{OUT} = 10mA$ , $4.3V \leq V_{IN} \leq 13.2V$            | -                 | 6.6        | 33          | mV               |    |
| $V_{RLOAD}$               | Load Regulation                        | $V_{IN} = 4.3V$ , $10mA \leq I_{OUT} \leq 1A$               | -                 | 9.9        | 50          | mV               |    |
| $\Delta V_{OUT}/\Delta T$ | Output Voltage Temperature Coefficient | $I_{OUT} = 10mA$  | -                 | <b>66</b>  | <b>330</b>  | $\mu V/^\circ C$ |    |
| $V_{DROP}$                | Dropout Voltage (Note 8)               | $\Delta V_{OUT} = 1\%$                                      | $I_{OUT} = 100mA$ | -          | 70          | <b>200</b>       | mV |
|                           |  |   | $I_{OUT} = 1A$    | -          | 280         | <b>550</b>       | mV |
| $I_{GND}$                 | Ground Current                         | $V_{IN} = 4.3V$   | $I_{OUT} = 750mA$ | -          | 12          | <b>25</b>        | mA |
|                           |  |   | $I_{OUT} = 1A$    | -          | 18          | -                | mA |
| $I_{SC}$                  | Short Circuit Current                  | $V_{OUT} = 0V$ (Note 6)                                     | 1.5               | 2.2        | -           | A                |    |
| $I_{LOAD (MIN)}$          | Minimum Load Current                   | -   | -                 | 1          | 5           | mA               |    |
| -                         | Output Noise Voltage (rms)             | 10Hz to 100kHz, $I_{OUT} = 100mA$ , $C_{OUT} = 10\mu F$     | -                 | 400        | -           | $\mu V$          |    |
| $\theta_{JC}$             | Thermal Resistance                     | TO-220-3  | -                 | 4.4        | -           | $^\circ C/W$     |    |
|                           |  | TO-263-3  | -                 | 4.4        | -           |                  |    |
|                           |  | TO-252-2 (3)/(4)/(5)  | -                 | 7.8        | -           |                  |    |
|                           |  | SOT-223   | -                 | 29.7       | -           |                  |    |

Notes: 6.  $V_{IN} = V_{OUT(NOMINAL)} + 1V$ .

8. Dropout voltage is defined as the input-to-output differential when the output voltage drops to 99% of its nominal value which is measured at  $V_{OUT} + 1V$  applied to  $V_{IN}$ .

**Electrical Characteristics** (Cont.)

**AZ2940-5.0 Electrical Characteristics**

(Operating Conditions:  $V_{IN} = 6V$ ,  $I_{OUT} = 10mA$ ,  $C_{IN} = 10\mu F$ ,  $C_{OUT} = 10\mu F$ ,  $T_J = +25^\circ C$ , unless otherwise specified. The **Boldface** applies over  $-40^\circ C$  to  $+125^\circ C$ )

| Symbol                    | Parameter                              | Condition   | Min               | Typ        | Max         | Unit             |    |
|---------------------------|--|---|-------------------|------------|-------------|------------------|----|
| $V_{OUT}$                 | Output Voltage                         | $I_{OUT} = 10mA$  | 4.95              | 5.0        | 5.05        | V                |    |
|                           |  | $10mA \leq I_{OUT} \leq 1A$ , $6V \leq V_{IN} \leq 13.2V$ | <b>4.90</b>       | <b>5.0</b> | <b>5.10</b> | V                |    |
| $V_{RLINE}$               | Line Regulation                        | $I_{OUT} = 10mA$ , $6V \leq V_{IN} \leq 13.2V$            | –                 | 10         | 50          | mV               |    |
| $V_{RLOAD}$               | Load Regulation                        | $V_{IN} = 6V$ , $10mA \leq I_{OUT} \leq 1A$               | –                 | 15         | 75          | mV               |    |
| $\Delta V_{OUT}/\Delta T$ | Output Voltage Temperature Coefficient | $I_{OUT} = 10mA$  | –                 | <b>100</b> | <b>500</b>  | $\mu V/^\circ C$ |    |
| $V_{DROP}$                | Dropout Voltage (Note 8)               | $\Delta V_{OUT} = 1\%$                                    | $I_{OUT} = 100mA$ | –          | 70          | <b>200</b>       | mV |
|                           |  |   | $I_{OUT} = 1A$    | –          | 280         | <b>550</b>       | mV |
| $I_{GND}$                 | Ground Current                         | $V_{IN} = 6V$   | $I_{OUT} = 750mA$ | –          | 12          | <b>25</b>        | mA |
|                           |  |   | $I_{OUT} = 1A$    | –          | 18          | –                | mA |
| $I_{SC}$                  | Short Circuit Current                  | $V_{OUT} = 0V$ (Note 6)                                   | 1.5               | 2.2        | –           | A                |    |
| $I_{LOAD (MIN)}$          | Minimum Load Current                   | –   | –                 | 1          | 5           | mA               |    |
| –                         | Output Noise Voltage (rms)             | 10Hz to 100kHz, $I_{OUT} = 100mA$ , $C_{OUT} = 10\mu F$   | –                 | 400        | –           | $\mu V$          |    |
| $\theta_{JC}$             | Thermal Resistance                     | TO-220-3/TO-220F-3  | –                 | 4.4        | –           | $^\circ C/W$     |    |
|                           |  | TO-263-3  | –                 | 4.4        | –           |                  |    |
|                           |  | TO-252-2 (3)/(4)/(5)                                      | –                 | 7.8        | –           |                  |    |
|                           |  | SOT-223   | –                 | 29.7       | –           |                  |    |

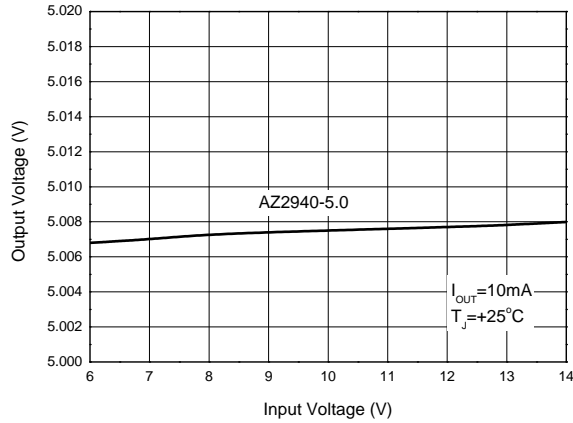
Notes: 6.  $V_{IN} = V_{OUT(NOMINAL)} + 1V$ .

8. Dropout voltage is defined as the input-to-output differential when the output voltage drops to 99% of its nominal value which is measured at  $V_{OUT} + 1V$  applied to  $V_{IN}$ .

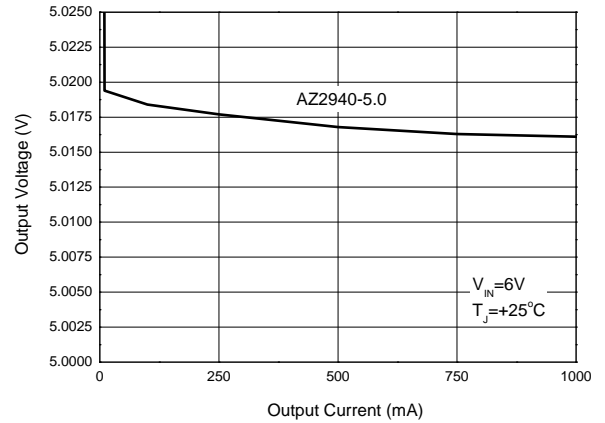


**Performance Characteristics**

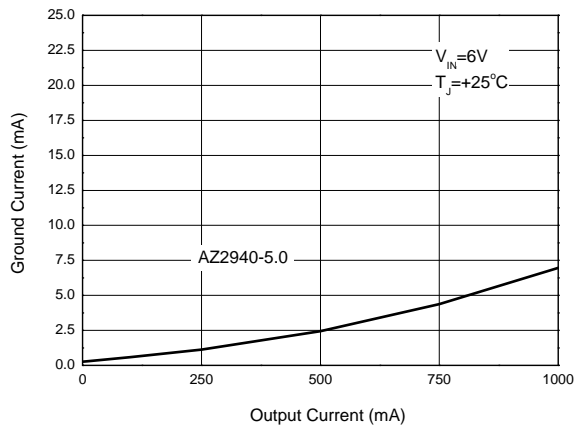
**Line Regulation**



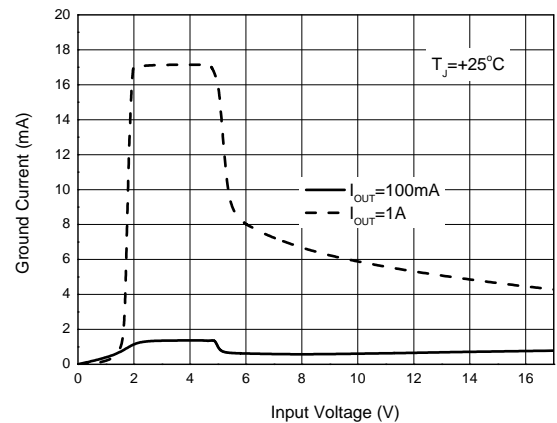
**Load Regulation**



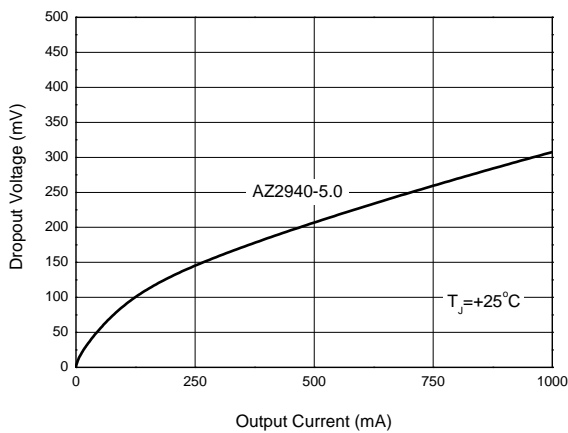
**Ground Current vs. Output Current**



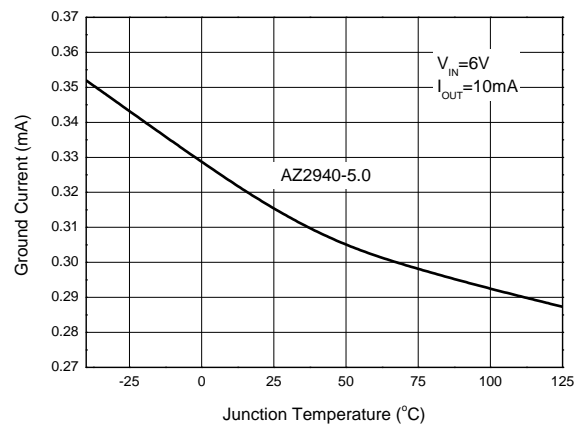
**Ground Current vs. Input Voltage**



**Dropout Voltage vs. Output Current**

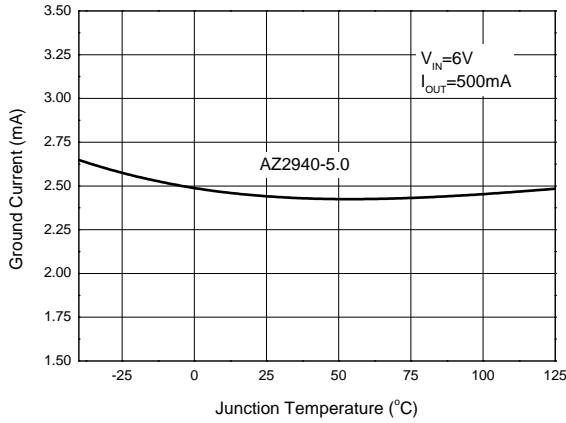


**Ground Current vs. Junction Temperature**

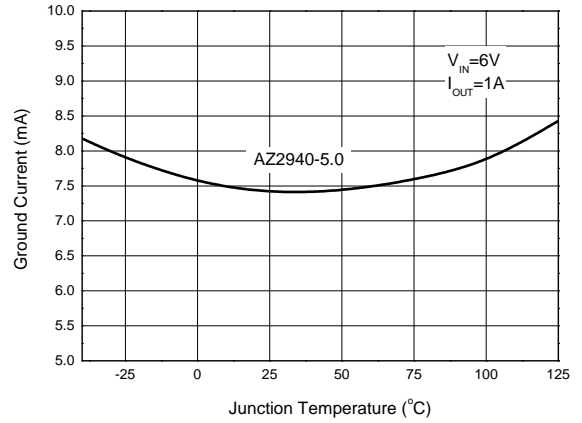


**Performance Characteristics (Cont.)**

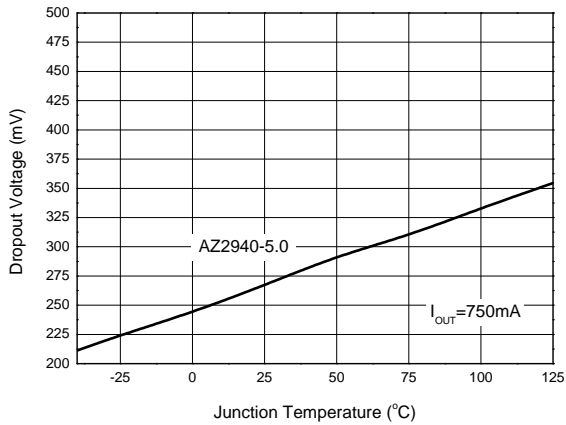
**Ground Current vs. Junction Temperature**



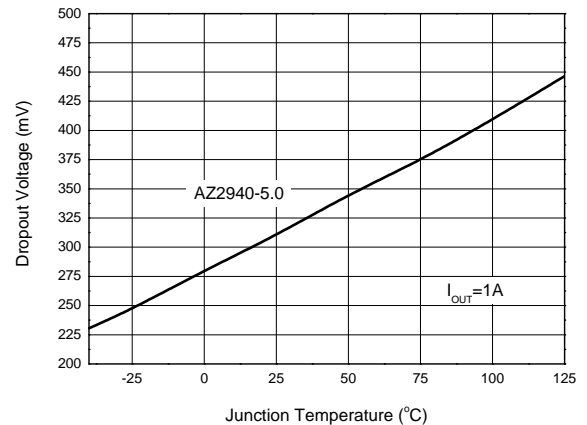
**Ground Current vs. Junction Temperature**



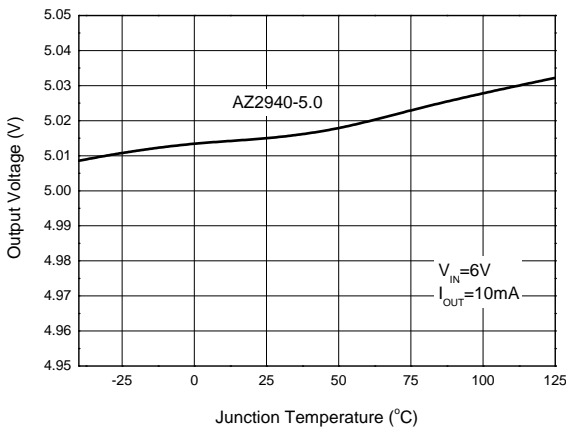
**Dropout Voltage vs. Junction Temperature**



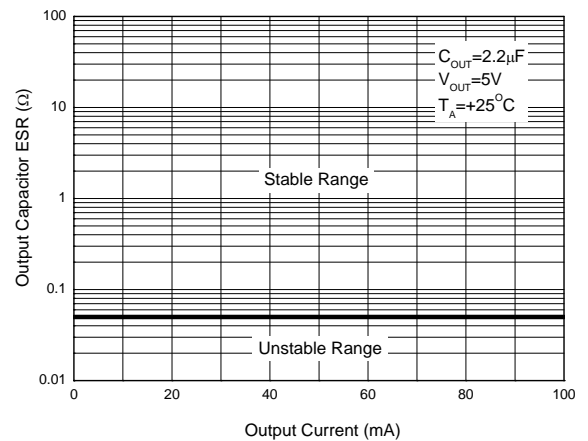
**Dropout Voltage vs. Junction Temperature**



**Output Voltage vs. Junction Temperature**

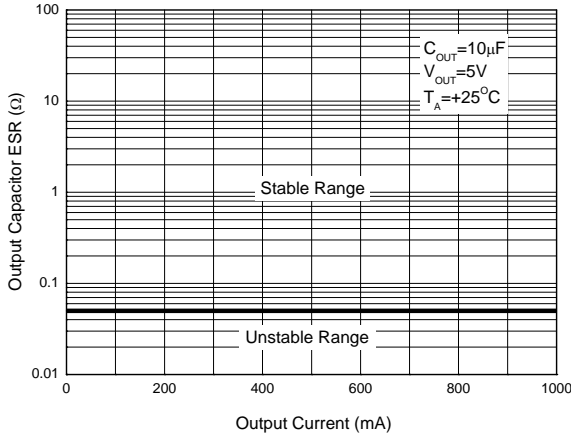


**Output Capacitor ESR vs. Output Current**

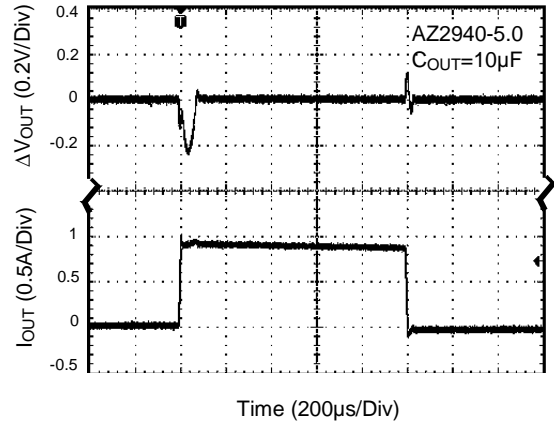


**Performance Characteristics (Cont.)**

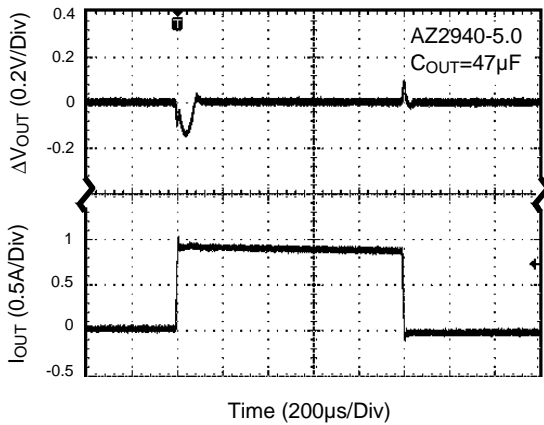
**Output Capacitor ESR vs. Output Current**



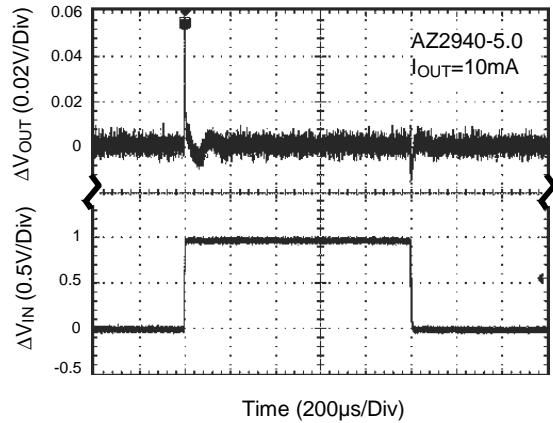
**Load Transient**



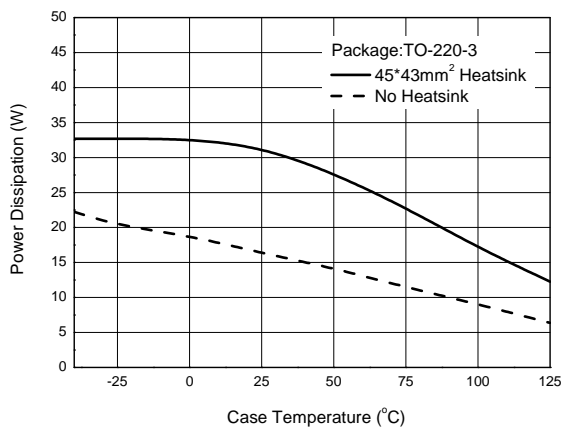
**Load Transient**



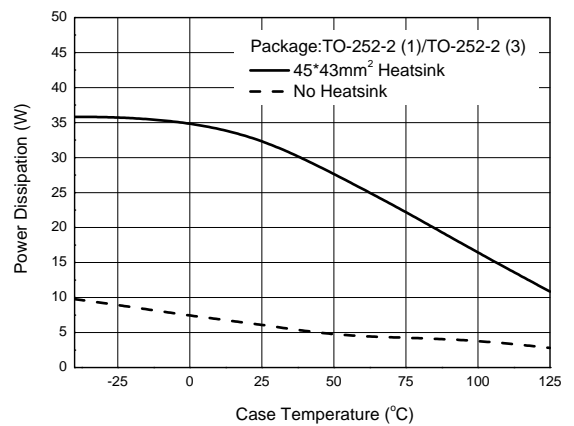
**Line Transient**



**Power Dissipation vs. Case Temperature**

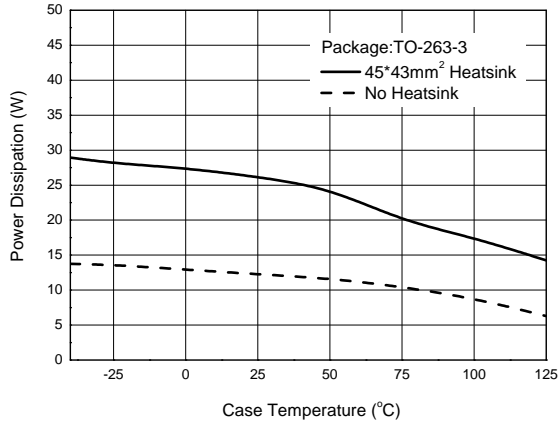


**Power Dissipation vs. Case Temperature**



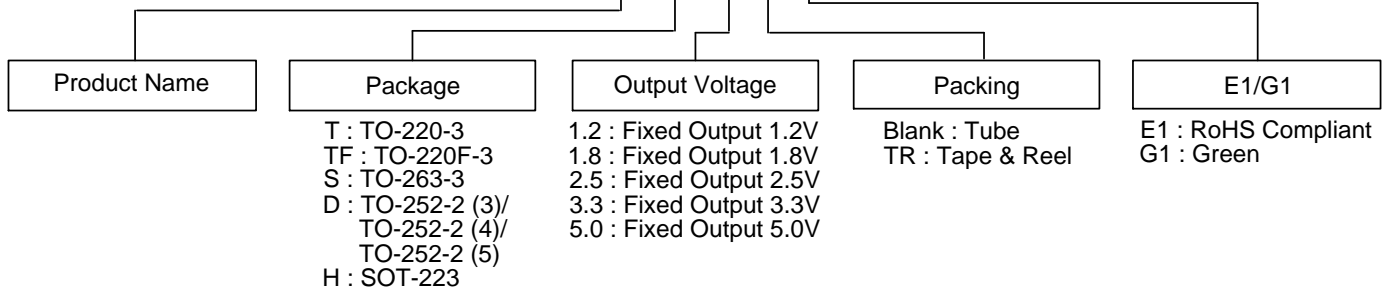
**Performance Characteristics (Cont.)**

**Power Dissipation vs. Case Temperature**



## Ordering Information

**AZ2940 XX - XX XX XX**



| Package                                       | Temperature Range | Part Number     |                 | Marking ID     |                | Packing          |
|---|-------------------|-----------------|-----------------|----------------|----------------|------------------|
|   |                   | RoHS Compliant  | Green           | RoHS Compliant | Green          |                  |
| TO-220-3                                      | -40 to +125°C     | AZ2940T-3.3E1   | AZ2940T-3.3G1   | AZ2940T-3.3E1  | AZ2940T-3.3G1  | 1000/Tube        |
|   |                   | AZ2940T-5.0E1   | AZ2940T-5.0G1   | AZ2940T-5.0E1  | AZ2940T-5.0G1  | 1000/Tube        |
| TO-220F-3                                     | -40 to +125°C     | -               | AZ2940TF-5.0G1  | -              | AZ2940TF-5.0G1 | 1000/Tube        |
| TO-263-3                                      | -40 to +125°C     | AZ2940S-3.3E1   | AZ2940S-3.3G1   | AZ2940S-3.3E1  | AZ2940S-3.3G1  | 1000/Tube        |
|   |                   | AZ2940S-3.3TRE1 | AZ2940S-3.3TRG1 | AZ2940S-3.3E1  | AZ2940S-3.3G1  | 2500/Tape & Reel |
|   |                   | AZ2940S-5.0E1   | AZ2940S-5.0G1   | AZ2940S-5.0E1  | AZ2940S-5.0G1  | 1000/Tube        |
|   |                   | AZ2940S-5.0TRE1 | AZ2940S-5.0TRG1 | AZ2940S-5.0E1  | AZ2940S-5.0G1  | 2500/Tape & Reel |
| TO-252-2 (3)/<br>TO-252-2 (4)/<br>TO-252-2(5) | -40 to +125°C     | -               | AZ2940D-1.2G1   | -              | AZ2940D-1.2G1  | 1000/Tube        |
|   |                   | -               | AZ2940D-1.2TRG1 | -              | AZ2940D-1.2G1  | 2500/Tape & Reel |
|   |                   | AZ2940D-1.8E1   | AZ2940D-1.8G1   | AZ2940D-1.8E1  | AZ2940D-1.8G1  | 1000/Tube        |
|   |                   | AZ2940D-1.8TRE1 | AZ2940D-1.8TRG1 | AZ2940D-1.8E1  | AZ2940D-1.8G1  | 2500/Tape & Reel |
|   |                   | AZ2940D-2.5E1   | AZ2940D-2.5G1   | AZ2940D-2.5E1  | AZ2940D-2.5G1  | 1000/Tube        |
|   |                   | AZ2940D-2.5TRE1 | AZ2940D-2.5TRG1 | AZ2940D-2.5E1  | AZ2940D-2.5G1  | 2500/Tape & Reel |
|   |                   | AZ2940D-3.3E1   | AZ2940D-3.3G1   | AZ2940D-3.3E1  | AZ2940D-3.3G1  | 1000/Tube        |
|   |                   | AZ2940D-3.3TRE1 | AZ2940D-3.3TRG1 | AZ2940D-3.3E1  | AZ2940D-3.3G1  | 2500/Tape & Reel |
|   |                   | AZ2940D-5.0E1   | AZ2940D-5.0G1   | AZ2940D-5.0E1  | AZ2940D-5.0G1  | 1000/Tube        |
|   |                   | AZ2940D-5.0TRE1 | AZ2940D-5.0TRG1 | AZ2940D-5.0E1  | AZ2940D-5.0G1  | 2500/Tape & Reel |

**Ordering Information** (Cont.)

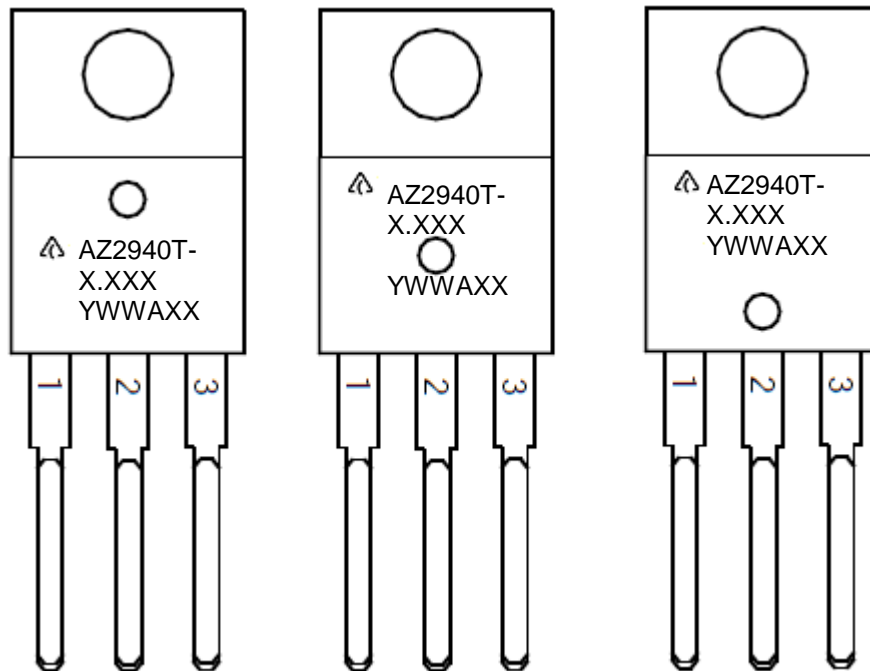


| Package | Temperature Range | Part Number    |                 | Marking ID     |       | Packing          |
|---------|-------------------|----------------|-----------------|----------------|-------|------------------|
|         |                   | RoHS Compliant | Green           | RoHS Compliant | Green |                  |
| SOT-223 | -40 to +125°C     | -              | AZ2940H-1.2TRG1 | -              | GH12B | 2500/Tape & Reel |
|         |                   | -              | AZ2940H-1.8TRG1 | -              | GH12F | 2500/Tape & Reel |
|         |                   | -              | AZ2940H-2.5TRG1 | -              | GH12G | 2500/Tape & Reel |
|         |                   | -              | AZ2940H-3.3TRG1 | -              | GH12H | 2500/Tape & Reel |
|         |                   | -              | AZ2940H-5.0TRG1 | -              | GH12J | 2500/Tape & Reel |

**Marking Information**

(1) TO-220-3

(Front View)

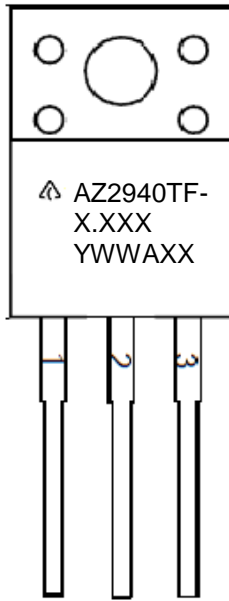


First and Second Lines: Logo and Marking ID  
(See Ordering Information)  
Third Line: Date Code  
Y: Year  
WW: Work Week of Molding  
A: Assembly House Code  
XX: Internal Code

**Marking Information (Cont.)**

(2) TO-220F-3

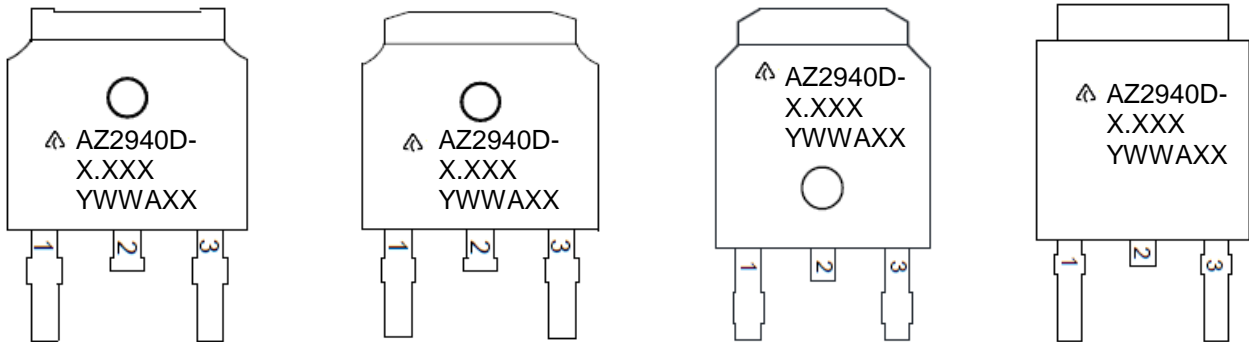
(Front View)



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: Internal Code

(3) TO-252-2(3)(4)(5)

(Top View)

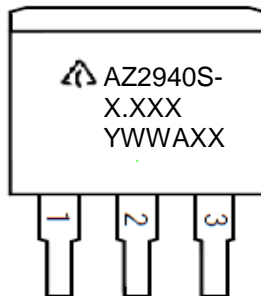


First and Second Lines: Logo and Marking ID  
(See Ordering Information)  
Third Line: Date Code  
Y: Year  
WW: Work Week of Molding  
A: Assembly House Code  
XX: Internal Code

**Marking Information** (Cont.)

(4) TO-263-3

(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: Internal Code

(5) SOT-223

(Top View)

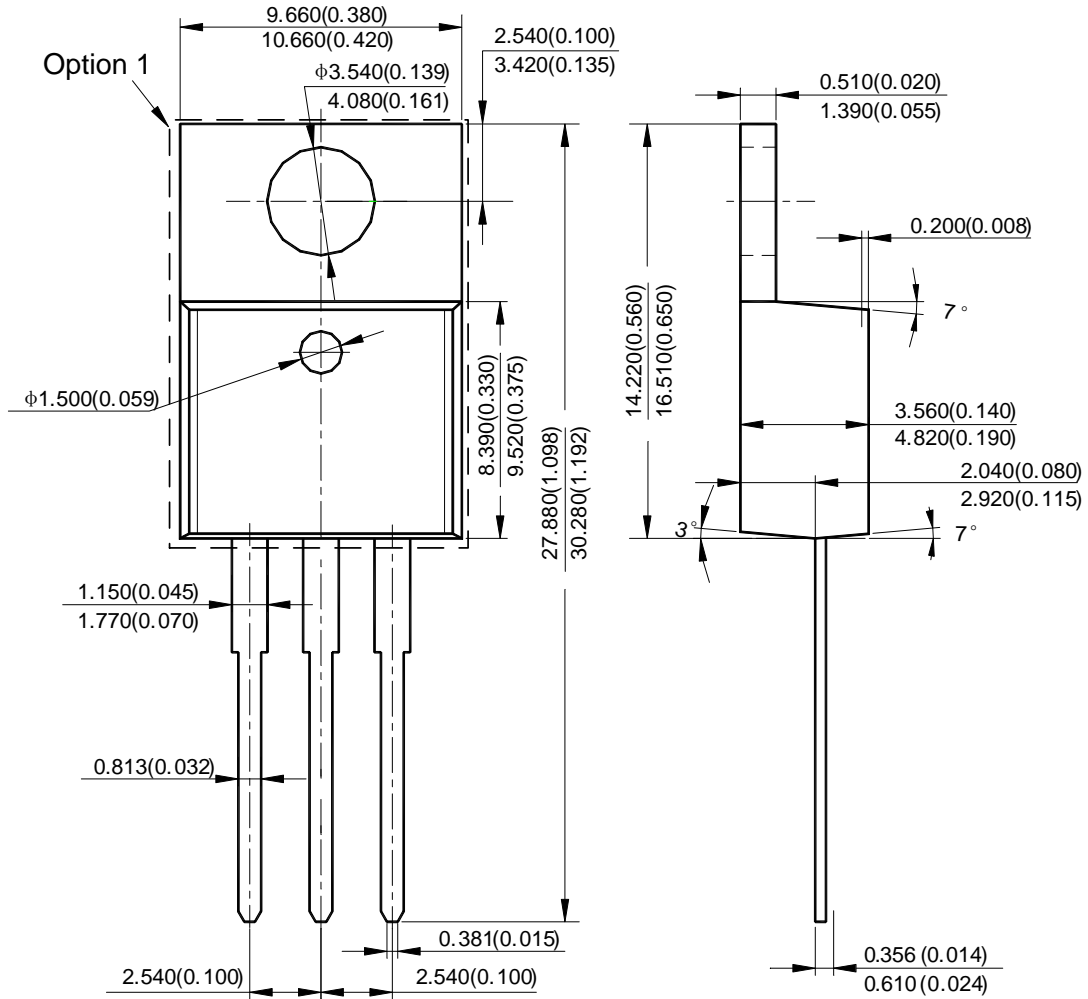


First Line: Logo and Marking ID  
(See Ordering Information)  
Second Line: Date Code  
Y: Year  
WW: Work Week of Molding  
A: Assembly House Code  
XX: Internal Code

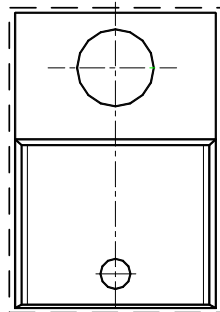


**Package Outline Dimensions** (All dimensions in mm(inch).)

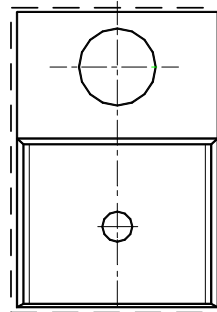
(1) Package Type: TO-220-3



Option 2

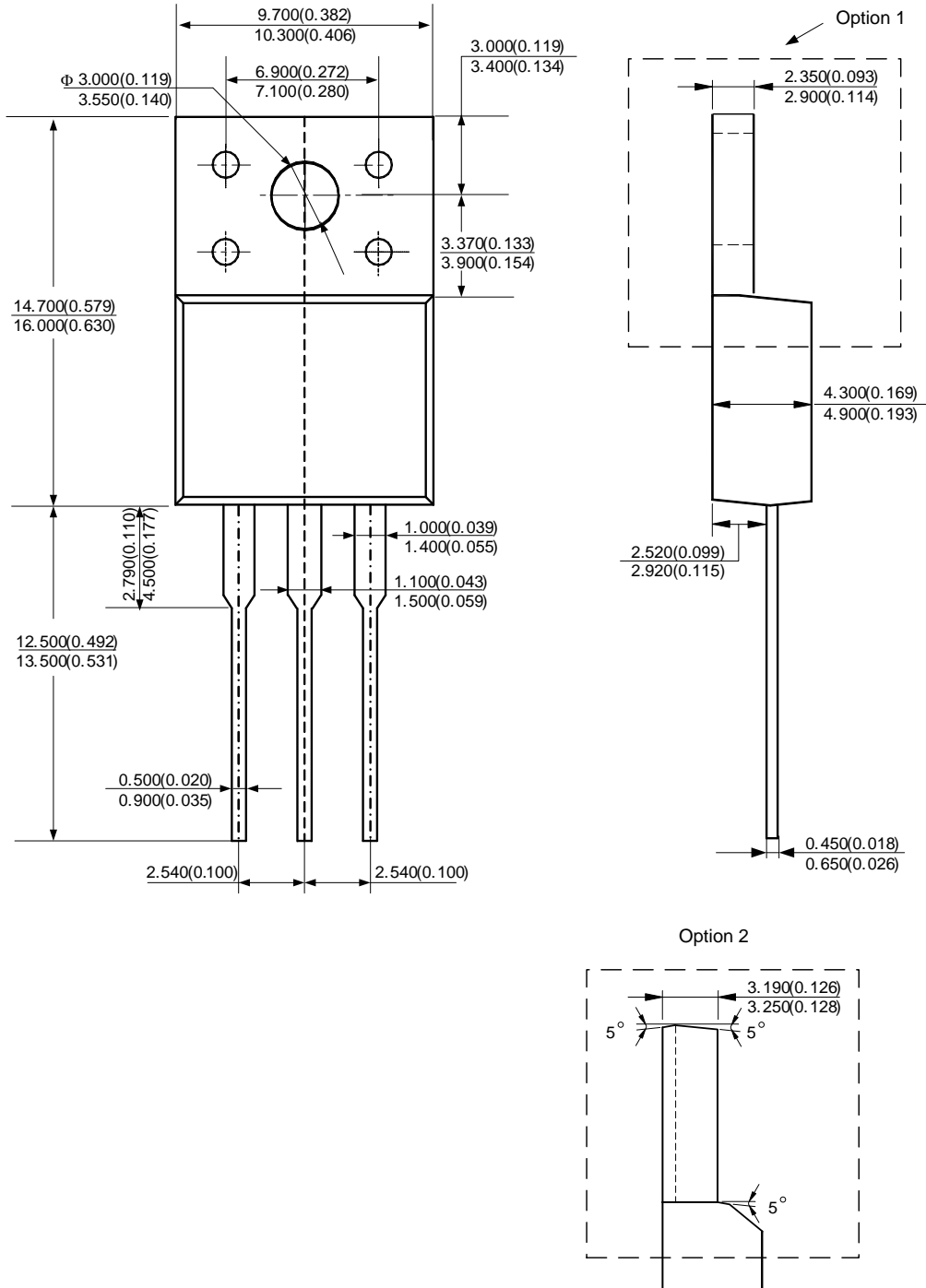


Option 3



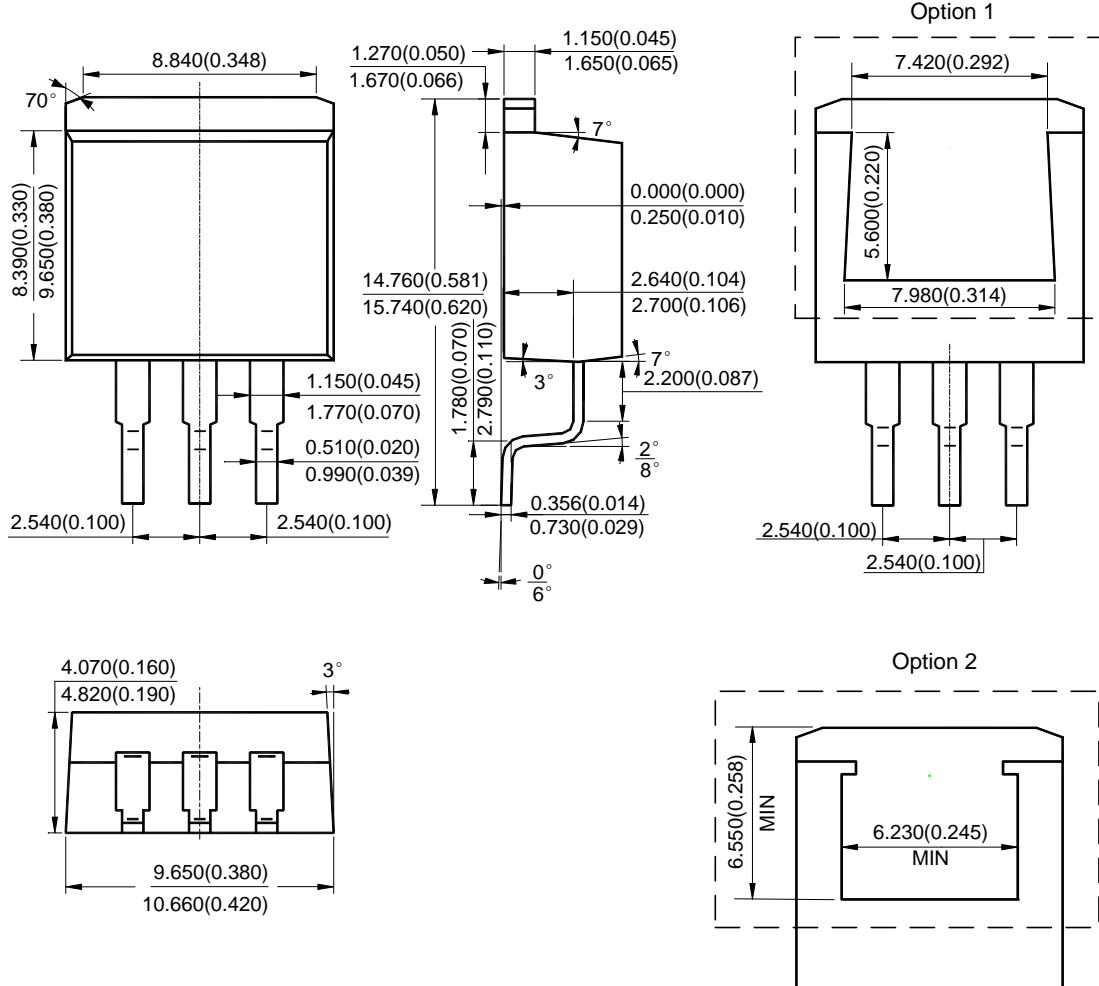
**Package Outline Dimensions** (Cont. All dimensions in mm(inch).)

(2) Package Type: TO-220F-3



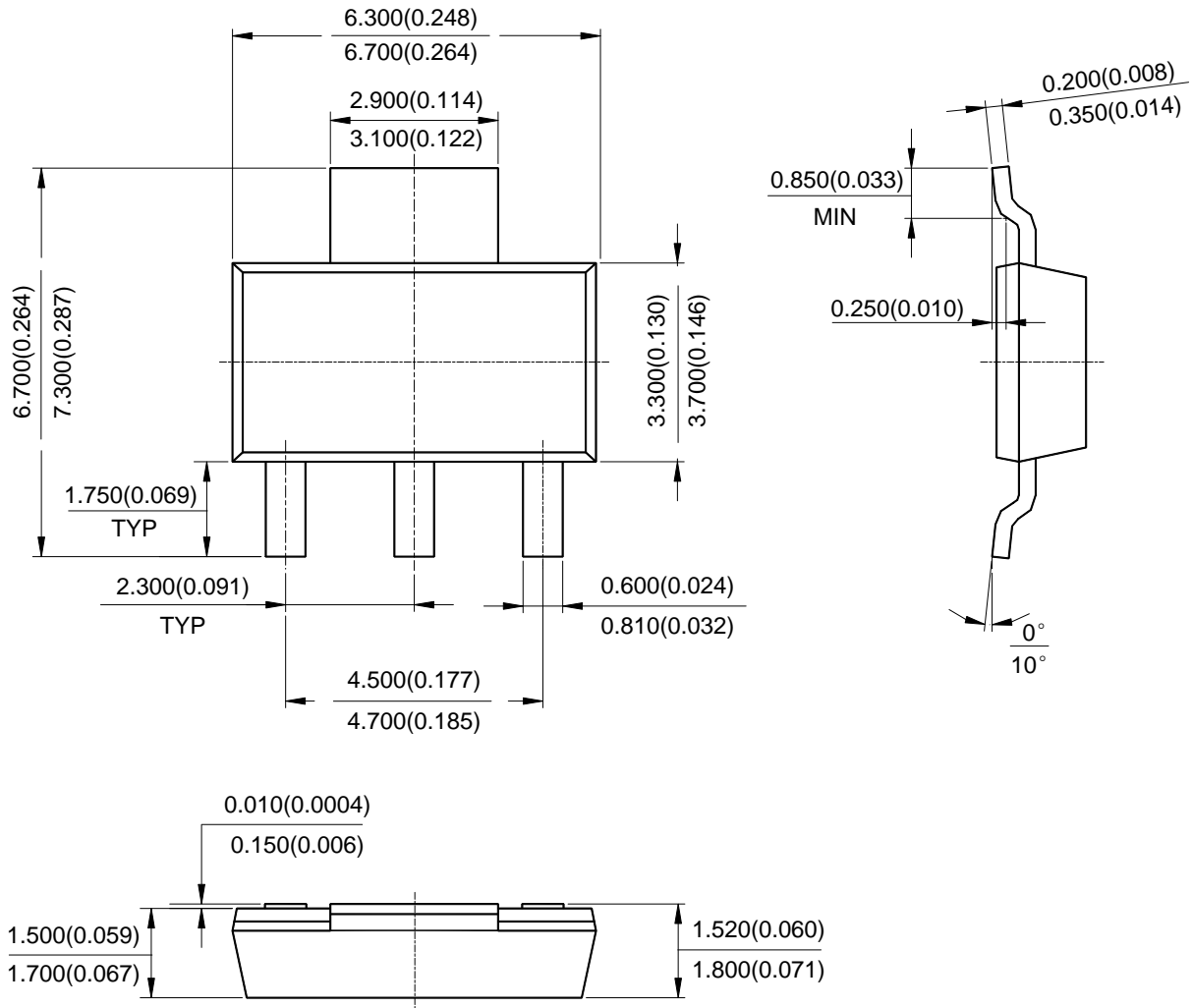
**Package Outline Dimensions** (Cont. All dimensions in mm(inch).)

(3) Package Type: TO-263-3



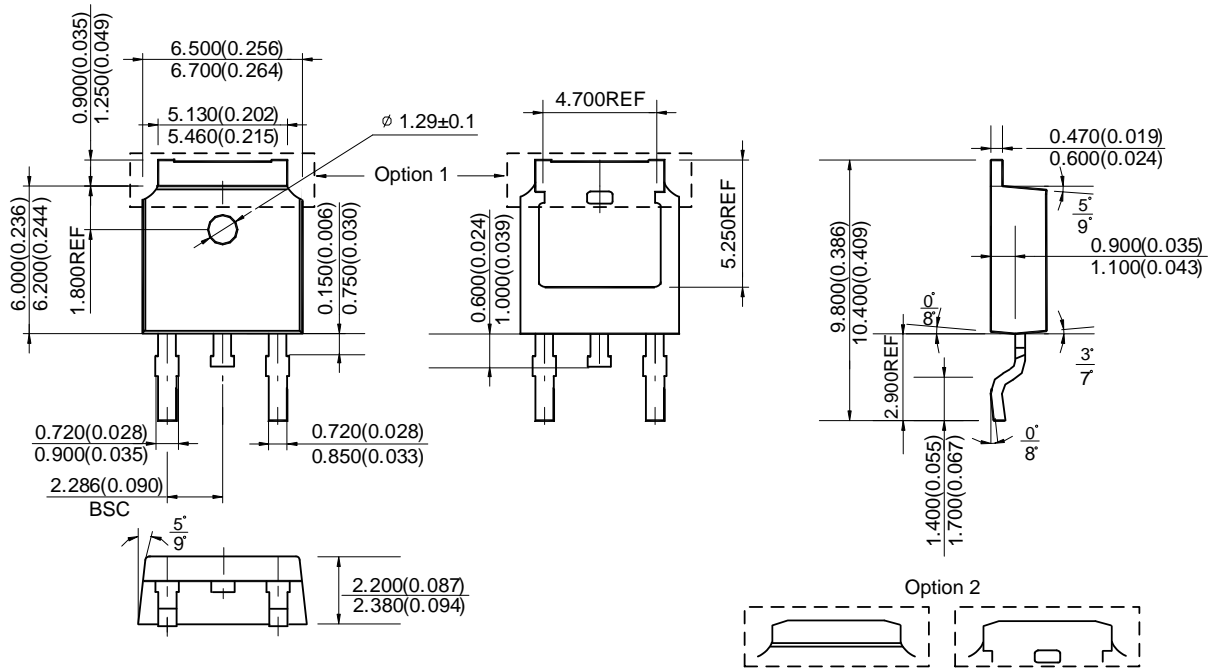
**Package Outline Dimensions** (Cont. All dimensions in mm(inch).)

(4) Package Type: SOT-223



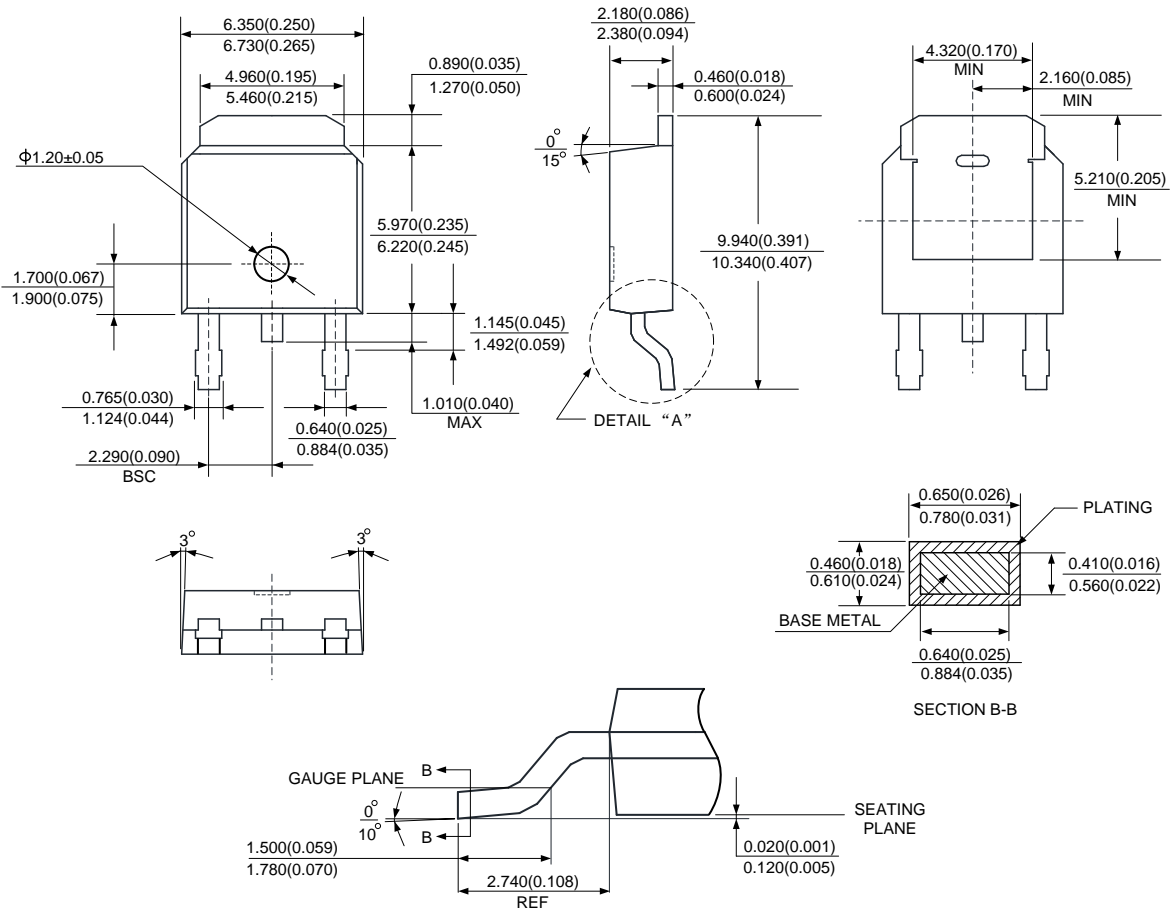
**Package Outline Dimensions** (Cont. All dimensions in mm(inch).)

(5) Package Type: TO-252-2 (3)



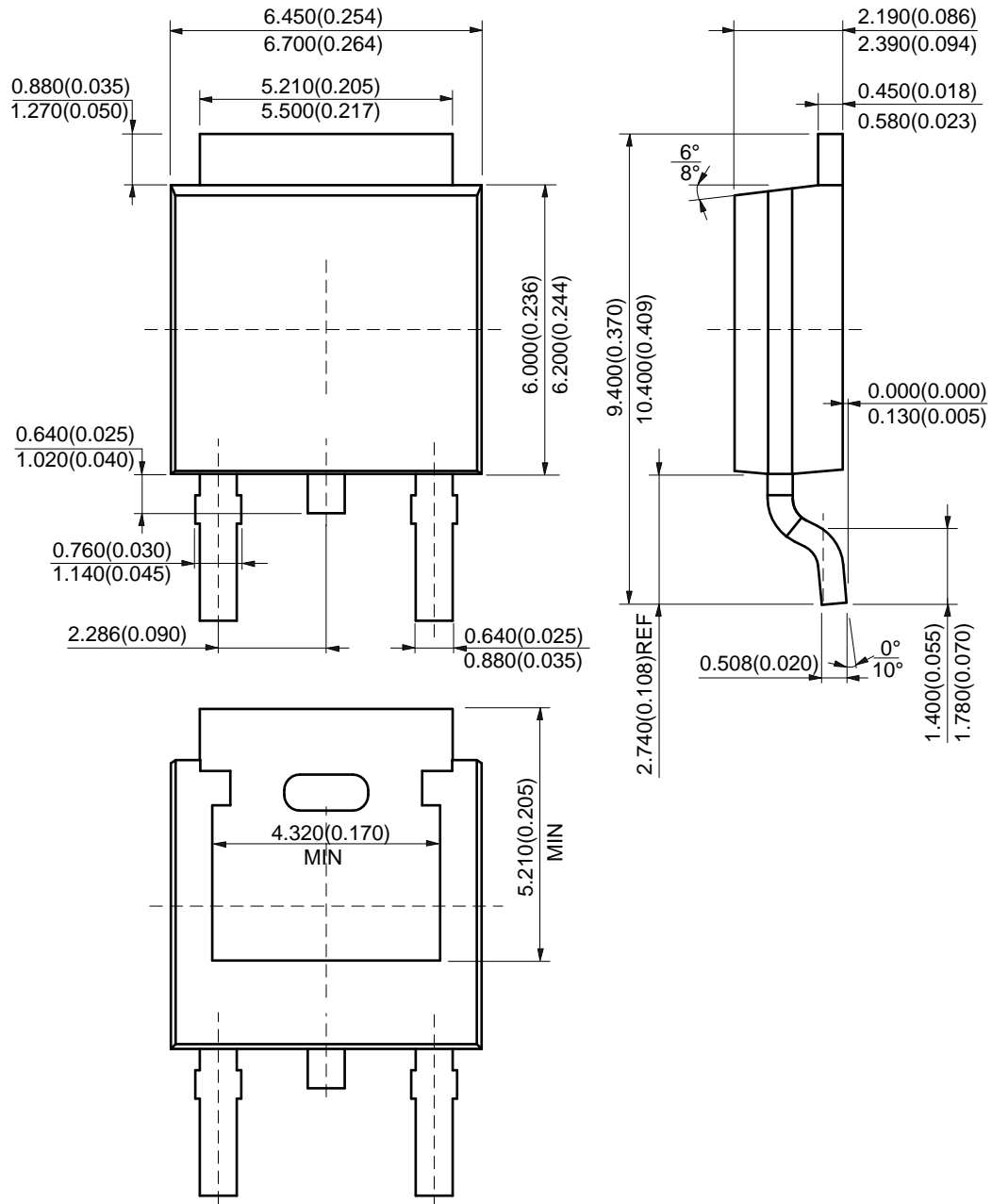
**Package Outline Dimensions** (Cont. All dimensions in mm(inch).)

(6) Package Type: TO-252-2 (4)



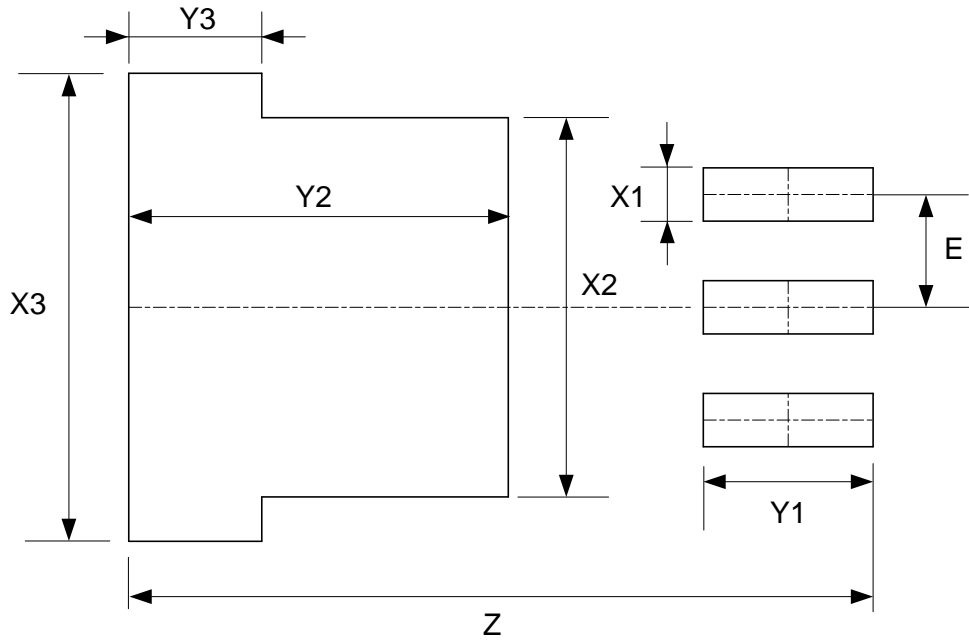
**Package Outline Dimensions** (Cont. All dimensions in mm(inch).)

(7) Package Type: TO-252-2 (5)



**Suggested Pad Layout**

(1) Package Type: TO-263-3

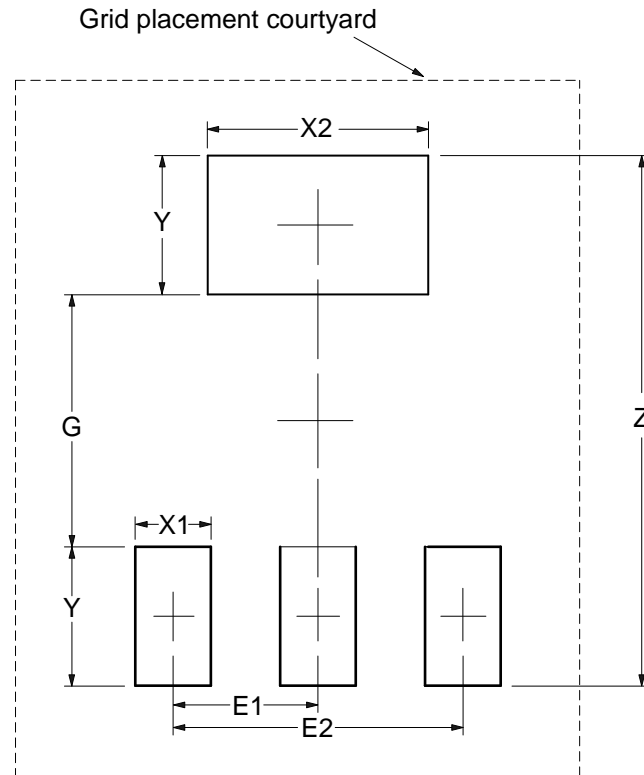


|            |                   |                   |                   |                   |
|------------|-------------------|-------------------|-------------------|-------------------|
| Dimensions | Z<br>(mm)/(inch)  | X1<br>(mm)/(inch) | X2<br>(mm)/(inch) | X3<br>(mm)/(inch) |
| Value      | 16.760/0.660      | 1.200/0.047       | 8.540/0.336       | 10.540/0.415      |
| Dimensions | Y1<br>(mm)/(inch) | Y2<br>(mm)/(inch) | Y3<br>(mm)/(inch) | E<br>(mm)/(inch)  |
| Value      | 3.830/0.151       | 8.560/0.337       | 3.000/0.118       | 2.540/0.100       |



**Suggested Pad Layout** (Cont.)

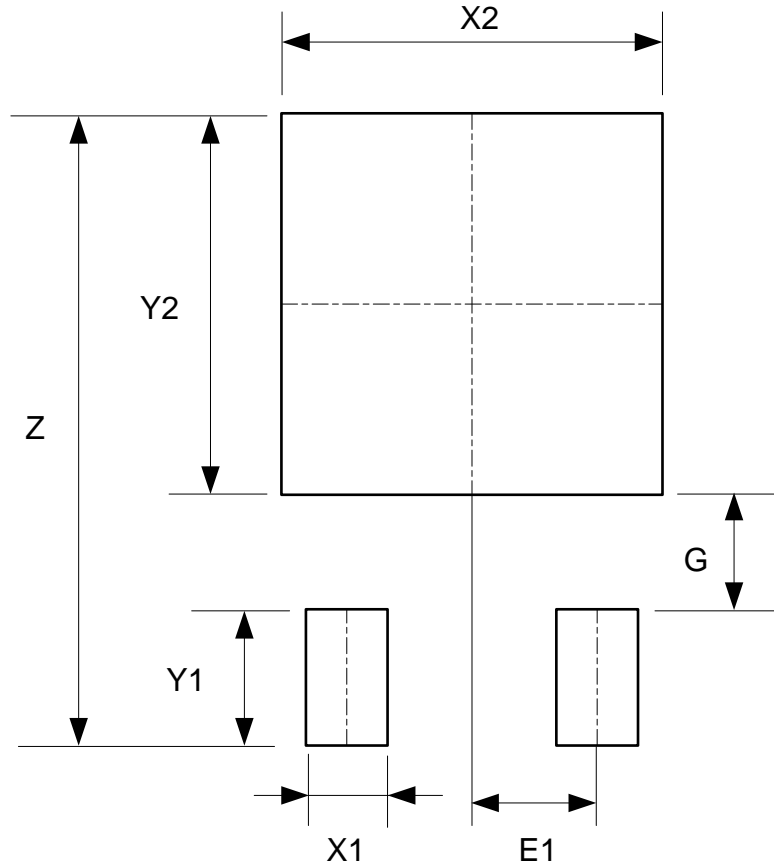
(2) Package Type: SOT-223



| Dimensions | Z<br>(mm)/(inch) | G<br>(mm)/(inch) | X1<br>(mm)/(inch) | X2<br>(mm)/(inch) | Y<br>(mm)/(inch) | E1<br>(mm)/(inch) | E2<br>(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** (Cont.)

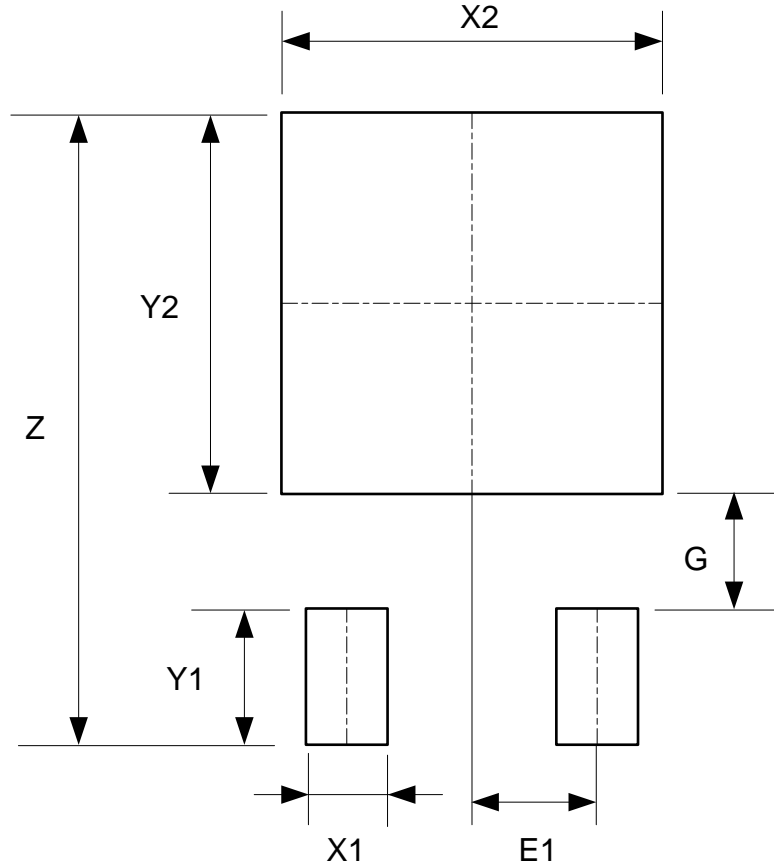
(3) Package Type: TO-252-2 (3)



| Dimensions | Z<br>(mm)/(inch) | X1<br>(mm)/(inch) | X2=Y2<br>(mm)/(inch) | Y1<br>(mm)/(inch) | G<br>(mm)/(inch) | E1<br>(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       |

**Suggested Pad Layout (Cont.)**

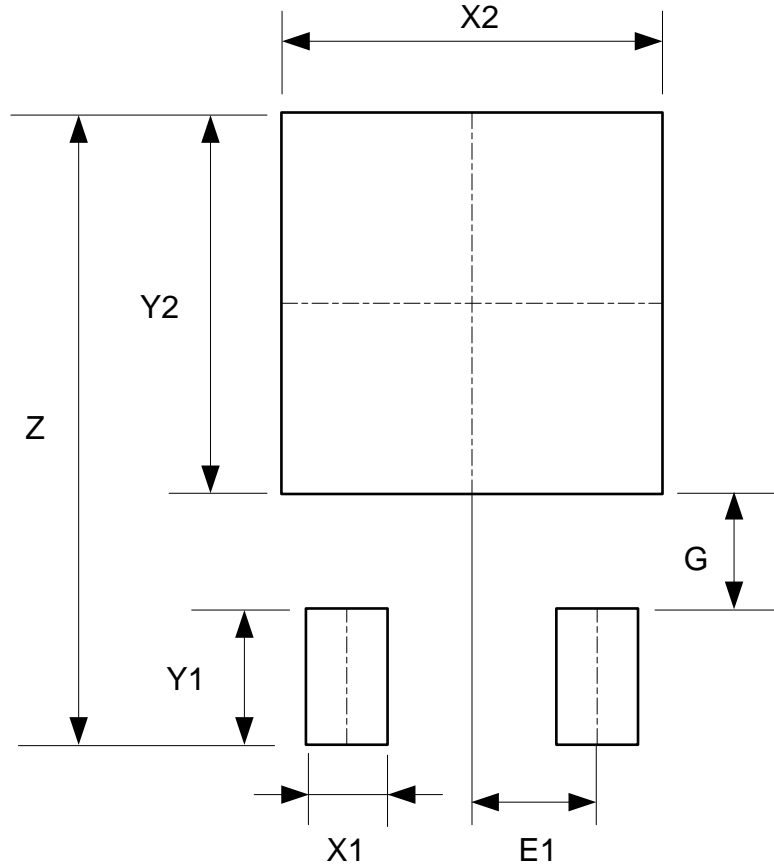
(4) Package Type: TO-252-2 (4)



| Dimensions | Z<br>(mm)/(inch) | X1<br>(mm)/(inch) | X2=Y2<br>(mm)/(inch) | Y1<br>(mm)/(inch) | G<br>(mm)/(inch) | E1<br>(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       |

**Suggested Pad Layout** (Cont.)

(5) Package Type: TO-252-2 (5)



| Dimensions | Z<br>(mm)/(inch) | X1<br>(mm)/(inch) | X2=Y2<br>(mm)/(inch) | Y1<br>(mm)/(inch) | G<br>(mm)/(inch) | E1<br>(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       |

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