

500 mA output, High PSRR, Low-Dropout Linear Regulator

Features

- Input Voltage Range: 2.4 V to 5.5 V
- Output Voltage Options:
 - Fixed Voltage: 1.2 V, 1.5 V, 1.8 V, 2.5 V, 2.7 V, 2.8 V, 2.9 V, 3 V, 3.3 V
 - Adjustable Voltage: 0.8 V to 5 V
- High Output Accuracy:
 - $\pm 1\%$ Typical Under Room Temperature
 - $\pm 2\%$ Through Operating Conditions
- Maximum Output Current: 500 mA
- Low Dropout Voltage: 400 mV at 500 mA
- Low Quiescent Current and Shutdown Current
- Foldback Current Limit and Thermal Protection
- Stable with 2.2 μF Ceramic Capacitor
- Inrush Input Current Limitation During Start-up
- Thermal Shutdown Protection
- Junction Temperature Range: -40°C to $+125^{\circ}\text{C}$
- Package options: SOT23-5, SC70-5, SOT89-3, DFN1x1-4

Applications

- Handheld Devices with Battery Power Supply
- POS
- Video Surveillance
- Wireless and IoT modules

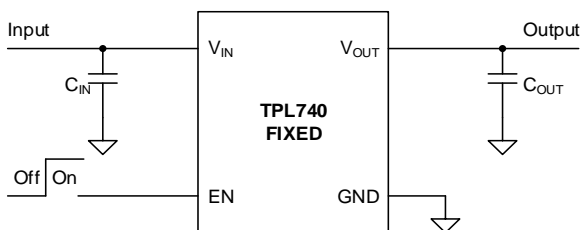
Description

The TPL740 series products are high performance and low dropout linear regulators. The TPL740 series products support a maximum 500 mA output current with low quiescent current and high PSRR. The TPL740 series products are stable with ceramic output capacitor from 2.2 μF to 10 μF .

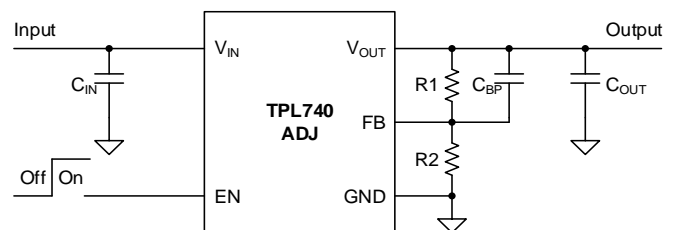
The TPL740 series products have a high PSRR with 60 dB at 1 kHz. This feature makes TPL740 series products very suitable for power-sensitive applications with high noise from the previous stage power supply. As low as 49 μA quiescent current and only 20 nA shutdown current makes the TPL740 series products ideal choices for portable devices with battery power supply. Current limit foldback and thermal overload protection circuits improve the reliability under heavy load conditions.

The TPL740 series products provide several output voltage version options including fixed version and adjustable version with $\pm 2\%$ output voltage accuracy over operating conditions. The TPL740 series products are guaranteed over the junction temperature range from -40°C to $+125^{\circ}\text{C}$.

Typical Application Schematic



TPL740 Fixed Output Voltage



TPL740 Adjustable Output Voltage

Product Family Table

| Order Number | Output Voltage (V) | Package |
|----------------|--------------------------|---------|
| TPL740ADJ-5TR | Adjustable (0.8 V ~ 5 V) | SOT23-5 |
| TPL740F12-5TR | Fixed 1.2 V | SOT23-5 |
| TPL740F15-5TR | Fixed 1.5 V | SOT23-5 |
| TPL740F18-5TR | Fixed 1.8 V | SOT23-5 |
| TPL740F25-5TR | Fixed 2.5 V | SOT23-5 |
| TPL740F27-5TR | Fixed 2.7 V | SOT23-5 |
| TPL740F28-5TR | Fixed 2.8 V | SOT23-5 |
| TPL740F29-5TR | Fixed 2.9 V | SOT23-5 |
| TPL740F30-5TR | Fixed 3.0 V | SOT23-5 |
| TPL740F33-5TR | Fixed 3.3 V | SOT23-5 |
| TPL740ADJ-CR | Adjustable (0.8 V ~ 5 V) | SC70-5 |
| TPL740F12-CR | Fixed 1.2 V | SC70-5 |
| TPL740F15-CR | Fixed 1.5 V | SC70-5 |
| TPL740F18-CR | Fixed 1.8 V | SC70-5 |
| TPL740F25-CR | Fixed 2.5 V | SC70-5 |
| TPL740F27-CR | Fixed 2.7 V | SC70-5 |
| TPL740F28-CR | Fixed 2.8 V | SC70-5 |
| TPL740F29-CR | Fixed 2.9 V | SC70-5 |
| TPL740F30-CR | Fixed 3.0 V | SC70-5 |
| TPL740F33-CR | Fixed 3.3 V | SC70-5 |
| TPL740F12-89TR | Fixed 1.2 V | SOT89-3 |
| TPL740F15-89TR | Fixed 1.5 V | SOT89-3 |
| TPL740F18-89TR | Fixed 1.8 V | SOT89-3 |
| TPL740F25-89TR | Fixed 2.5 V | SOT89-3 |
| TPL740F27-89TR | Fixed 2.7 V | SOT89-3 |
| TPL740F28-89TR | Fixed 2.8 V | SOT89-3 |
| TPL740F29-89TR | Fixed 2.9 V | SOT89-3 |
| TPL740F30-89TR | Fixed 3.0 V | SOT89-3 |
| TPL740F33-89TR | Fixed 3.3 V | SOT89-3 |

Product Family Table (Continued)

| Order Number | Output Voltage (V) | Package |
|--------------|--------------------|----------|
| TPL740F12-FR | Fixed 1.2 V | DFN1x1-4 |
| TPL740F15-FR | Fixed 1.5 V | DFN1x1-4 |
| TPL740F18-FR | Fixed 1.8 V | DFN1x1-4 |
| TPL740F25-FR | Fixed 2.5 V | DFN1x1-4 |
| TPL740F27-FR | Fixed 2.7 V | DFN1x1-4 |
| TPL740F28-FR | Fixed 2.8 V | DFN1x1-4 |
| TPL740F29-FR | Fixed 2.9 V | DFN1x1-4 |
| TPL740F30-FR | Fixed 3.0 V | DFN1x1-4 |
| TPL740F33-FR | Fixed 3.3 V | DFN1x1-4 |

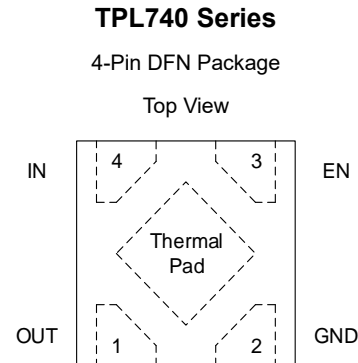
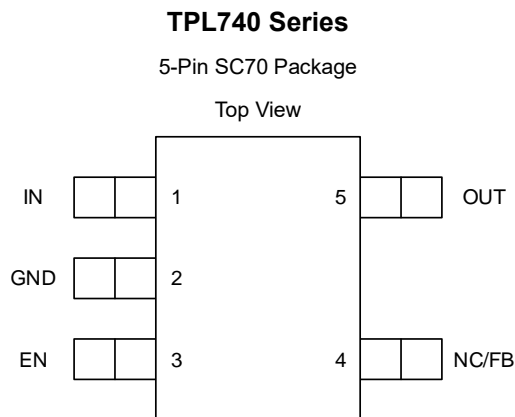
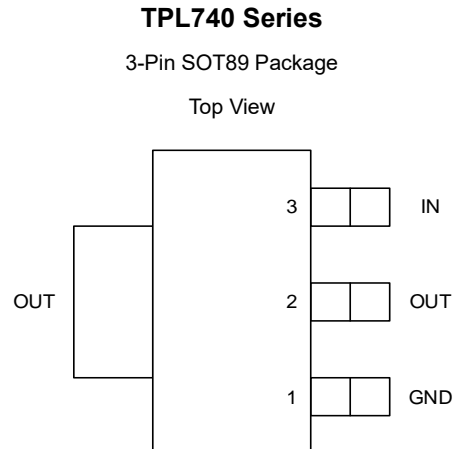
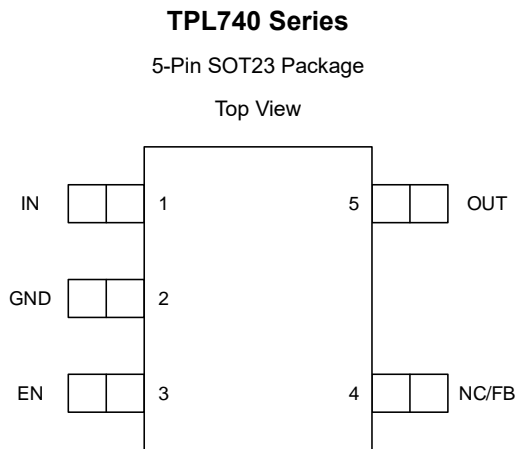
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Revision History

| Date | Revision | Notes |
|------------|-----------|--|
| 2018-08-28 | Rev.Pre.0 | Preliminary Version |
| 2018-11-26 | Rev.A.0 | Initial Release |
| 2019-02-11 | Rev.A.1 | <ol style="list-style-type: none">Added 1.5 V, 2.7 V, 2.9 V voltage optionsAdded link of Figure 11 and Figure 12 |
| 2019-08-08 | Rev.A.2 | <ol style="list-style-type: none">Added max limit of item: I_{GND}, I_{SHDN}, UVLO, Load regulation, V_{DO} |
| 2020-08-15 | Rev.A.3 | <ol style="list-style-type: none">Changed “Soft-start Limits Input Current Surge During Enable” to “Inrush Input Current Limitation During Start-up”Added description of “Short-Circuit Protection” |
| 2021-03-09 | Rev.A.4 | <ol style="list-style-type: none">Corrected typical value of current limit in Feature DescriptionAdded Tape and Reel InformationUpdated Junction Temperature Range |
| 2022-05-15 | Rev.A.5 | Added Tape and Reel Information of SC70-5 and DFN1x1-4 package |

Pin Configuration and Functions



Pin Functions

| Name | Pin | | | | I/O | Description |
|------|---------|--------|---------|-------|-----|---|
| | SOT23-5 | SC70-5 | SOT89-3 | DFN-4 | | |
| IN | 1 | 1 | 3 | 4 | I | Input voltage pin. Bypass IN to GND with a 1 μ F or greater capacitor. |
| OUT | 5 | 5 | 2 | 1 | O | Regulated output voltage pin. Bypass OUT to GND with a 2.2 μ F or greater capacitor. |
| EN | 3 | 3 | - | 3 | I | Regulator enable pin. Drive EN high to turn on the regulator; drive EN low to turn off the regulator. For automatic startup, connect EN to IN directly. |
| GND | 2 | 2 | 1 | 2 | - | Ground reference pin. Connect GND pin to PCB ground plane directly. |
| NC | 4 | 4 | - | - | - | No connection. |
| FB | 4 | 4 | - | - | I | Output feedback pin (Adjustable version only). Connect to a resistor divider to adjust the output voltage. |

(1) Thermal pad must be connected to PCB ground plane to maximum the thermal performance.

Specifications

Absolute Maximum Ratings

| Parameter | | Min | Max | Unit |
|-----------------------------------|--|------|-----|------|
| V _{IN} , V _{EN} | Input Voltage | -0.3 | 6 | V |
| V _{OUT} | Output Voltage | -0.3 | 6 | V |
| V _{FB} | Feedback Voltage (Adjustable version only) | -0.3 | 6 | V |
| T _J | Junction Temperature Range | -40 | 150 | °C |
| T _{STG} | Storage Temperature Range | -65 | 150 | °C |
| T _L | Lead Temperature (Soldering 10 sec) | | 260 | °C |

(1) Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. Exposure to any Absolute Maximum Rating condition for extended periods may affect device reliability and lifetime.

(2) All voltage values are with respect to GND.

ESD, Electrostatic Discharge Protection

| Symbol | Parameter | Condition | Minimum Level | Unit |
|--------|--------------------------|---------------------------------------|---------------|------|
| HBM | Human Body Model ESD | ANSI/ESDA/JEDEC JS-001 ⁽¹⁾ | ±8 | kV |
| CDM | Charged Device Model ESD | ANSI/ESDA/JEDEC JS-002 ⁽²⁾ | ±2 | kV |

(1) JEDEC document JEP155 states that 500-V HBM allows safe manufacturing with a standard ESD control process.

(2) JEDEC document JEP157 states that 250-V CDM allows safe manufacturing with a standard ESD control process.

Recommended Operating Conditions

| Parameter | | Min | Max | Unit |
|------------------|--|-----|------------------|------|
| V _{IN} | Input Voltage | 2.4 | 5.5 | V |
| V _{EN} | Enable Voltage | 0 | V _{IN} | V |
| V _{OUT} | Output Voltage | 0 | 5 | V |
| V _{FB} | Feedback Voltage (Adjustable version only) | 0 | V _{OUT} | V |
| I _{OUT} | Output Current | 0 | 500 | mA |
| T _J | Operating Junction Temperature Range | -40 | 125 | °C |

Thermal Information

| Package Type | θ _{JA} | θ _{JC} | Unit |
|--------------|-----------------|-----------------|------|
| SOT23-5 | 280 | 62 | °C/W |
| SC70-5 | 310 | 80 | °C/W |
| SOT89-3 | 55 | 88 | °C/W |
| DFN1x1-4 | 210 | 110 | °C/W |

**500 mA output, High PSRR,
Low-Dropout Linear Regulator**
Electrical Characteristics

All test conditions: $V_{IN} = V_{OUT(NOM)} + 0.5\text{ V}$ or 2.4 V , whichever is greater; $C_{OUT} = 2.2\text{ }\mu\text{F}$, $T_A = +25^\circ\text{C}$, unless otherwise noted.

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---|------------------------------------|--|-------|------|----------|---------------|
| Supply Voltage and Current | | | | | | |
| V_{IN} | Input voltage range | | 2.4 | | 5.5 | V |
| I_{GND} | Ground pin current | $I_{OUT} = 0\text{ mA}$ | | 49 | 200 | μA |
| | | $I_{OUT} = 100\text{ mA}$ | | 200 | 2000 | μA |
| I_{SHDN} | Shutdown current | EN = GND | | 0.02 | 2 | nA |
| UVLO | V_{IN} under-voltage lock-out | V_{IN} rising | 1.5 | 1.9 | 2.4 | V |
| | | Hysteresis | | 200 | | mV |
| Enable Input Voltage and Current | | | | | | |
| $V_{IH(EN)}$ | EN logic-input high level (enable) | | 1.2 | | V_{IN} | V |
| $V_{IL(EN)}$ | EN logic-input low level (disable) | | 0 | | 0.4 | V |
| I_{EN} | EN pin leakage current | EN = 5 V | | 1 | 3 | μA |
| Regulated Output Voltage and Current | | | | | | |
| V_{OUT} | Output voltage accuracy | $T_J = +25^\circ\text{C}$ | | 1% | | |
| | | $-40^\circ\text{C} \leq T_J \leq +125^\circ\text{C}$ | -2% | | 2% | |
| V_{FB} | Feedback pin voltage | ADJ version only | 0.784 | 0.8 | 0.816 | V |
| ΔV_{OUT} | Line regulation | $V_{IN} = 2.4\text{ V}$ or $V_{OUT(NOM)} + 0.5\text{ V}$ to 5.5 V , or $V_{IN} \geq 2.4\text{ V}$, $I_{OUT} = 1\text{ mA}$ | | 1 | 5 | mV |
| | Load regulation | $I_{OUT} = 1\text{ mA}$ to 500 mA | | 20 | 60 | mV |
| $V_{DO}^{(1)}$ | Dropout voltage | $V_{IN} = 0.98 \times V_{OUT(NOM)}$, $I_{OUT} = 100\text{ mA}$ | | 75 | 100 | mV |
| | | $V_{IN} = 0.98 \times V_{OUT(NOM)}$, $I_{OUT} = 300\text{ mA}$ | | 200 | 250 | mV |
| | | $V_{IN} = 0.98 \times V_{OUT(NOM)}$, $I_{OUT} = 500\text{ mA}$ | | 300 | 400 | mV |
| I_{OUT} | Output current | V_{OUT} in regulation | 0 | | 500 | mA |
| I_{CL} | Output current limit | $V_{OUT} = 0.9 \times V_{OUT(NOM)}$ | 550 | 1000 | 1400 | mA |

(1) Dropout voltage is the minimum input to output voltage differential needed to maintain regulation at a specified output current. In dropout, the output voltage will be equal to: $V_{IN} - V_{DROPOUT}$.

**500 mA output, High PSRR,
Low-Dropout Linear Regulator**
Electrical Characteristics (Continued)

All test conditions: $V_{IN} = V_{OUT(NOM)} + 0.5\text{ V}$ or 2.4 V , whichever is greater; $C_{OUT} = 2.2\ \mu\text{F}$, $T_A = +25^\circ\text{C}$, unless otherwise noted.

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---|--|--|-----|-----|-----|---------------------|
| Regulated Output Voltage and Current | | | | | | |
| PSRR | Power supply rejection ratio (fixed version) | $I_{OUT} = 100\text{ mA}$, $f = 1\text{ kHz}$ | | 60 | | dB |
| | | $I_{OUT} = 100\text{ mA}$, $f = 100\text{ kHz}$ | | 40 | | dB |
| | | $I_{OUT} = 100\text{ mA}$, $f = 1\text{ MHz}$ | | 40 | | dB |
| | Power supply rejection ratio (ADJ version) | $I_{OUT} = 100\text{ mA}$, $f = 1\text{ kHz}$, $C_{BP} = 100\text{ nF}$ | | 65 | | dB |
| | | $I_{OUT} = 100\text{ mA}$, $f = 100\text{ kHz}$, $C_{BP} = 100\text{ nF}$ | | 60 | | dB |
| | | $I_{OUT} = 100\text{ mA}$, $f = 1\text{ MHz}$, $C_{BP} = 100\text{ nF}$ | | 45 | | dB |
| V_N | Output noise voltage (fixed version) | $I_{OUT} = 100\text{ mA}$, $BW = 100\text{ Hz to }80\text{ kHz}$ | | 130 | | μV_{RMS} |
| | Output noise voltage (ADJ version) | $I_{OUT} = 100\text{ mA}$, $BW = 100\text{ Hz to }80\text{ kHz}$, $C_{BP} = 100\text{ nF}$ | | 40 | | μV_{RMS} |
| $T_{STR}^{(2)}$ | Start-up time (fixed version) | $I_{OUT} = 500\text{ mA}$, $C_{OUT} = 2.2\ \mu\text{F}$ | | 150 | | μs |
| | Start-up time (ADJ version) | $I_{OUT} = 500\text{ mA}$, $C_{OUT} = 2.2\ \mu\text{F}$, $C_{BP} = 100\text{ nF}$ | | 15 | | ms |
| Temperature Range | | | | | | |
| T_{SD} | Thermal shutdown temperature | | | 170 | | $^\circ\text{C}$ |
| | Thermal shutdown hysteresis | | | 30 | | $^\circ\text{C}$ |

(2) Start-up time from EN assertion to $0.98 \times V_{OUT(NOM)}$.

500 mA output, High PSRR, Low-Dropout Linear Regulator

Typical Performance Characteristics

All test conditions: $V_{IN} = V_{OUT(NOM)} + 0.5\text{ V}$ or 2.4 V , whichever is greater; $C_{OUT} = 2.2\text{ }\mu\text{F}$, $T_A = +25^\circ\text{C}$, unless otherwise noted.

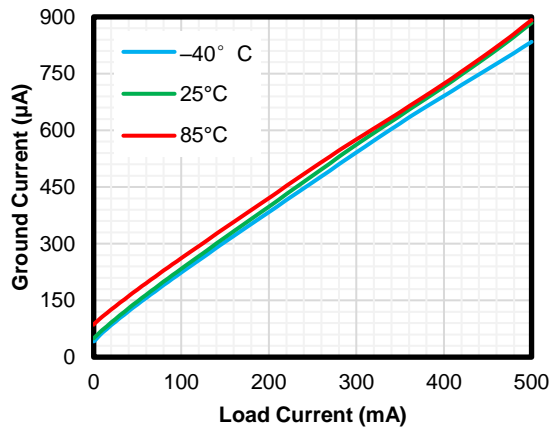


Figure 1. Quiescent Current vs Output Current

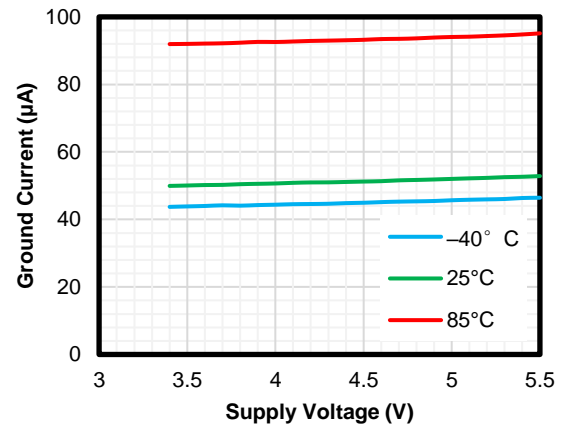


Figure 2. Quiescent Current vs Input Voltage

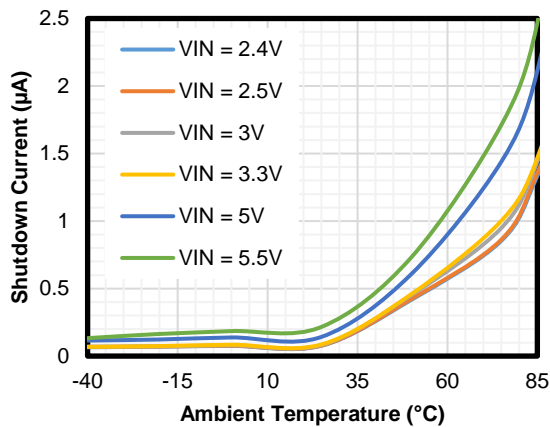


Figure 3. Shutdown Current vs Ambient Temperature

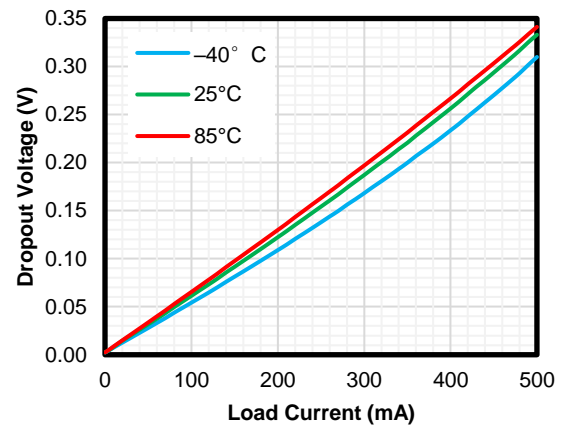


Figure 4. Dropout Voltage vs Output Current

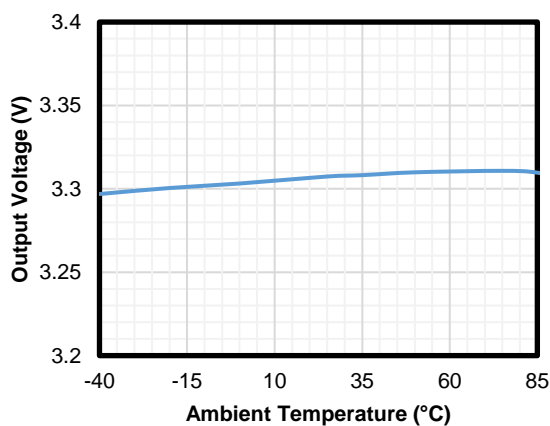


Figure 5. Output Accuracy vs Ambient Temperature

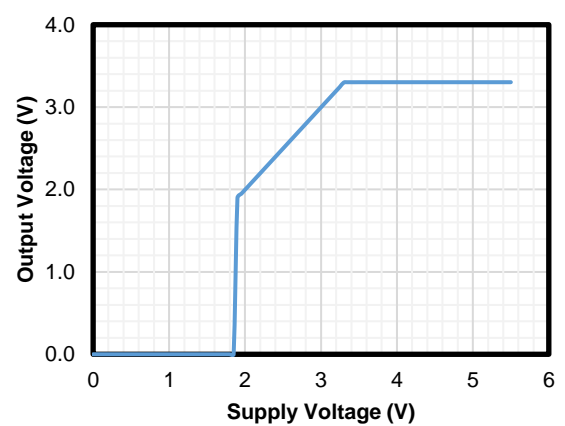


Figure 6. Output Voltage vs Supply Voltage

500 mA output, High PSRR,
Low-Dropout Linear Regulator

Typical Performance Characteristics (Continued)

All test conditions: $V_{IN} = V_{OUT(NOM)} + 0.5\text{ V}$ or 2.4 V , whichever is greater; $C_{OUT} = 2.2\ \mu\text{F}$, $T_A = +25^\circ\text{C}$, unless otherwise noted.

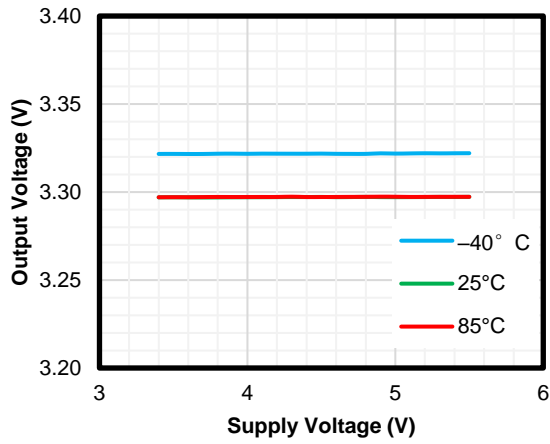


Figure 7. Line Regulation

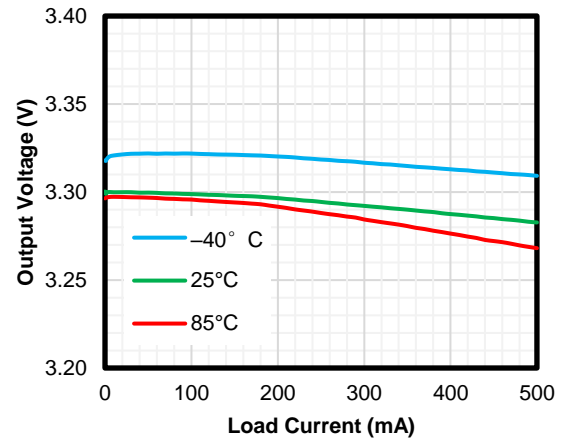


Figure 8. Load Regulation

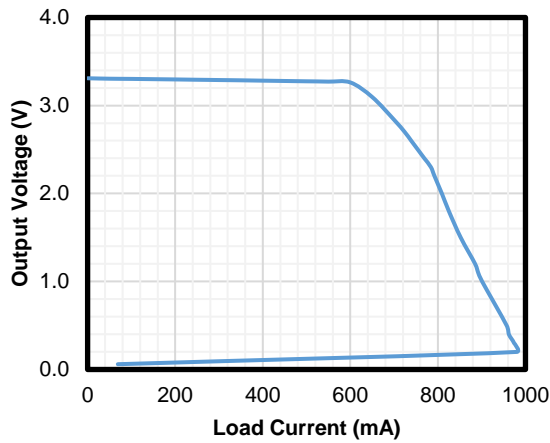


Figure 9. Foldback Current Limit

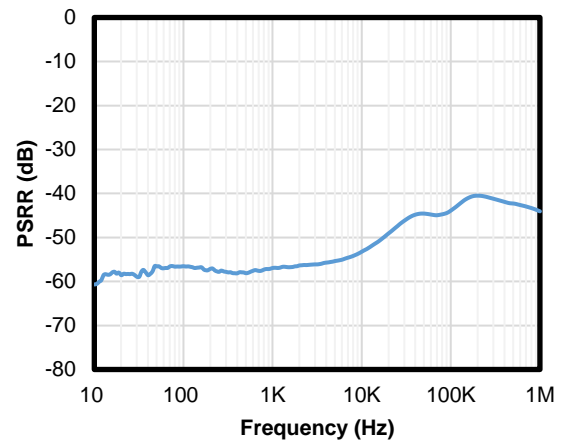


Figure 10. PSRR

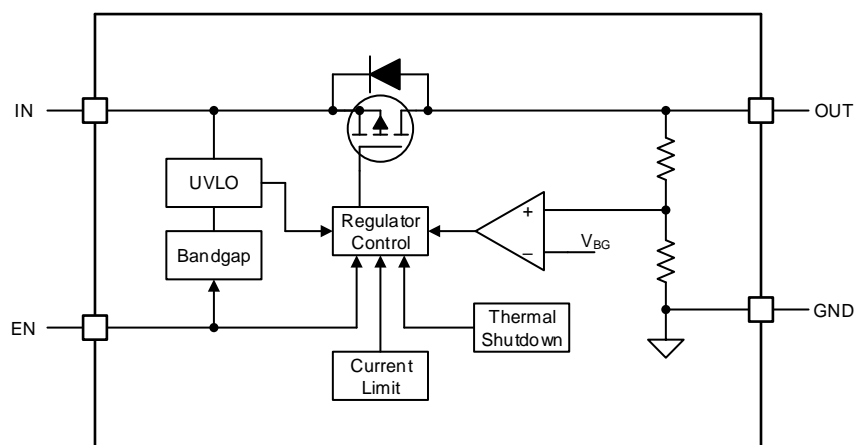
Detailed Description

Overview

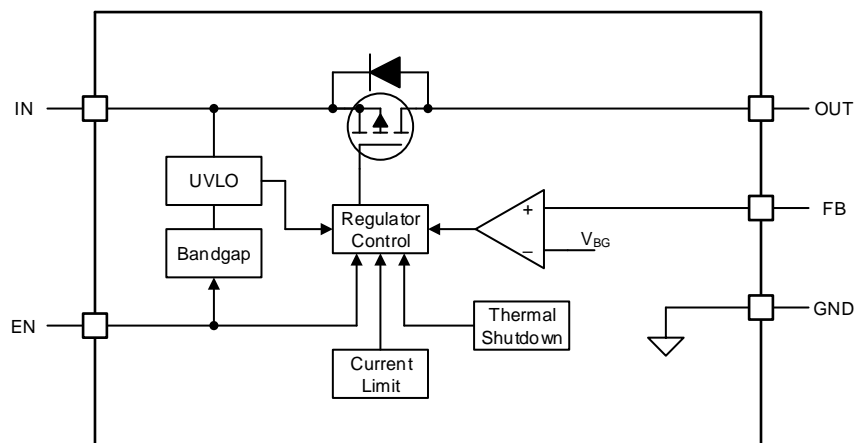
The TPL740 devices products are 500 mA high PSRR, low-dropout linear regulators with very low quiescent current. These voltage regulators operate from 2.4 V to 5.5 V and consume 49 μ A of quiescent current at no load and only 20 nA when in shutdown mode.

The TPL740 series are available in fixed voltage versions of 1.2 V, 1.5 V, 1.8 V, 2.5 V, 2.7 V, 2.8 V, 2.9 V, 3 V and 3.3 V, and adjustable voltage version of 0.8 V to 5 V with $\pm 2\%$ output voltage accuracy over operating conditions.

Functional Block Diagram



TPL740 Series Fixed Output Version



TPL740 Series Adjustable Output Version

Feature Description

Enable

The enable pin (EN) is active high. Connect this pin to the GPIO of an external processor or digital logic control circuit to enable and disable the device. Or connect this pin to the IN pin for self-bias applications.

**500 mA output, High PSRR,
Low-Dropout Linear Regulator****Under-voltage Lockout (UVLO)**

The TPL740 series use an under-voltage lockout circuit (UVLO = 1.9 V) to keep the output shut off until the internal circuitry operates properly.

Regulated Output Voltage

The TPL740 series are available in fixed voltage versions of 1.2 V, 1.5 V, 1.8 V, 2.5 V, 2.7 V, 2.8 V, 2.9 V, 3 V and 3.3 V. When the input voltage is higher than $V_{OUT(NOM)} + V_{DO}$ or 2.4 V, output pin is the regulated output based on the selected voltage version. When the input voltage falls below $V_{OUT(NOM)} + V_{DO}$ or 2.4 V, output pin tracks the input voltage minus the dropout voltage based on the load current. When the input voltage drops below UVLO threshold, the output keeps shut off.

Adjustable Output Voltage

The TPL740 series are also available in adjustable voltage versions of 0.8 V to 5 V by selecting suitable external resistor dividers. Use [Equation 1](#) to calculate the output voltage ($V_{FB} = 0.8$ V). Suggest select resistor value of (R1 + R2) between 10 k Ω and 100 k Ω .

$$V_{OUT} = V_{FB} \times \left(1 + \frac{R1}{R2} \right) \quad (1)$$

Current Limit

The TPL740 series integrate an internal foldback current limit that helps to protect the regulator during fault conditions. When the output is shorted, the LDO supplies a typical current of 1000 mA. Output voltage is not regulated when the device is in current limit and is $V_{OUT} = I_{CL} \times R_{LOAD}$.

Short-Circuit Protection

The TPL740 series integrate a short-circuit protection. When the output pin is shorted to ground or forced to a voltage below 0.2 V, the output current of the TPL740 series is limited to a typical value of 150 mA.

Thermal Shutdown

During normal operation, LDO junction temperature should not exceed 125°C. When the junction temperature exceeds the thermal shutdown threshold, the LDO shut down the output immediately. Until when the junction temperature falls below the thermal shutdown threshold minus thermal shutdown hysteresis, the output turns on again.

Application and Implementation

NOTE

Information in the following applications sections is not part of the 3PEAK's component specification and 3PEAK does not warrant its accuracy or completeness. 3PEAK's customers are responsible for determining suitability of components for their purposes. Customers should validate and test their design implementation to confirm system functionality.

Application Information

The TPL740 devices are a series of 500 mA high PSRR, low-dropout linear regulator with low quiescent current. The following application schematic shows a typical usage of the TPL740 series.

Typical Application

Figure 11 and Figure 12 show the typical application schematic of the TPL740 series.

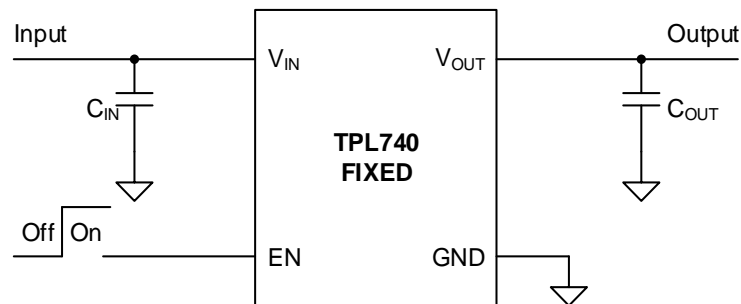


Figure 11. TPL740 Fixed Output Voltage

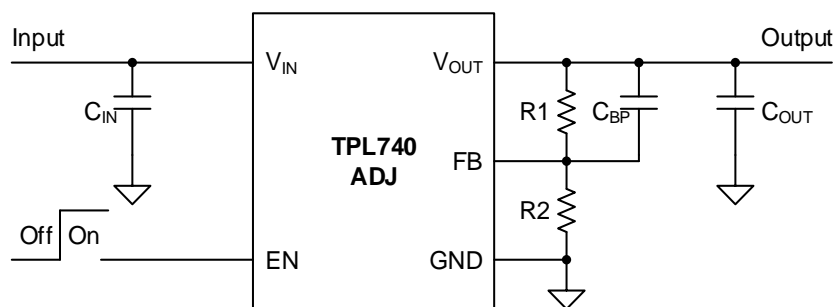


Figure 12 TPL740 Adjustable Output Voltage

Input Capacitor and Output Capacitor

3PEAK recommends adding a 1 μF or greater capacitor with a 0.1 μF bypass capacitor in parallel at IN pin to keep the input voltage stable. The voltage rating of the capacitors must be greater than the maximum input voltage.

To ensure loop stability, the TPL740 series requires an output capacitor with a minimum effective capacitance value of 2.2 μF . 3PEAK recommends selecting a X5R- or X7R-type ceramic capacitor with low ESR over temperature.

Both input capacitors and output capacitors must be placed as close to the device pins as possible.

**500 mA output, High PSRR,
Low-Dropout Linear Regulator****Power Dissipation**

During normal operation, LDO junction temperature should not exceed 125°C. Using below equations to calculate the power dissipation and estimate the junction temperature.

The power dissipation can be calculated using [Equation 2](#).

$$P_D = (V_{IN} - V_{OUT}) \times I_{OUT} + V_{IN} \times I_{GND} \quad (2)$$

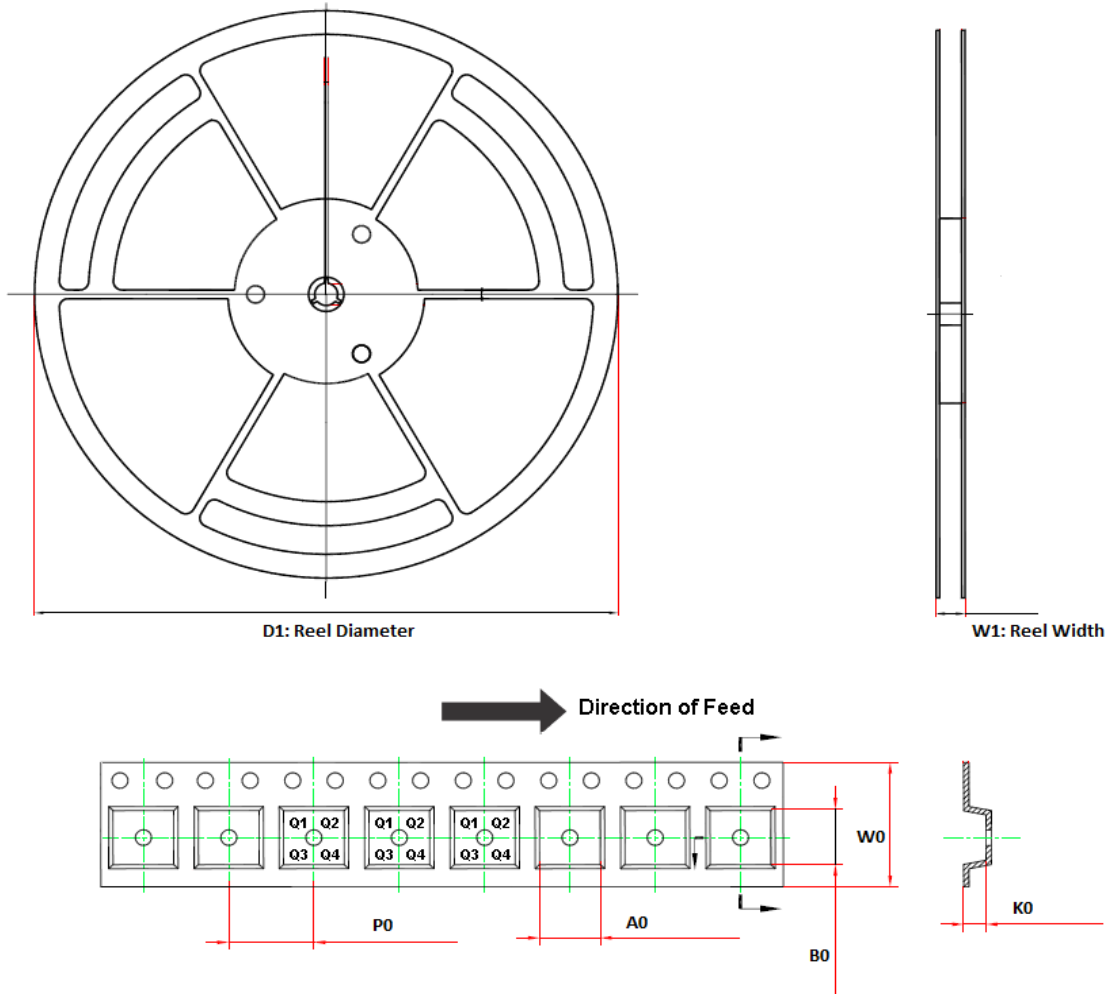
The junction temperature can be estimated using [Equation 3](#). θ_{JA} is the junction-to-ambient thermal resistance (See Section [Thermal Information](#)).

$$T_J = T_A + P_D \times \theta_{JA} \quad (3)$$

Layout**Layout Guideline**

- Both input capacitors and output capacitors must be placed as close to the device pins as possible.
- It is recommended to bypass the input pin to ground with a 0.1 μ F bypass capacitor. The loop area formed by the bypass capacitor connection, IN pin and the GND pin of the system must be as small as possible.
- It is recommended to use wide trace lengths or thick copper weight to minimize I×R drop and heat dissipation.

Tape and Reel Information

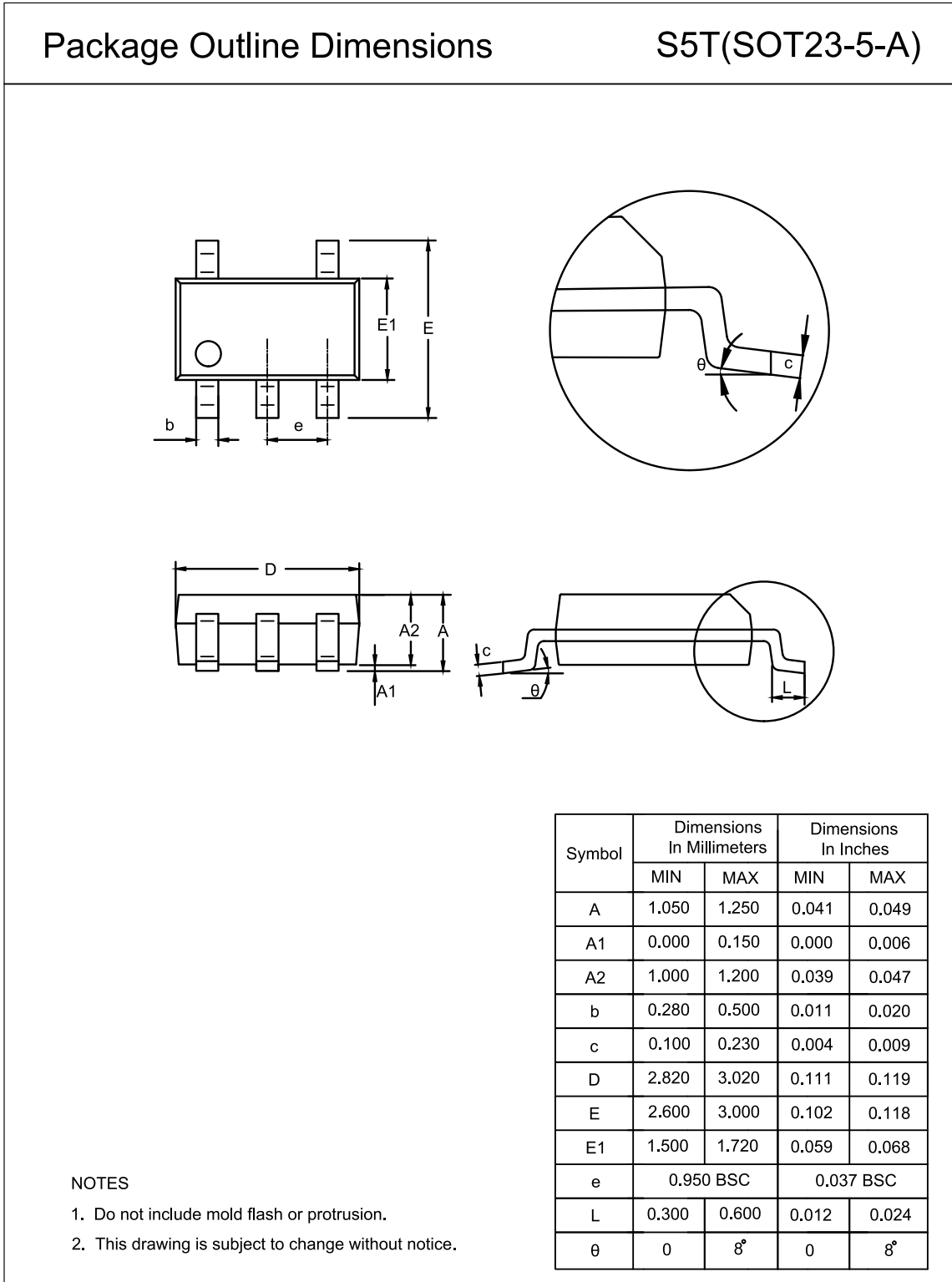


| Order Number | Package | D1 (mm) | W1 (mm) | A0 (mm) | B0 (mm) | K0 (mm) | P0 (mm) | W0 (mm) | Pin1 Quadrant |
|----------------|----------|---------|---------|---------|---------|---------|---------|---------|---------------|
| TPL740ADJ-5TR | SOT23-5 | 180.0 | 13.1 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPL740Fxx-5TR | SOT23-5 | 180.0 | 13.1 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPL740ADJ-CR | SC70-5 | 178.0 | 12.3 | 2.4 | 2.5 | 1.2 | 4.0 | 8.0 | Q3 |
| TPL740Fxx-CR | SC70-5 | 178.0 | 12.3 | 2.4 | 2.5 | 1.2 | 4.0 | 8.0 | Q3 |
| TPL740Fxx-89TR | SOT89-3 | 330 | 17.6 | 4.8 | 4.4 | 1.8 | 8.0 | 12.0 | Q3 |
| TPL740Fxx-FR | DFN1x1-4 | 180.0 | 10.0 | 1.16 | 1.16 | 0.5 | 2.0 | 8.0 | Q1 |

(1) Output voltage value, xx = 12 to 33, e.g., 33 means 3.3 V output voltage.

Package Outline Dimensions

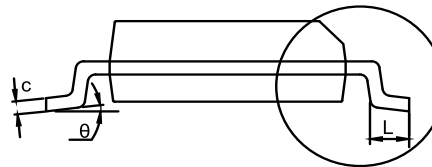
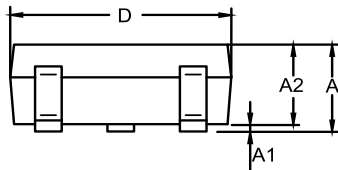
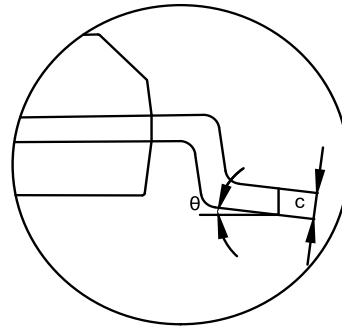
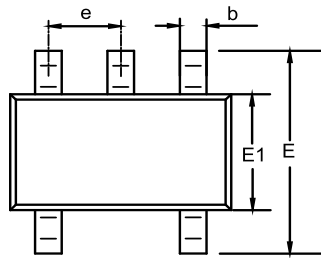
SOT23-5



SC70-5

Package Outline Dimensions

SC5(SOT353-5-A)

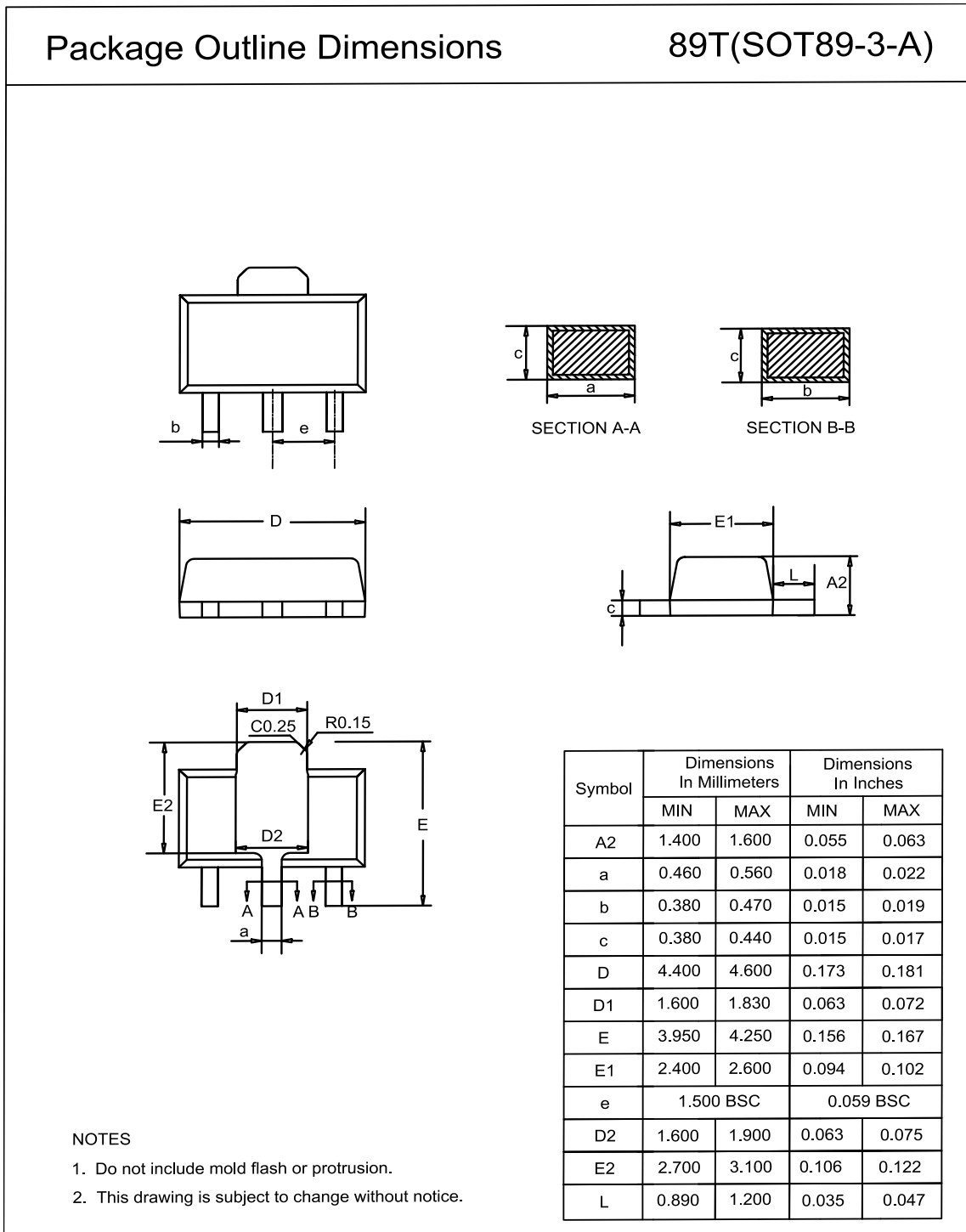


| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|------------------------------|-------|-------------------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.850 | 1.100 | 0.033 | 0.043 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.800 | 1.000 | 0.031 | 0.039 |
| b | 0.150 | 0.350 | 0.006 | 0.014 |
| c | 0.110 | 0.230 | 0.004 | 0.009 |
| D | 2.000 | 2.200 | 0.079 | 0.087 |
| E | 2.150 | 2.450 | 0.085 | 0.096 |
| E1 | 1.150 | 1.350 | 0.045 | 0.053 |
| e | 0.650 BSC | | 0.026 BSC | |
| L | 0.260 | 0.460 | 0.010 | 0.018 |
| θ | 0 | 8° | 0 | 8° |

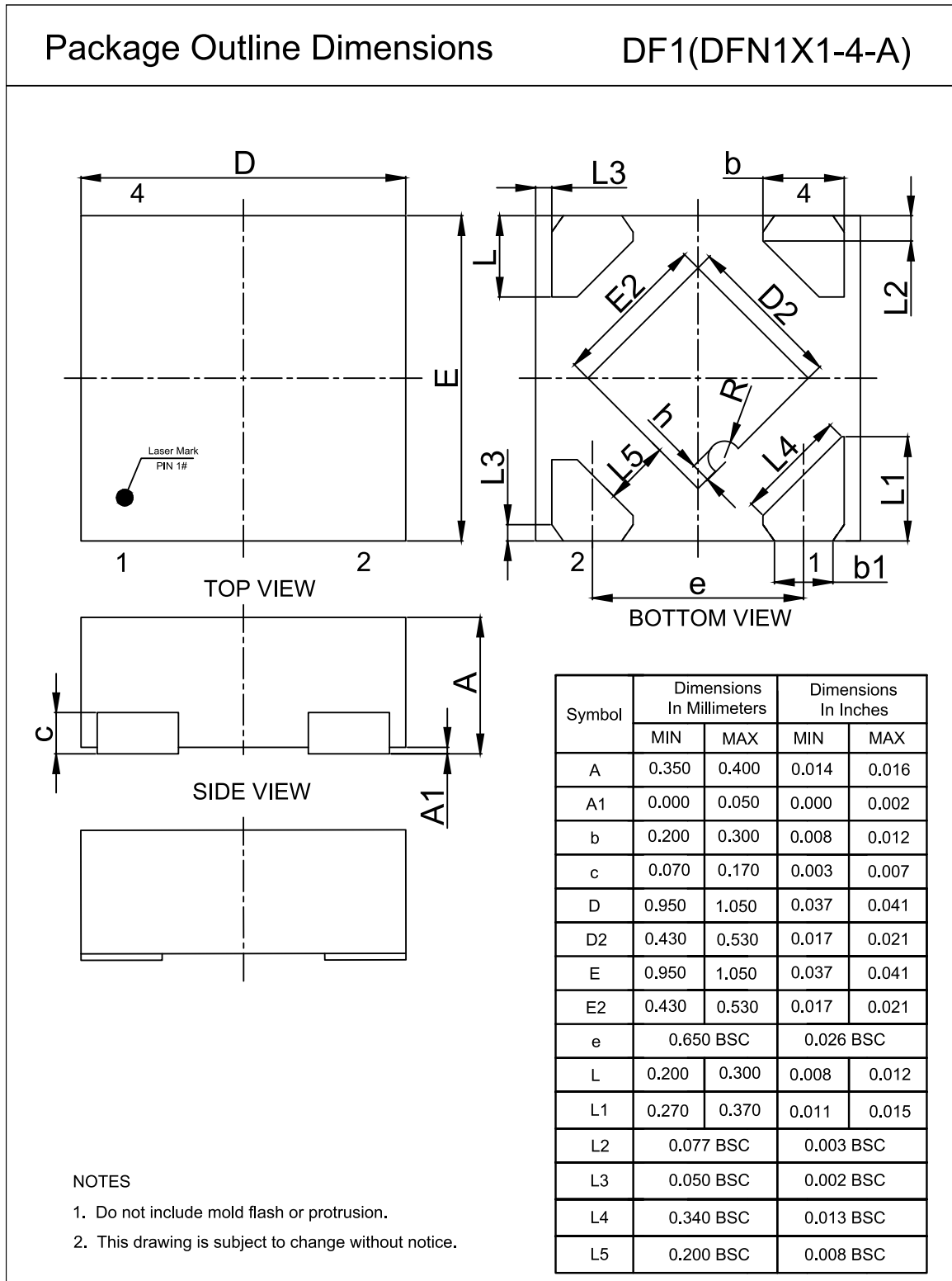
NOTES

1. Do not include mold flash or protrusion.
2. This drawing is subject to change without notice.

SOT89-3



DFN1X1-4



Order Information

| Order Number | Junction Temperature Range | Package | Marking Information | MSL | Transport Media, Quantity | Eco Plan |
|------------------------------|----------------------------|---------|---------------------|------|---------------------------|----------|
| TPL740ADJ-5TR | -40 to 125°C | SOT23-5 | L2A | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F12-5TR | -40 to 125°C | SOT23-5 | L2D | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F15-5TR | -40 to 125°C | SOT23-5 | L2K | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F18-5TR | -40 to 125°C | SOT23-5 | L2F | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F25-5TR | -40 to 125°C | SOT23-5 | L2G | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F27-5TR ⁽¹⁾ | -40 to 125°C | SOT23-5 | L2L | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F28-5TR | -40 to 125°C | SOT23-5 | L2H | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F29-5TR ⁽¹⁾ | -40 to 125°C | SOT23-5 | L2M | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F30-5TR | -40 to 125°C | SOT23-5 | L2I | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F33-5TR | -40 to 125°C | SOT23-5 | L2J | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740ADJ-CR ⁽¹⁾ | -40 to 125°C | SC70-5 | L2A | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F12-CR ⁽¹⁾ | -40 to 125°C | SC70-5 | L2D | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F15-CR ⁽¹⁾ | -40 to 125°C | SC70-5 | L2K | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F18-CR ⁽¹⁾ | -40 to 125°C | SC70-5 | L2F | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F25-CR ⁽¹⁾ | -40 to 125°C | SC70-5 | L2G | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F27-CR ⁽¹⁾ | -40 to 125°C | SC70-5 | L2L | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F28-CR ⁽¹⁾ | -40 to 125°C | SC70-5 | L2H | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F29-CR ⁽¹⁾ | -40 to 125°C | SC70-5 | L2M | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F30-CR ⁽¹⁾ | -40 to 125°C | SC70-5 | L2I | MSL3 | Tape and Reel, 3,000 | Green |
| TPL740F33-CR ⁽¹⁾ | -40 to 125°C | SC70-5 | L2J | MSL3 | Tape and Reel, 3,000 | Green |

(1) Future product, contact 3PEAK factory for more information and sample.

(2) Green: 3PEAK defines "Green" to mean RoHS compatible and free of halogen substances.

500 mA output, High PSRR, Low-Dropout Linear Regulator

| Order Number | Junction Temperature Range | Package | Marking Information | MSL | Transport Media, Quantity | Eco Plan |
|-------------------------------|----------------------------|----------|---------------------|------|---------------------------|----------|
| TPL740F12-89TR ⁽¹⁾ | -40 to 125°C | SOT89-3 | L2D | MSL3 | Tape and Reel, 4,000 | Green |
| TPL740F15-89TR ⁽¹⁾ | -40 to 125°C | SOT89-3 | L2K | MSL3 | Tape and Reel, 4,000 | Green |
| TPL740F18-89TR ⁽¹⁾ | -40 to 125°C | SOT89-3 | L2F | MSL3 | Tape and Reel, 4,000 | Green |
| TPL740F25-89TR ⁽¹⁾ | -40 to 125°C | SOT89-3 | L2G | MSL3 | Tape and Reel, 4,000 | Green |
| TPL740F27-89TR ⁽¹⁾ | -40 to 125°C | SOT89-3 | L2L | MSL3 | Tape and Reel, 4,000 | Green |
| TPL740F28-89TR ⁽¹⁾ | -40 to 125°C | SOT89-3 | L2H | MSL3 | Tape and Reel, 4,000 | Green |
| TPL740F29-89TR ⁽¹⁾ | -40 to 125°C | SOT89-3 | L2M | MSL3 | Tape and Reel, 4,000 | Green |
| TPL740F30-89TR ⁽¹⁾ | -40 to 125°C | SOT89-3 | L2I | MSL3 | Tape and Reel, 4,000 | Green |
| TPL740F33-89TR | -40 to 125°C | SOT89-3 | L2J | MSL3 | Tape and Reel, 4,000 | Green |
| TPL740F12-FR ⁽¹⁾ | -40 to 125°C | DFN1x1-4 | L2D | MSL3 | Tape and Reel, 12,000 | Green |
| TPL740F15-FR ⁽¹⁾ | -40 to 125°C | DFN1x1-4 | L2K | MSL3 | Tape and Reel, 12,000 | Green |
| TPL740F18-FR ⁽¹⁾ | -40 to 125°C | DFN1x1-4 | L2F | MSL3 | Tape and Reel, 12,000 | Green |
| TPL740F25-FR ⁽¹⁾ | -40 to 125°C | DFN1x1-4 | L2G | MSL3 | Tape and Reel, 12,000 | Green |
| TPL740F27-FR ⁽¹⁾ | -40 to 125°C | DFN1x1-4 | L2L | MSL3 | Tape and Reel, 12,000 | Green |
| TPL740F28-FR ⁽¹⁾ | -40 to 125°C | DFN1x1-4 | L2H | MSL3 | Tape and Reel, 12,000 | Green |
| TPL740F29-FR ⁽¹⁾ | -40 to 125°C | DFN1x1-4 | L2M | MSL3 | Tape and Reel, 12,000 | Green |
| TPL740F30-FR ⁽¹⁾ | -40 to 125°C | DFN1x1-4 | L2I | MSL3 | Tape and Reel, 12,000 | Green |
| TPL740F33-FR | -40 to 125°C | DFN1x1-4 | L2J | MSL3 | Tape and Reel, 12,000 | Green |

(1) Future product, contact 3PEAK factory for more information and sample.

(2) Green: 3PEAK defines "Green" to mean RoHS compatible and free of halogen substances.

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