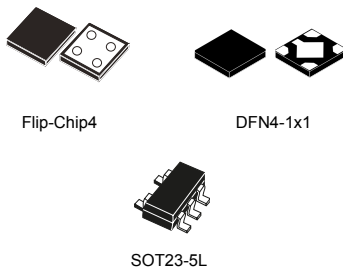


## 250 mA ultra low noise LDO



### Features

- Ultra low output noise: 6.5  $\mu\text{V}_{\text{RMS}}$
- Operating input voltage range: 1.5 V to 5.5 V
- Output current up to 250 mA
- Very low quiescent current: 12  $\mu\text{A}$  at no-load
- Controlled  $I_q$  in dropout condition
- Very low-dropout voltage: 250 mV at 250 mA
- Very high PSRR: 80 dB@100 Hz, 60 dB @ 100 kHz
- Output voltage accuracy: 2% across line, load and temperature
- Output voltage versions: from 1 V to 5 V, with 50 mV step
- Logic-controlled electronic shutdown
- Output discharge feature
- Internal soft-start
- Overcurrent and thermal protections
- Temperature range: from -40 °C to +125 °C
- Packages: Flip-Chip4, DFN4-1x1, SOT23-5L

### Applications

- Smartphones/tablets
- Image sensors
- Instrumentation
- VCO and RF modules

Maturity status link

[LDLN025](#)

### Description

The **LDLN025** is a 250 mA low-dropout voltage regulator, able to work with an input voltage range from 1.5 V to 5.5 V.

The typical dropout voltage at 250 mA load is 120 mV.

The very low quiescent current, which is just 12  $\mu\text{A}$  at no-load, extends battery-life of applications requiring very long standby time.

Thanks to its ultra low noise value and high PSRR, the **LDLN025** provides a very clean output, suitable for ultra-sensitive loads. It is stable with ceramic capacitors.

The enable logic control function puts the device into shutdown mode allowing a total current consumption lower than 1  $\mu\text{A}$ .

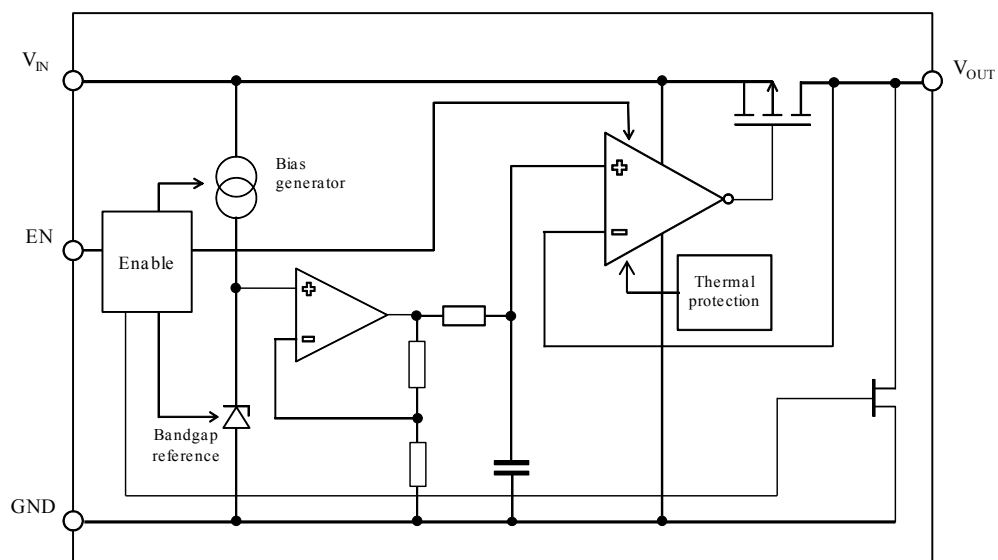
The device also includes short-circuit and thermal protection.

Typical applications are noise sensitive loads such as ADC, VCO in mobile phones and tablets, wireless LAN devices. The **LDLN025** is designed to keep the quiescent current under control and at a low value also during dropout operation, extending the operating time of battery-powered devices.

Several small package options are available.

## 1 Block diagram

Figure 1. Block diagram



AMG280620171000MT

## 2 Pin configuration

Figure 2. Pin configuration

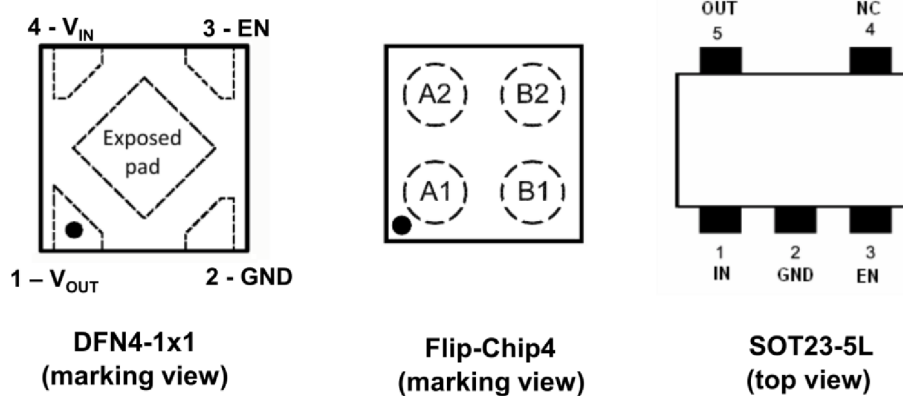
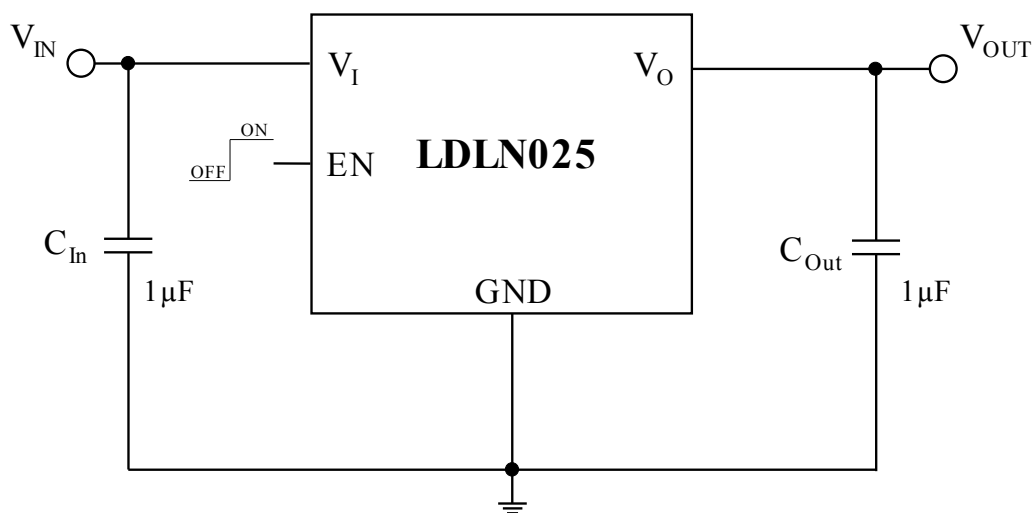


Table 1. Pin description

| Symbol      | DFN4-1x1    | Flip-Chip4 | SOT23-5L | Description                                                                                                                                                       |
|-------------|-------------|------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $V_{IN}$    | 4           | A1         | 1        | LDO Supply voltage                                                                                                                                                |
| $V_{OUT}$   | 1           | A2         | 5        | LDO Output voltage                                                                                                                                                |
| GND         | 2           | B2         | 2        | Ground                                                                                                                                                            |
| EN          | 3           | B1         | 3        | Enable input: set $V_{EN}$ = high to turn on the device;<br>$V_{EN}$ = low to turn off the device<br>This pin is internally pulled down via 1 M $\Omega$ resistor |
| NC          | -           | -          | 4        | Not internally connected: can be connected to GND                                                                                                                 |
| Exposed pad | Exposed pad | -          | -        | Must be connected to GND                                                                                                                                          |

### 3 Typical application diagram

Figure 3. Typical application diagram



AMG010720161412MT

## 4 Maximum ratings

**Table 2. Absolute maximum ratings**

| Symbol      | Parameter                      | Value                  | Unit |
|-------------|--------------------------------|------------------------|------|
| $V_{IN}$    | Input supply voltage           | -0.3 to 7              | V    |
| $V_{OUT}$   | Output voltage                 | -0.3 to $V_{IN} + 0.3$ | V    |
| $I_{OUT}$   | Output current                 | Internally limited     | A    |
| EN          | Enable pin voltage             | -0.3 to $V_{IN} + 0.3$ | V    |
| $P_D$       | Power dissipation              | Internally limited     | W    |
| ESD         | Charge device model            | $\pm 1000$             | V    |
|             | Human body model               | $\pm 2000$             |      |
| $T_{J-OP}$  | Operating junction temperature | -40 to 125             | °C   |
| $T_{J-MAX}$ | Maximum junction temperature   | 150                    | °C   |
| $T_{STG}$   | Storage temperature            | -55 to 150             | °C   |

**Table 3. Thermal data**

| Symbol     | Parameter                               | DFN4-1x1 | Flip-Chip4 | SOT23-5L | Unit |
|------------|-----------------------------------------|----------|------------|----------|------|
| $R_{thja}$ | Thermal resistance, junction-to-ambient | 220      | 210        | 200      | °C/W |

## 5 Electrical characteristics

( $T_J = 25\text{ }^{\circ}\text{C}$ ,  $V_{IN} = V_{OUT(nom)} + 1\text{ V}$  or  $1.5\text{ V}$ , whichever is greater;  $V_{EN} = 1.2\text{ V}$ ;  $C_{IN} = 1\text{ }\mu\text{F}$ ;  $C_{OUT} = 1\text{ }\mu\text{F}$ ;  $I_{OUT} = 1\text{ mA}$ )

**Table 4. Electrical characteristics**

| Symbol                          | Parameter                                        | Test conditions                                                                                                                                                                                                 | Min. | Typ.  | Max.  | Unit                |
|---------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------|-------|---------------------|
| $V_{IN}$                        | Operating input voltage range                    |                                                                                                                                                                                                                 | 1.5  |       | 5.5   | V                   |
| $V_{OUT}$                       | Output voltage accuracy (Flip-Chip package)      | $V_{OUT} + 1\text{ V} < V_{IN} < 5.5\text{ V}$ , <sup>(1)</sup><br>$1\text{ mA} < I_{OUT} < 0.25\text{ A}$ , $V_{OUT} \geq 1.8\text{ V}$ ,<br>$-40\text{ }^{\circ}\text{C} < T_J < 125\text{ }^{\circ}\text{C}$ | -2.0 |       | +2.0  | %                   |
|                                 |                                                  | $V_{OUT} + 1\text{ V} < V_{IN} < 5.5\text{ V}$ , <sup>(1)</sup><br>$1\text{ mA} < I_{OUT} < 0.25\text{ A}$ , $V_{OUT} < 1.8\text{ V}$ ,<br>$-40\text{ }^{\circ}\text{C} < T_J < 125\text{ }^{\circ}\text{C}$    | -3.0 |       | +3.0  |                     |
| $V_{OUT}$                       | Output voltage accuracy (DFN and SOT23 packages) | $V_{OUT} + 1\text{ V} < V_{IN} < 5.5\text{ V}$ , <sup>(1)</sup><br>$1\text{ mA} < I_{OUT} < 0.25\text{ A}$ , $V_{OUT} \geq 1.8\text{ V}$ ,<br>$-40\text{ }^{\circ}\text{C} < T_J < 125\text{ }^{\circ}\text{C}$ | -2.0 |       | +2.0  | %                   |
|                                 |                                                  | $V_{OUT} + 1\text{ V} < V_{IN} < 5.5\text{ V}$ , <sup>(1)</sup><br>$1\text{ mA} < I_{OUT} < 0.25\text{ A}$ , $V_{OUT} < 1.8\text{ V}$ ,<br>$-40\text{ }^{\circ}\text{C} < T_J < 125\text{ }^{\circ}\text{C}$    | -4.0 |       | +4.0  |                     |
| $\Delta V_{OUT}/\Delta V_{IN}$  | Static line regulation                           | $V_{OUT} + 1\text{ V} < V_{IN} < 5.5\text{ V}$ <sup>(1)</sup><br>$-40\text{ }^{\circ}\text{C} < T_J < 125\text{ }^{\circ}\text{C}$                                                                              |      | 0.02  | 0.06  | %/V                 |
|                                 | Line transient <sup>(2)</sup>                    | $\Delta V_{IN} = \pm 0.6\text{ V}$ , $t_{rise} = t_{fall} = 30\text{ }\mu\text{s}$                                                                                                                              | -1   |       | +1    |                     |
| $\Delta V_{OUT}/\Delta I_{OUT}$ | Static load regulation                           | $1\text{ mA} < I_{OUT} < 0.25\text{ A}$ , $V_{OUT} \geq 1.8\text{ V}$<br>$-40\text{ }^{\circ}\text{C} < T_J < 125\text{ }^{\circ}\text{C}$ , $V_{OUT} \geq 1.8\text{ V}$                                        |      | 0.002 | 0.007 | %/mA                |
|                                 |                                                  | $1\text{ mA} < I_{OUT} < 0.25\text{ A}$ , $V_{OUT} < 1.8\text{ V}$                                                                                                                                              |      | 20    |       |                     |
|                                 |                                                  | $\Delta I_{OUT} = 1\text{ mA}$ to $250\text{ mA}$ and back,<br>$t_{rise} = t_{fall} = 10\text{ }\mu\text{s}$                                                                                                    | -40  |       | +40   | mV                  |
|                                 | Load transient <sup>(2)</sup>                    |                                                                                                                                                                                                                 |      |       |       | mV                  |
| $\Delta V_{OUT}$                | Overshoot on startup <sup>(2)</sup>              | Percentage of $V_{OUT(nom)}$                                                                                                                                                                                    |      |       | 5     | %                   |
| $V_{DROP}$                      | Dropout voltage <sup>(3)</sup>                   | $I_{OUT} = 0.1\text{ A}$                                                                                                                                                                                        |      | 50    |       | mV                  |
|                                 |                                                  | $I_{OUT} = 0.25\text{ A}$                                                                                                                                                                                       |      | 120   |       |                     |
|                                 |                                                  | $I_{OUT} = 0.25\text{ A}$ , $-40\text{ }^{\circ}\text{C} < T_J < 125\text{ }^{\circ}\text{C}$<br>(Flip-Chip4)                                                                                                   |      |       | 200   |                     |
|                                 |                                                  | $I_{OUT} = 0.25\text{ A}$ , $-40\text{ }^{\circ}\text{C} < T_J < 125\text{ }^{\circ}\text{C}$<br>(DFN4-1x1)                                                                                                     |      |       | 250   |                     |
| eN                              | Output noise voltage <sup>(2)</sup>              | $f = 10\text{ Hz}$ to $100\text{ kHz}$ ; $I_{OUT} = 1\text{ mA}$                                                                                                                                                |      | 10    |       | $\mu\text{V}_{RMS}$ |
|                                 |                                                  | $f = 10\text{ Hz}$ to $100\text{ kHz}$ ; $I_{OUT} = 250\text{ mA}$                                                                                                                                              |      | 6.5   |       |                     |
| SVR                             | Supply voltage rejection <sup>(2)</sup>          | $f = 100\text{ Hz}$ ; $I_{OUT} = 20\text{ mA}$                                                                                                                                                                  |      | 80    |       | dB                  |
|                                 |                                                  | $f = 1\text{ kHz}$ ; $I_{OUT} = 20\text{ mA}$                                                                                                                                                                   |      | 80    |       |                     |
|                                 |                                                  | $f = 10\text{ kHz}$ ; $I_{OUT} = 20\text{ mA}$                                                                                                                                                                  |      | 75    |       |                     |

| Symbol     | Parameter                               | Test conditions                                                                                     | Min. | Typ.  | Max. | Unit             |
|------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------|------|-------|------|------------------|
| SVR        | Supply voltage rejection <sup>(2)</sup> | $f = 100 \text{ kHz}; I_{OUT} = 20 \text{ mA}$                                                      |      | 60    |      | dB               |
| $I_Q$      | Quiescent current <sup>(4)</sup>        | $I_{OUT} = 0 \text{ A}$                                                                             |      | 12    |      | $\mu\text{A}$    |
|            |                                         | $I_{OUT} = 0 \text{ A}; -40^\circ\text{C} < T_J < 125^\circ\text{C}$                                |      |       | 25   |                  |
|            |                                         | $I_{OUT} = 0.25 \text{ A}$                                                                          |      | 250   |      | $\mu\text{A}$    |
|            |                                         | $I_{OUT} = 0.25 \text{ A}; -40^\circ\text{C} < T_J < 125^\circ\text{C}$                             |      |       | 425  |                  |
|            | Shutdown current                        | $V_{EN} = 0 \text{ V}$                                                                              |      | 0.2   | 1    | $\mu\text{A}$    |
| $I_{SC}$   | Short-circuit current                   | $V_{OUT} = 0 \text{ V}$                                                                             | 250  | 500   |      | mA               |
| $R_{LOW}$  | Output discharge resistance             | $V_{EN} = 0 \text{ V}$                                                                              |      | 230   |      | $\Omega$         |
| $V_{EN}$   | $V_{IL}$ , enable input logic low       | $V_{OUT} + 1 \text{ V} < V_{IN} < 5.5 \text{ V}; -40^\circ\text{C} < T_J < 125^\circ\text{C}^{(1)}$ |      |       | 0.4  | V                |
|            | $V_{IH}$ , enable input logic high      |                                                                                                     | 1.2  |       |      |                  |
| $I_{EN}$   | Enable pin input current                | $V_{IN} = V_{EN} = 5.5 \text{ V}$                                                                   |      | 5.5   |      | $\mu\text{A}$    |
|            |                                         | $V_{IN} = 5.5 \text{ V}; V_{EN} = 0 \text{ V}$                                                      |      | 0.001 |      |                  |
| $t_{ON}$   | Turn-on time <sup>(2)</sup>             | From $V_{EN} > V_{IH}$ to $V_{OUT} = 95\%$ of $V_{OUT(nom)}$                                        |      | 80    | 150  | $\mu\text{s}$    |
| $T_{SHDN}$ | Thermal shutdown <sup>(2)</sup>         | $I_{OUT} > 1 \text{ mA}$                                                                            |      | 160   |      | $^\circ\text{C}$ |
|            | Hysteresis                              |                                                                                                     |      | 20    |      |                  |

1.  $V_{IN} = V_{OUT} + 1 \text{ V}$  or  $1.5 \text{ V}$ , whichever is greater. Not applicable for  $5 \text{ V}$  output voltage versions.
2. Guaranteed by design.
3. Dropout voltage is the input-to-output voltage difference at which the output voltage is  $100 \text{ mV}$  below its nominal value.
4. The quiescent current is defined as  $I_{IN}-I_{OUT}$  and does not include the  $EN$  pin current.

**Table 5. Recommended input and output capacitors**

| Symbol    | Parameter                | Test conditions | Min. | Typ. | Max. | Unit          |
|-----------|--------------------------|-----------------|------|------|------|---------------|
| $C_{IN}$  | Input capacitance        | Stability       | 0.7  | 1    |      | $\mu\text{F}$ |
| $C_{OUT}$ | Output capacitance       |                 | 0.7  | 1    | 10   |               |
| ESR       | Output/input capacitance |                 | 5    |      | 500  | m $\Omega$    |

## 6 Typical characteristics

(The following plots are referred to LDLN025J2925R in the typical application circuit and, unless otherwise noted, at  $T_A = 25^\circ\text{C}$ ).

**Figure 4. Output voltage vs. temperature ( $V_{IN} = 3.925\text{ V}$ )**

$V_{IN} = V_{OUT} + 1\text{ V}$ ,  $E_N = 2\text{ V}$ ,  $I_{OUT}$  = from 0 to 250 mA,  $C_{IN} = 1\text{ }\mu\text{F}$ ,  $C_{OUT} = 1\text{ }\mu\text{F}$

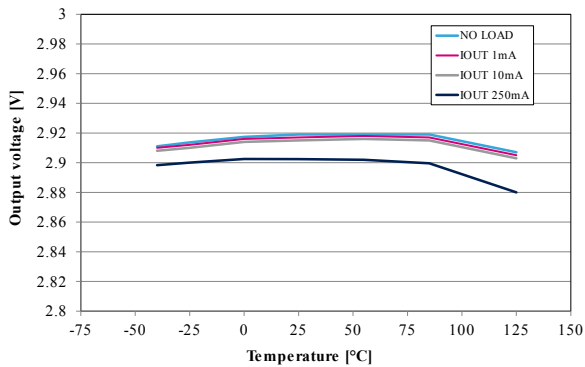


**Figure 5. Output voltage vs. temperature ( $V_{IN} = 5.5\text{ V}$ )**

$V_{IN} = 5.5\text{ V}$ ;  $I_{OUT}$  = from 0 to 250 mA,  $C_{IN} = 1\text{ }\mu\text{F}$ ,  $C_{OUT} = 1\text{ }\mu\text{F}$

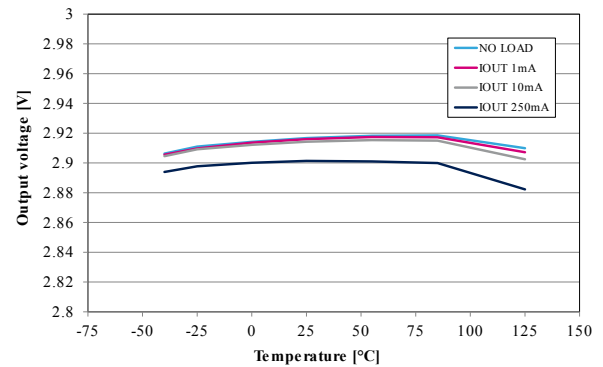


**Figure 6. Load regulation vs. temperature**

$V_{IN} = V_{OUT} + 1\text{ V}$ ;  $I_{OUT}$  = from 1 mA to 0.25 A,  $C_{IN} = 1\text{ }\mu\text{F}$ ,  $C_{OUT} = 1\text{ }\mu\text{F}$

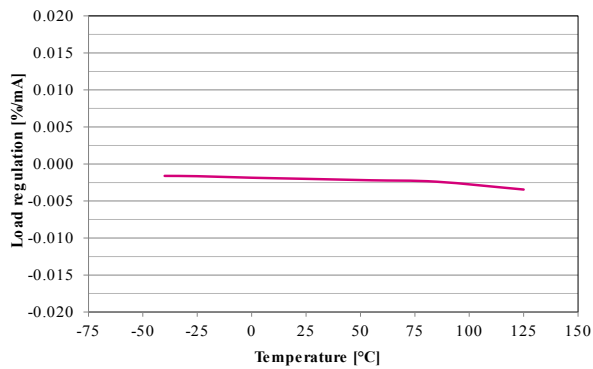


**Figure 7. Line regulation vs. temperature**

$V_{IN}$  = from 3.925 to 5.5 V,  $I_{OUT} = 1\text{ mA}$ ,  $C_{IN} = 1\text{ }\mu\text{F}$ ,  $C_{OUT} = 1\text{ }\mu\text{F}$

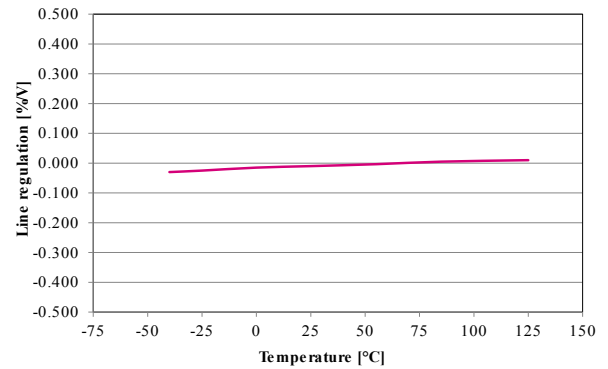


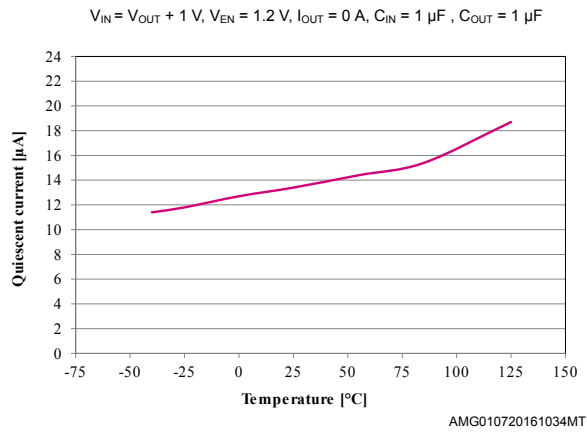
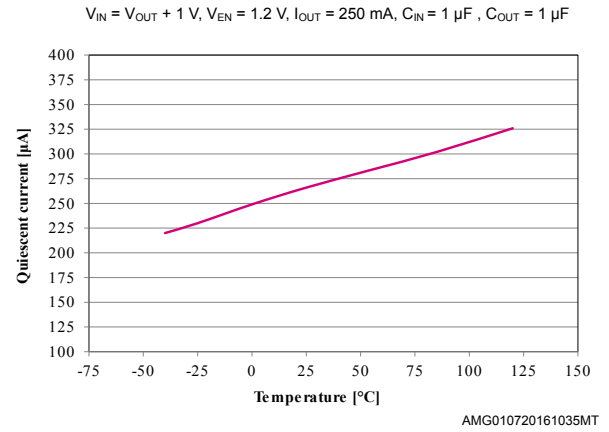
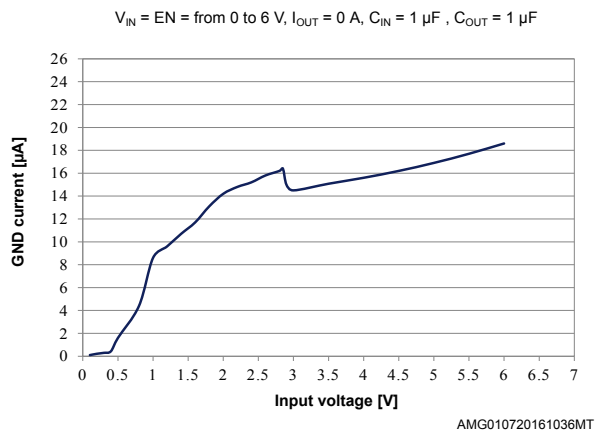
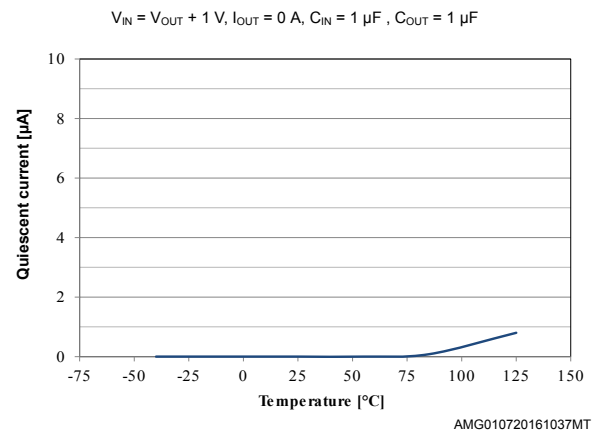
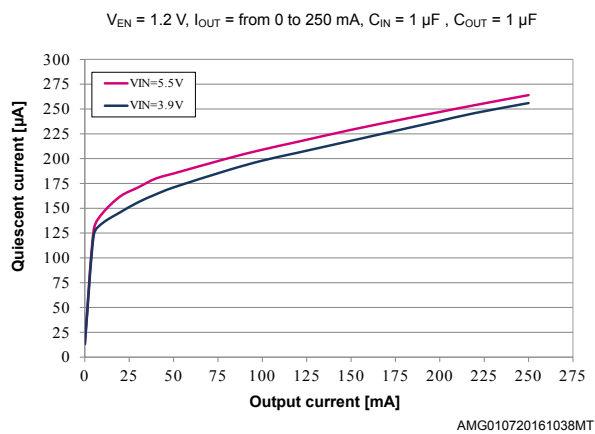
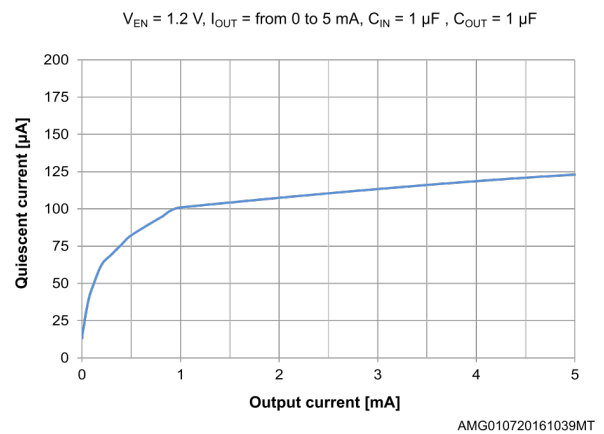
**Figure 8. Quiescent current vs. temperature ( $I_{OUT} = 0$  mA)**

**Figure 9. Quiescent current vs. temperature ( $I_{OUT} = 250$  mA)**

**Figure 10. GND current vs. input voltage**

**Figure 11. Off-state current vs. temperature**

**Figure 12. Quiescent current vs. output current**

**Figure 13. Quiescent current vs. output current (zoom)**


**Figure 14. Dropout voltage vs. temperature**

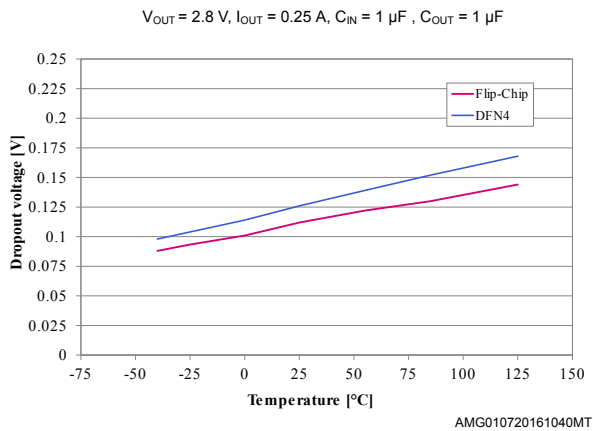


**Figure 15. Dropout voltage vs. load current**

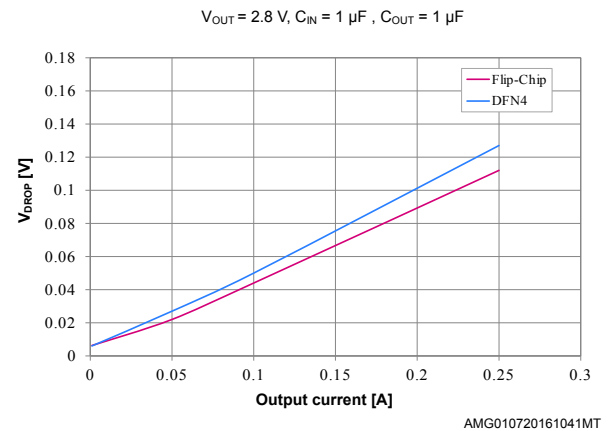


**Figure 16. Output voltage vs. input voltage**

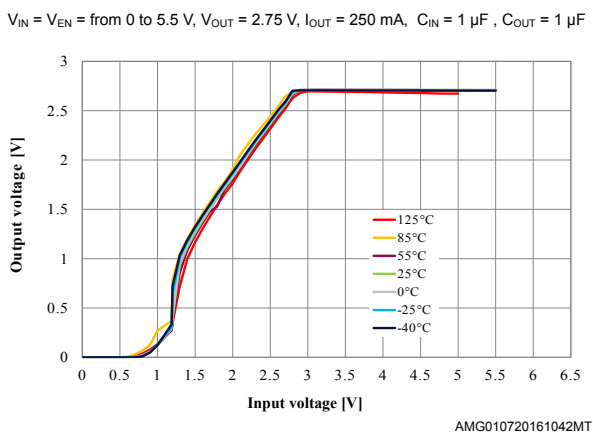


**Figure 17. Short circuit current vs. dropout voltage**

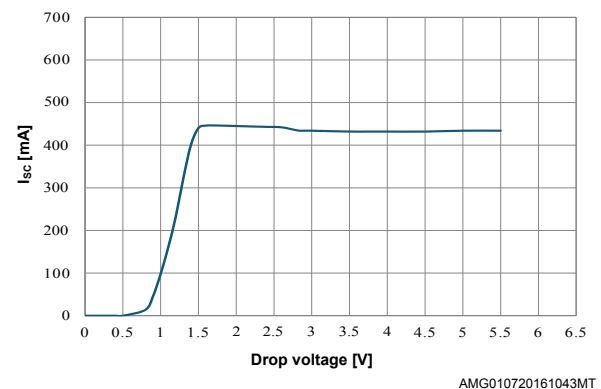


**Figure 18. Enable threshold vs. temperature**

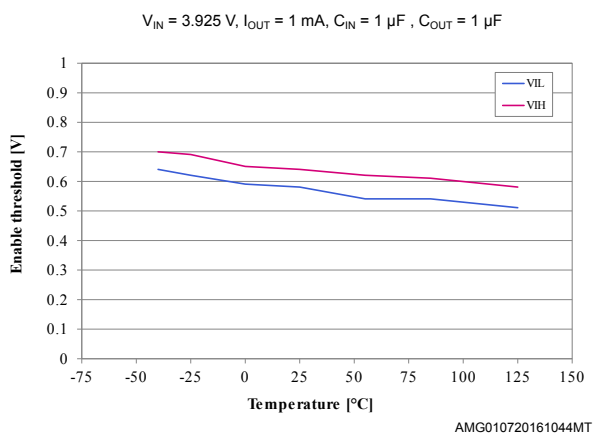


**Figure 19. Stability region vs.  $C_{OUT}$  and ESR**

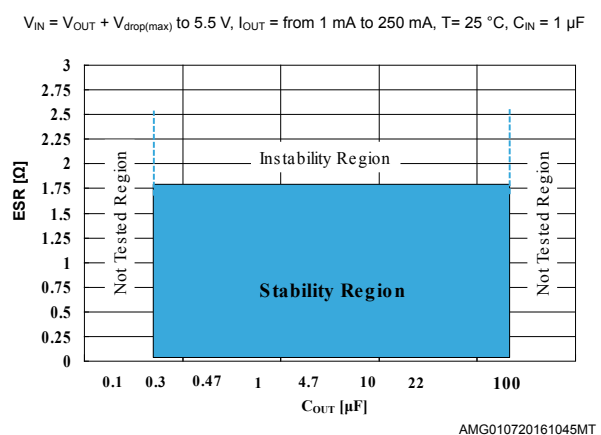


**Figure 20. PSRR vs. frequency ( $V_{OUT} = 2.75\text{ V}$ )**

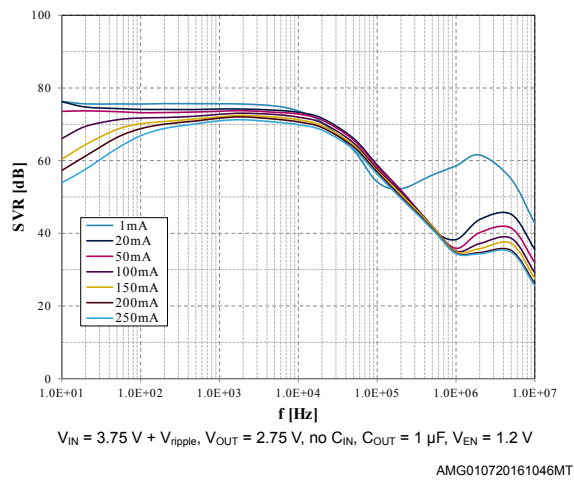


**Figure 21. PSRR vs. frequency ( $V_{OUT} = 1.8\text{ V}$ )**

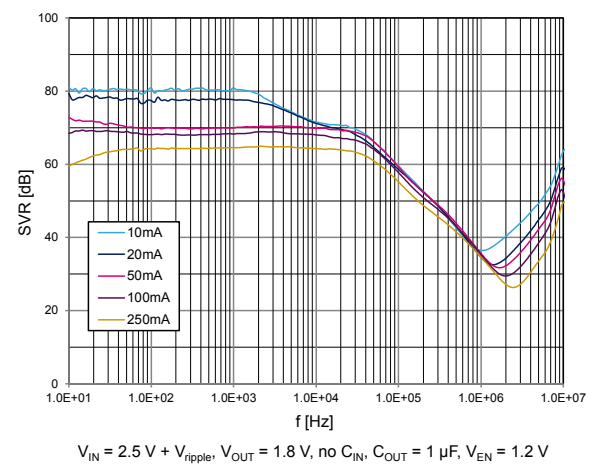


**Figure 22. PSRR vs. frequency ( $V_{OUT} = 5\text{ V}$ )**

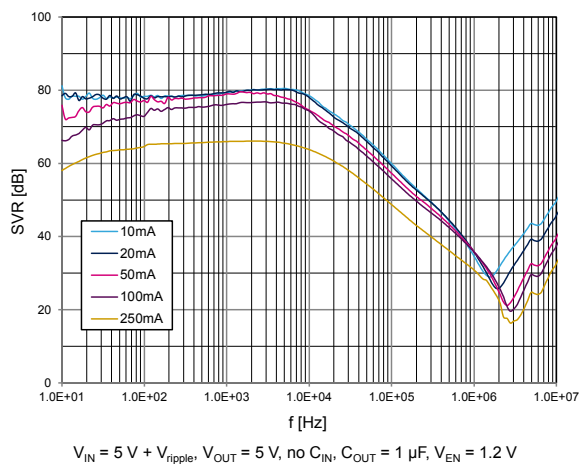


**Figure 23. Noise density**

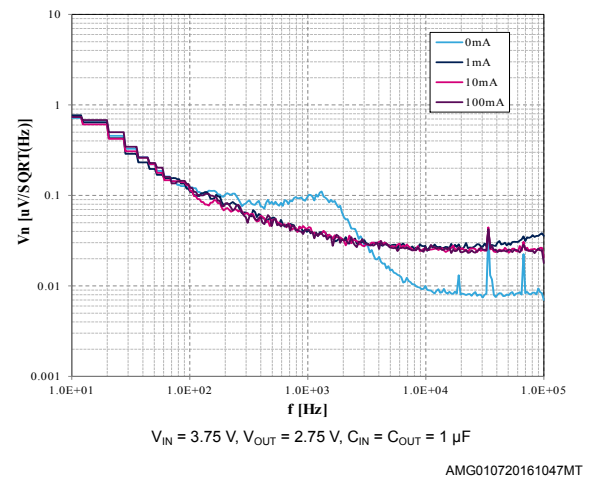


**Figure 24. Line transient ( $I_{OUT} = 1\text{ mA}$ )**

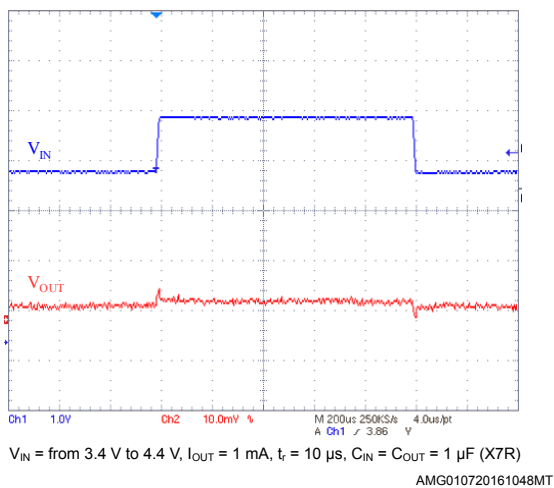


**Figure 25. Line transient ( $I_{OUT} = 250\text{ mA}$ )**

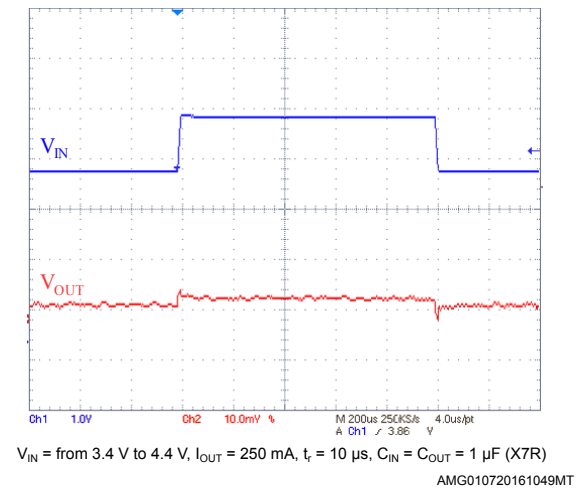
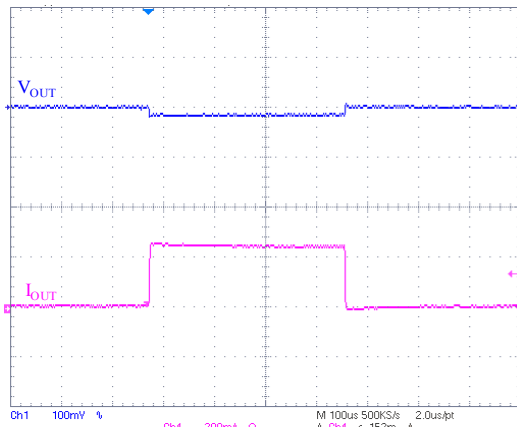
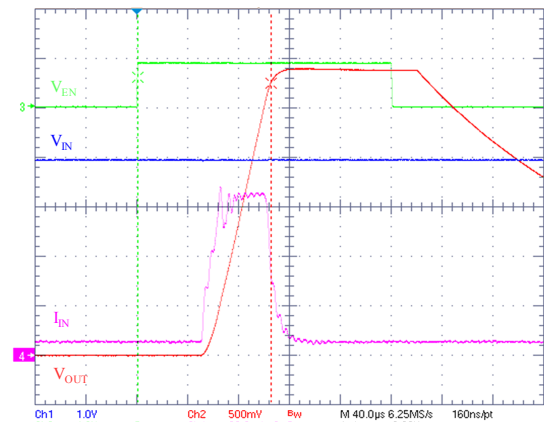
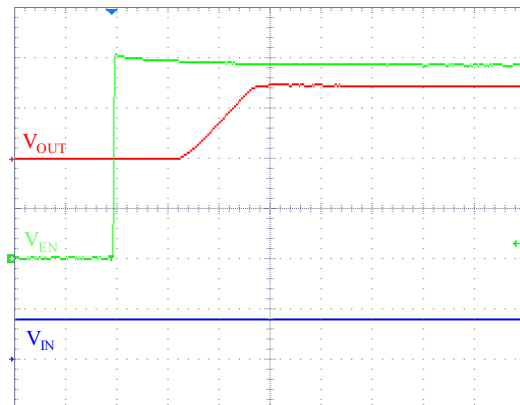


**Figure 26. Load transient**

 $I_{OUT}$  = from 0 mA to 250 mA,  $t_r$  = 10  $\mu$ s,  $C_{IN}$  =  $C_{OUT}$  = 1  $\mu$ F (X7R)

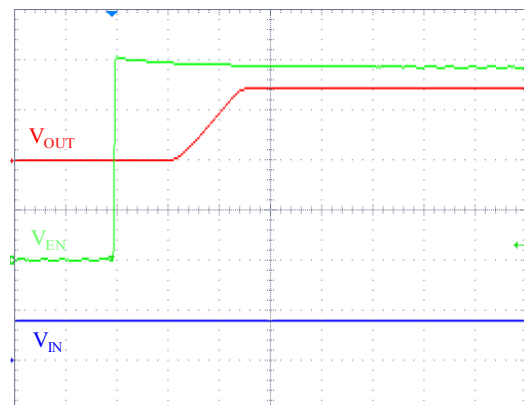
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**Figure 27. Inrush current**

 $V_{IN}$  = 4 V,  $I_{OUT}$  = 0 mA,  $C_{IN}$  =  $C_{OUT}$  = 1  $\mu$ F (X7R)

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**Figure 28. Enable transient ( $I_{OUT}$  = 0 mA)**

 $V_{IN}$  = 3.925 V,  $V_{EN}$  = from 0 V to 3.925 V,  $I_{OUT}$  = 0 mA,  $t_r$  = 1  $\mu$ s,  $C_{IN}$  =  $C_{OUT}$  = 1  $\mu$ F (X7R)

AMG010720161052MT

**Figure 29. Enable transient ( $I_{OUT}$  = 250 mA)**

 $V_{IN}$  = 3.925 V,  $V_{EN}$  = from 0 V to 3.925 V,  $I_O$  = 250 mA,  $t_r$  = 1  $\mu$ s,  $C_{IN}$  =  $C_{OUT}$  = 1  $\mu$ F (X7R)

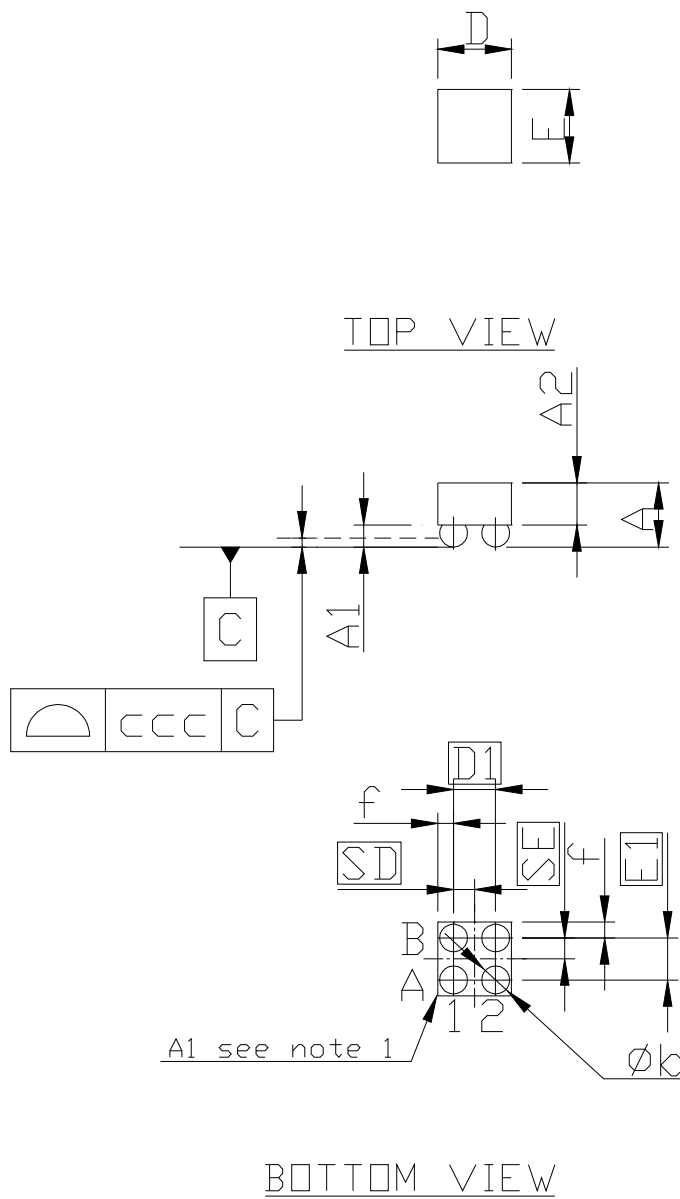
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## 7

In order to meet environmental requirements, ST offers these devices in different grades of **ECOPACK** packages, depending on their level of environmental compliance. ECOPACK specifications, grade definitions and product status are available at: [www.st.com](http://www.st.com). ECOPACK is an ST trademark.

## 7.1

### Figure 30. Flip-Chip4 package outline



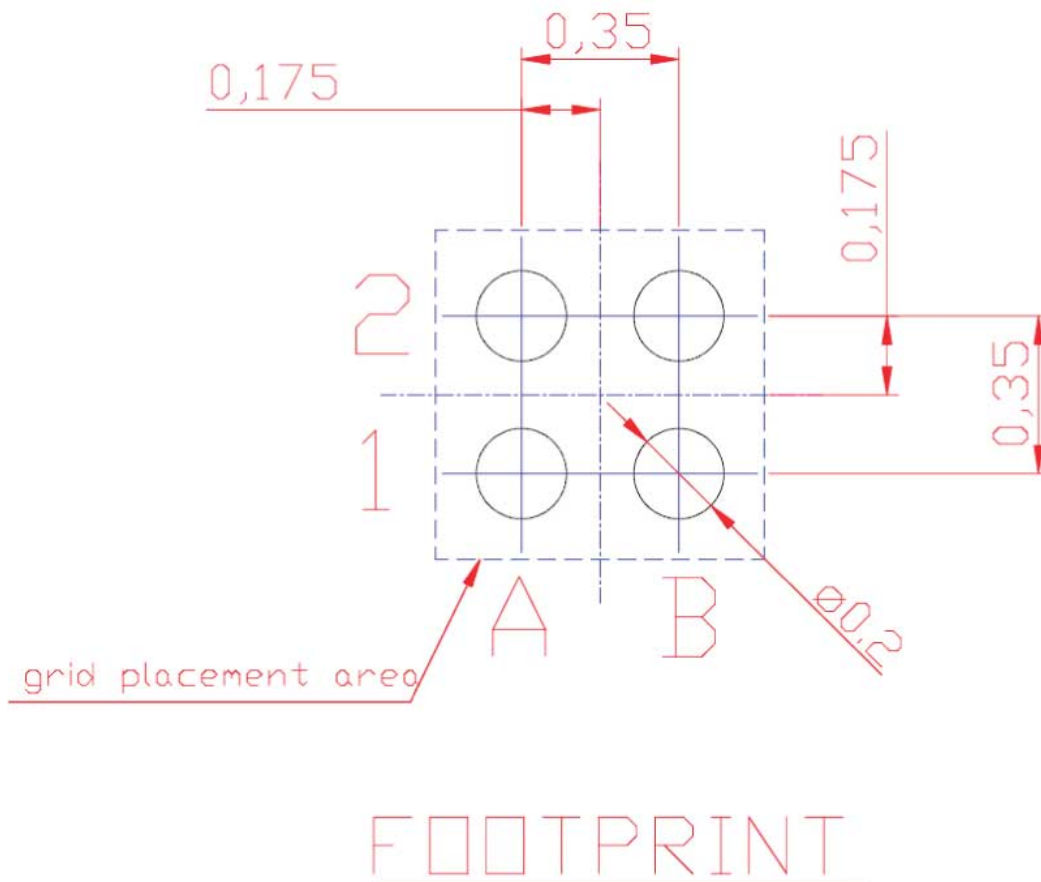
8387748 option F

### Table 6. Flip-Chip4 mechanical data

| Dim.              | mm    |       |       |
|-------------------|-------|-------|-------|
|                   | Min.  | Typ.  | Max.  |
| A                 | 0.375 | 0.410 | 0.445 |
| A1                | 0.145 | 0.160 | 0.175 |
| A2 <sup>(1)</sup> | 0.230 | 0.250 | 0.270 |
| b                 | 0.189 | 0.210 | 0.231 |
| D                 | 0.598 | 0.628 | 0.658 |
| D1                |       | 0.350 |       |
| E                 | 0.598 | 0.628 | 0.658 |
| E1                |       | 0.350 |       |
| SD                |       | 0.175 |       |
| SE                |       | 0.175 |       |
| f                 |       | 0.139 |       |
| ccc               |       | 0.075 |       |

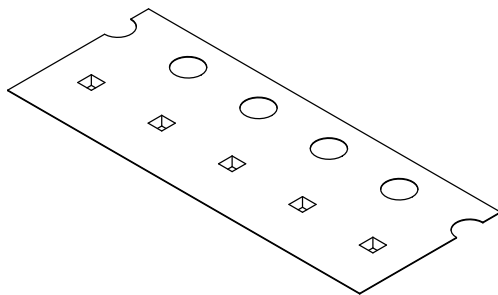
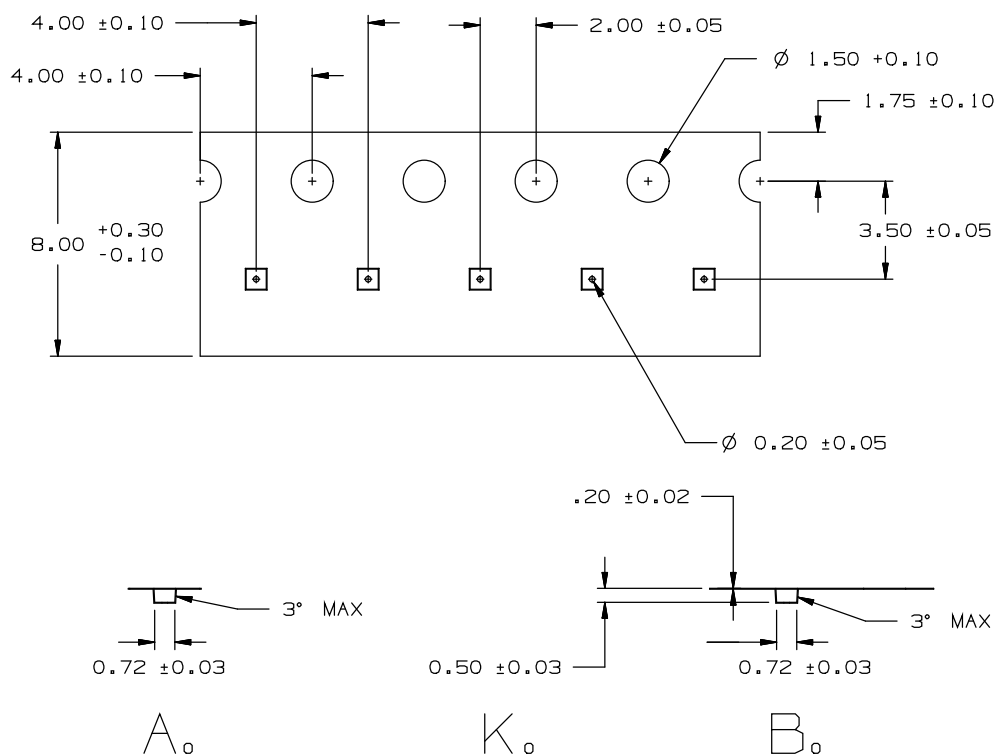
1. Including back coating.

**Figure 31. Flip-Chip4 recommended footprint**



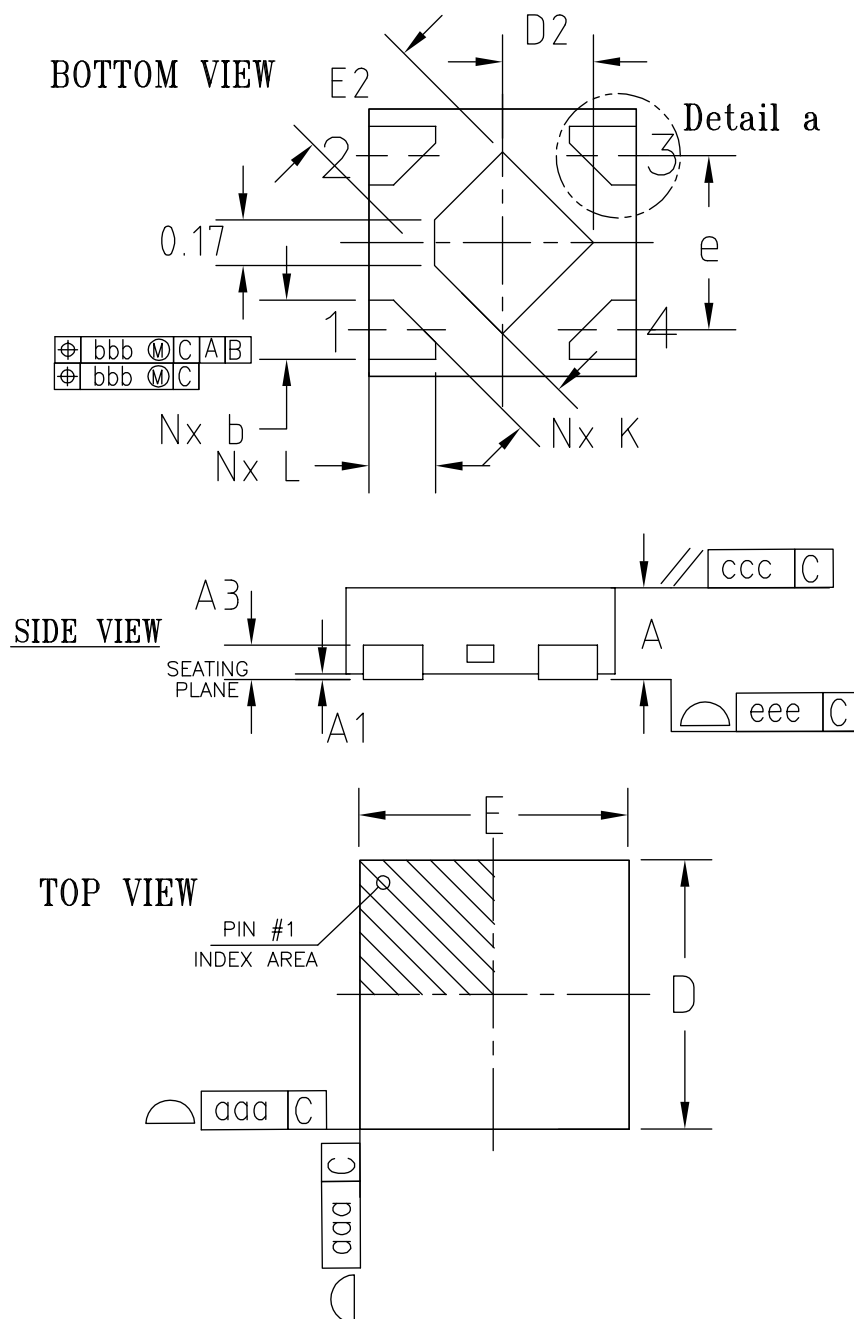
## 7.2 Flip-Chip4\_160304-47\_carrier\_tape

**Figure 32. Flip-Chip4 carrier tape**



### 7.3 DFN4-1x1 package info

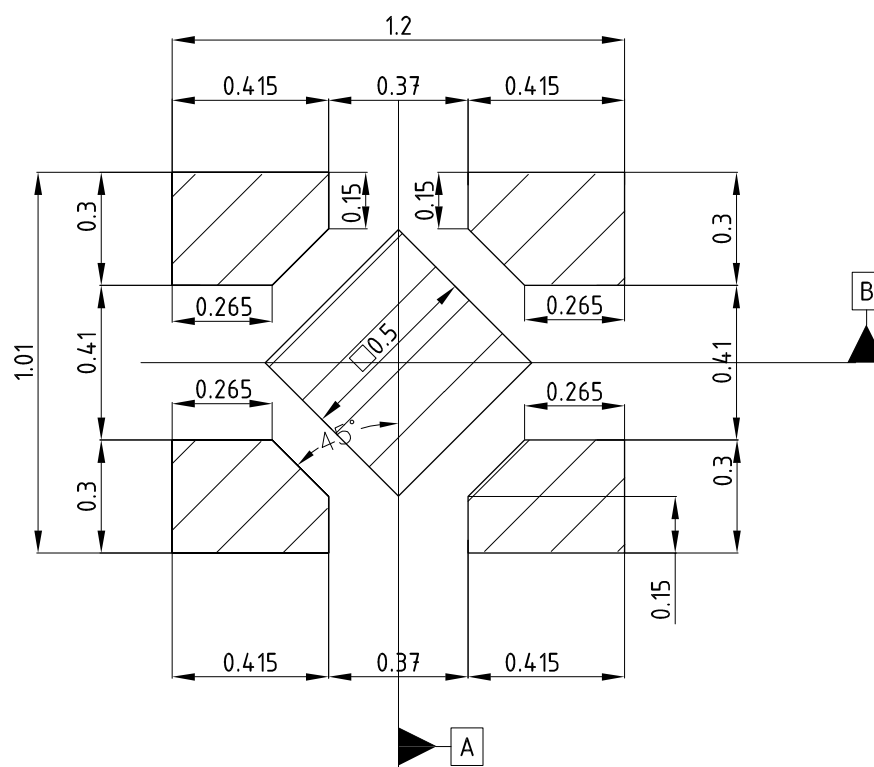
Figure 33. DFN4-1x1 package outline



### Table 7. DFN4-1x1 package mechanical data

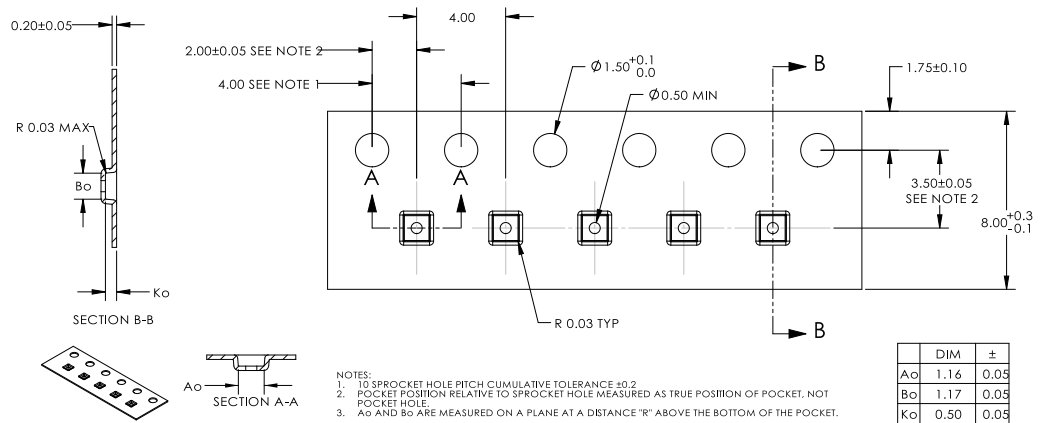
| Dim. | mm         |      |      |
|------|------------|------|------|
|      | Min.       | Typ. | Max. |
| A    | 0.34       | 0.37 | 0.40 |
| A1   | 0.00       | 0.02 | 0.05 |
| A3   | 0.127 REF. |      |      |
| b    | 0.17       | 0.22 | 0.27 |
| D    | 0.95       | 1.00 | 1.05 |
| E    | 0.95       | 1.00 | 1.05 |
| e    | 0.65 BSC   |      |      |
| D2   | 0.43       | 0.48 | 0.53 |
| E2   | 0.43       | 0.48 | 0.53 |
| K    | 0.15       |      |      |
| L    | 0.20       | 0.25 | 0.30 |
| N    | 4          |      |      |
| ND   | 2          |      |      |

**Figure 34. DFN4-1x1 recommended footprint**



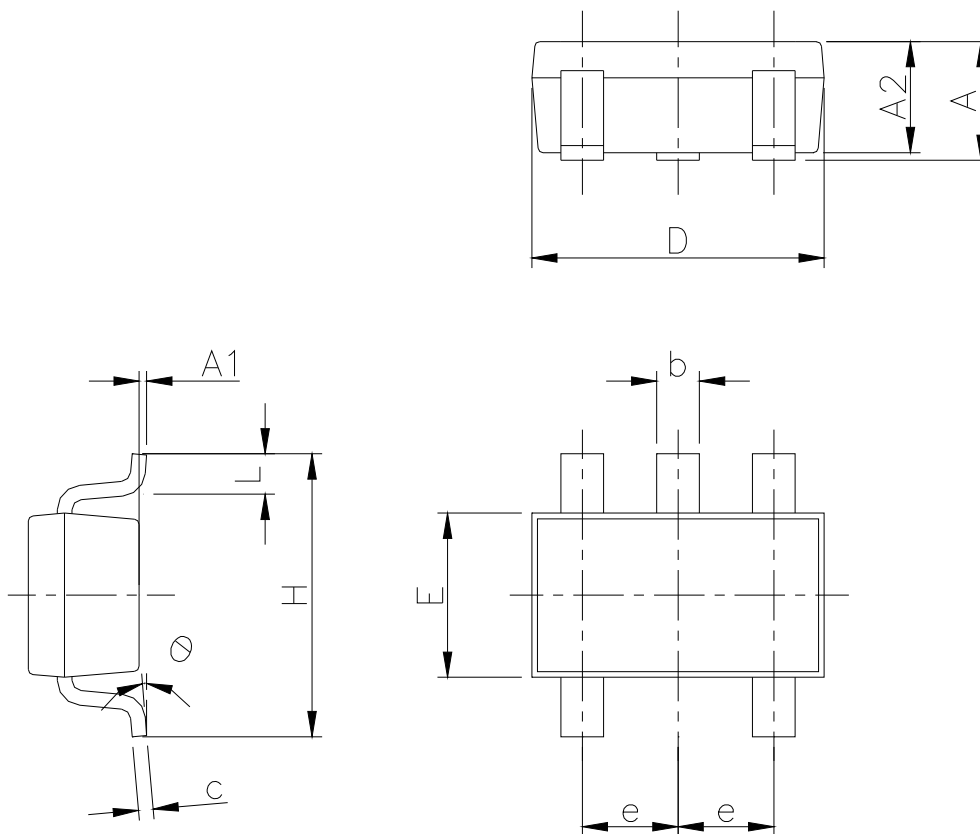
## 7.4 DFN4\_1x1x0.38\_pitch\_4mm\_carrier\_tape

**Figure 35. DFN4 (1x1x0.38 pitch 4 mm) carrier tape**



## 7.5 SOT23-5L mechanical data

**Figure 36. SOT23-5L package outline**

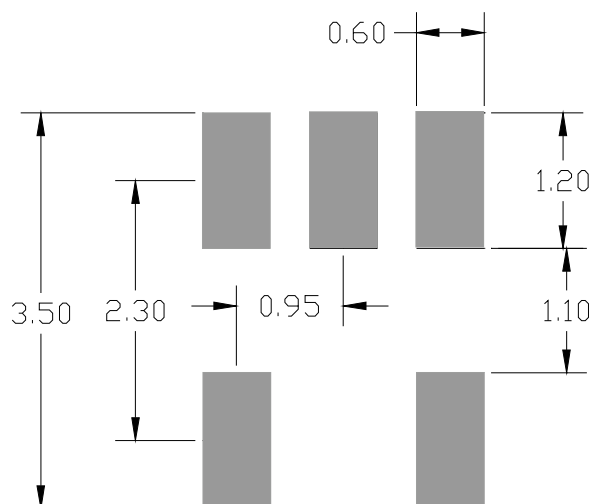


7049676\_k

**Table 8. SOT23-5L package mechanical data**

| Dim.     | mm   |      |      |
|----------|------|------|------|
|          | Min. | Typ. | Max. |
| A        | 0.90 |      | 1.45 |
| A1       | 0    |      | 0.15 |
| A2       | 0.90 |      | 1.30 |
| b        | 0.30 |      | 0.50 |
| c        | 0.09 |      | 0.20 |
| D        |      | 2.95 |      |
| E        |      | 1.60 |      |
| e        |      | 0.95 |      |
| H        |      | 2.80 |      |
| L        | 0.30 |      | 0.60 |
| $\theta$ | 0°   |      | 8°   |

Figure 37. SOT23-5L recommended footprint



*Note:* Dimensions are in mm

## 8 Ordering information

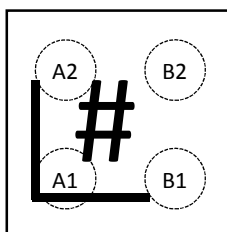
**Table 9. Order code**

| Order code                 | Package    | Output voltage (V) | Marking | Packing       |
|----------------------------|------------|--------------------|---------|---------------|
| LDLN025PU12R               | DFN4-1x1   | 1.2                | 12      | Tape and reel |
| LDLN025PU18R               |            | 1.8                | 18      |               |
| LDLN025PU25R               |            | 2.5                | 25      |               |
| LDLN025PU275R              |            | 2.75               | 2Z      |               |
| LDLN025PU28R               |            | 2.8                | 28      |               |
| LDLN025PU29R               |            | 2.9                | 29      |               |
| LDLN025PU30R               |            | 3.0                | 30      |               |
| LDLN025PU32R               |            | 3.2                | 32      |               |
| LDLN025PU33R               |            | 3.3                | 33      |               |
| LDLN025PU50R               |            | 5.0                | 50      |               |
| LDLN025J12R                | Flip-Chip4 | 1.2                | M       |               |
| LDLN025J18R                |            | 1.8                | E       |               |
| LDLN025J25R                |            | 2.5                | H       |               |
| LDLN025J28R                |            | 2.8                | I       |               |
| LDLN025J29R                |            | 2.9                | S       |               |
| LDLN025J2925R              |            | 2.925              | K       |               |
| LDLN025J30R <sup>(1)</sup> |            | 3.0                | G       |               |
| LDLN025J32R                |            | 3.2                | N       |               |
| LDLN025J33R                |            | 3.3                | F       |               |
| LDLN025J50R                |            | 5.0                | P       |               |
| LDLN025M12R                | SOT23-5L   | 1.2                | LN12    |               |
| LDLN025M15R                |            | 1.5                | LN15    |               |
| LDLN025M18R                |            | 1.8                | LN18    |               |
| LDLN025M25R                |            | 2.5                | LN25    |               |
| LDLN025M28R                |            | 2.8                | LN28    |               |
| LDLN025M30R                |            | 3.0                | LN30    |               |
| LDLN025M33R                |            | 3.3                | LN33    |               |
| LDLN025M45R                |            | 4.5                | LN45    |               |

1. Part number in development. Contact our sales office.

## 8.1 Marking information

**Figure 38.** Flip-Chip marking composition (marking view)



AMG260720161100MT

*Note:* the symbol # indicates the marking digit, as per [Table 9. Order code](#).

## Revision history

**Table 10. Document revision history**

| Date        | Revision | Changes                                                                                                                                                                                                                                                                       |
|-------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 03-Aug-2016 | 1        | First release.                                                                                                                                                                                                                                                                |
| 01-Sep-2016 | 2        | Updated Table 8: "Order code".<br>Minor text changes.                                                                                                                                                                                                                         |
| 24-Oct-2016 | 3        | Updated Table 2: "Absolute maximum ratings".<br>Minor text changes.                                                                                                                                                                                                           |
| 17-Nov-2016 | 4        | Updated Section 9: "Ordering information". Minor text changes.                                                                                                                                                                                                                |
| 12-Jul-2017 | 5        | Added SOT23-5L package.<br>Modified silhouette, features, Figure 1: "Block diagram", Section 2: "Pin configuration" and Table 4: "Electrical characteristics".<br>Added Section 7.5: "SOT23-5L package information".<br>Updated Table 9: "Order code".<br>Minor text changes. |
| 09-Oct-2018 | 6        | Added Figure 21. PSRR vs. frequency ( $V_{OUT} = 1.8\text{ V}$ ), Figure 22. PSRR vs. frequency ( $V_{OUT} = 5\text{ V}$ ), new order codes LDLN025PU12R and LDLN025J29R in Table 9. Order code.                                                                              |
| 08-May-2019 | 7        | Added footnote on A2 parameter in Table 6. Flip-Chip4 mechanical data..                                                                                                                                                                                                       |
| 16-Jul-2021 | 8        | Update Figure 33. DFN4-1x1 package outline and Table 7. DFN4-1x1 package mechanical data                                                                                                                                                                                      |

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