

## PACKAGING INFORMATION

| Orderable part number       | Status<br>(1) | Material type<br>(2) | Package   Pins | Package qty   Carrier | RoHS<br>(3) | Lead finish/<br>Ball material<br>(4) | MSL rating/<br>Peak reflow<br>(5) | Op temp (°C) | Part marking<br>(6) |
|-----------------------------|---------------|----------------------|----------------|-----------------------|-------------|--------------------------------------|-----------------------------------|--------------|---------------------|
| <a href="#">TLE2021ACD</a>  | Obsolete      | Production           | SOIC (D)   8   | -                     | -           | Call TI                              | Call TI                           | -            | 2021AC              |
| <a href="#">TLE2021ACDR</a> | Last Time Buy | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -            | 2021AC              |
| <a href="#">TLE2021ACP</a>  | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -            | TLE2021AC           |
| TLE2021ACP.A                | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -40 to 85    | TLE2021AC           |
| <a href="#">TLE2021AID</a>  | Obsolete      | Production           | SOIC (D)   8   | -                     | -           | Call TI                              | Call TI                           | -40 to 85    | 2021AI              |
| <a href="#">TLE2021AIDR</a> | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -            | 2021AI              |
| TLE2021AIDR.A               | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | 2021AI              |
| <a href="#">TLE2021AIP</a>  | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -            | TLE2021AI           |
| TLE2021AIP.A                | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -40 to 85    | TLE2021AI           |
| <a href="#">TLE2021CD</a>   | Obsolete      | Production           | SOIC (D)   8   | -                     | -           | Call TI                              | Call TI                           | 0 to 70      | 2021C               |
| <a href="#">TLE2021CDR</a>  | Last Time Buy | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | 0 to 70      | 2021C               |
| <a href="#">TLE2021CP</a>   | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | 0 to 70      | TLE2021CP           |
| TLE2021CP.A                 | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | 0 to 70      | TLE2021CP           |
| TLE2021CPE4                 | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | 0 to 70      | TLE2021CP           |
| <a href="#">TLE2021ID</a>   | Obsolete      | Production           | SOIC (D)   8   | -                     | -           | Call TI                              | Call TI                           | -40 to 85    | 2021I               |
| <a href="#">TLE2021IDR</a>  | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | 2021I               |
| TLE2021IDR.A                | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | 2021I               |
| <a href="#">TLE2021IP</a>   | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -40 to 85    | TLE2021IP           |
| TLE2021IP.A                 | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -40 to 85    | TLE2021IP           |
| <a href="#">TLE2021MD</a>   | Active        | Production           | SOIC (D)   8   | 75   TUBE             | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -55 to 125   | 2021M               |
| TLE2021MD.A                 | Active        | Production           | SOIC (D)   8   | 75   TUBE             | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -55 to 125   | 2021M               |
| <a href="#">TLE2021MDG4</a> | Active        | Production           | SOIC (D)   8   | 75   TUBE             | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -            | 2021M               |
| TLE2021MDG4.A               | Active        | Production           | SOIC (D)   8   | 75   TUBE             | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -55 to 125   | 2021M               |
| <a href="#">TLE2022ACD</a>  | Obsolete      | Production           | SOIC (D)   8   | -                     | -           | Call TI                              | Call TI                           | 0 to 70      | 2022AC              |
| <a href="#">TLE2022ACDR</a> | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -            | 2022AC              |
| TLE2022ACDR.A               | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85    | 2022AC              |
| <a href="#">TLE2022ACP</a>  | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -            | TLE2022AC           |
| TLE2022ACP.A                | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -40 to 85    | TLE2022AC           |

| Orderable part number           | Status<br>(1) | Material type<br>(2) | Package   Pins | Package qty   Carrier | RoHS<br>(3) | Lead finish/<br>Ball material<br>(4) | MSL rating/<br>Peak reflow<br>(5) | Op temp (°C)  | Part marking<br>(6) |
|---------------------------------|---------------|----------------------|----------------|-----------------------|-------------|--------------------------------------|-----------------------------------|---------------|---------------------|
| <a href="#">TLE2022AID</a>      | Obsolete      | Production           | SOIC (D)   8   | -                     | -           | Call TI                              | Call TI                           | -40 to 85     | 2022AI              |
| <a href="#">TLE2022AIDR</a>     | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -             | 2022AI              |
| <a href="#">TLE2022AIDR.A</a>   | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85     | 2022AI              |
| <a href="#">TLE2022AIP</a>      | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -             | TLE2022AI           |
| <a href="#">TLE2022AIP.A</a>    | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -40 to 85     | TLE2022AI           |
| <a href="#">TLE2022AMD</a>      | Obsolete      | Production           | SOIC (D)   8   | -                     | -           | Call TI                              | Call TI                           | -55 to 125    | 2022AM              |
| <a href="#">TLE2022AMDG4</a>    | Active        | Production           | SOIC (D)   8   | 75   TUBE             | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -             | 2022AM              |
| <a href="#">TLE2022AMDG4.A</a>  | Active        | Production           | SOIC (D)   8   | 75   TUBE             | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -55 to 125    | 2022AM              |
| <a href="#">TLE2022AMDR</a>     | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -55 to 125    | 2022AM              |
| <a href="#">TLE2022AMDR.A</a>   | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -55 to 125    | 2022AM              |
| <a href="#">TLE2022AMDRG4</a>   | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -             | 2022AM              |
| <a href="#">TLE2022AMDRG4.A</a> | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -55 to 125    | 2022AM              |
| <a href="#">TLE2022CD</a>       | Obsolete      | Production           | SOIC (D)   8   | -                     | -           | Call TI                              | Call TI                           | -             | 2022C               |
| <a href="#">TLE2022CDR</a>      | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | 0 to 70       | 2022C               |
| <a href="#">TLE2022CDR.A</a>    | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | 0 to 70       | 2022C               |
| <a href="#">TLE2022CP</a>       | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -             | TLE2022CP           |
| <a href="#">TLE2022CP.A</a>     | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -40 to 85     | TLE2022CP           |
| <a href="#">TLE2022CPE4</a>     | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | See TLE2022CP | TLE2022CP           |
| <a href="#">TLE2022ID</a>       | Obsolete      | Production           | SOIC (D)   8   | -                     | -           | Call TI                              | Call TI                           | -40 to 85     | 2022I               |
| <a href="#">TLE2022IDR</a>      | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85     | 2022I               |
| <a href="#">TLE2022IDR.A</a>    | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85     | 2022I               |
| <a href="#">TLE2022IP</a>       | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -             | TLE2022IP           |
| <a href="#">TLE2022IP.A</a>     | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -40 to 85     | TLE2022IP           |
| <a href="#">TLE2022IPE4</a>     | Active        | Production           | PDIP (P)   8   | 50   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | See TLE2022IP | TLE2022IP           |
| <a href="#">TLE2022MD</a>       | Obsolete      | Production           | SOIC (D)   8   | -                     | -           | Call TI                              | Call TI                           | -55 to 125    | 2022M               |
| <a href="#">TLE2022MDR</a>      | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -55 to 125    | 2022M               |
| <a href="#">TLE2022MDR.A</a>    | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -55 to 125    | 2022M               |
| <a href="#">TLE2022MDRG4</a>    | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -             | 2022M               |
| <a href="#">TLE2022MDRG4.A</a>  | Active        | Production           | SOIC (D)   8   | 2500   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -55 to 125    | 2022M               |
| <a href="#">TLE2024ACDW</a>     | Obsolete      | Production           | SOIC (DW)   16 | -                     | -           | Call TI                              | Call TI                           | -             | TLE2024AC           |
| <a href="#">TLE2024ACDWR</a>    | Active        | Production           | SOIC (DW)   16 | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -             | TLE2024AC           |

| Orderable part number        | Status<br>(1) | Material type<br>(2) | Package   Pins | Package qty   Carrier | RoHS<br>(3) | Lead finish/<br>Ball material<br>(4) | MSL rating/<br>Peak reflow<br>(5) | Op temp (°C)    | Part marking<br>(6) |
|------------------------------|---------------|----------------------|----------------|-----------------------|-------------|--------------------------------------|-----------------------------------|-----------------|---------------------|
| TLE2024ACDWR.A               | Active        | Production           | SOIC (DW)   16 | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85       | TLE2024AC           |
| <a href="#">TLE2024ACN</a>   | Active        | Production           | PDIP (N)   14  | 25   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -               | TLE2024ACN          |
| TLE2024ACN.A                 | Active        | Production           | PDIP (N)   14  | 25   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -40 to 85       | TLE2024ACN          |
| <a href="#">TLE2024AIDW</a>  | Active        | Production           | SOIC (DW)   16 | 40   TUBE             | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85       | TLE2024AI           |
| TLE2024AIDW.A                | Active        | Production           | SOIC (DW)   16 | 40   TUBE             | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -40 to 85       | TLE2024AI           |
| <a href="#">TLE2024AIN</a>   | Active        | Production           | PDIP (N)   14  | 25   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -               | TLE2024AIN          |
| TLE2024AIN.A                 | Active        | Production           | PDIP (N)   14  | 25   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -40 to 85       | TLE2024AIN          |
| <a href="#">TLE2024BMDW</a>  | Obsolete      | Production           | SOIC (DW)   16 | -                     | -           | Call TI                              | Call TI                           | -55 to 125      |                     |
| TLE2024BMDWG4                | Obsolete      | Production           | SOIC (DW)   16 | -                     | -           | Call TI                              | Call TI                           | -55 to 125      | TLE2024BM           |
| <a href="#">TLE2024BMDWR</a> | Active        | Production           | SOIC (DW)   16 | 2000   LARGE T&R      | Yes         | Call TI                              | Call TI                           | -55 to 125      | TLE2024BM           |
| TLE2024BMDWR.A               | Active        | Production           | SOIC (DW)   16 | 2000   LARGE T&R      | Yes         | Call TI                              | Call TI                           | -55 to 125      | TLE2024BM           |
| <a href="#">TLE2024CDW</a>   | Obsolete      | Production           | SOIC (DW)   16 | -                     | -           | Call TI                              | Call TI                           | -               | TLE2024C            |
| <a href="#">TLE2024CDWR</a>  | Active        | Production           | SOIC (DW)   16 | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | -               | TLE2024C            |
| TLE2024CDWR.A                | Active        | Production           | SOIC (DW)   16 | 2000   LARGE T&R      | Yes         | NIPDAU                               | Level-1-260C-UNLIM                | See TLE2024CDWR | TLE2024C            |
| <a href="#">TLE2024CN</a>    | Active        | Production           | PDIP (N)   14  | 25   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -               | TLE2024CN           |
| TLE2024CN.A                  | Active        | Production           | PDIP (N)   14  | 25   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | See TLE2024CN   | TLE2024CN           |
| TLE2024CNE4                  | Active        | Production           | PDIP (N)   14  | 25   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | See TLE2024CN   | TLE2024CN           |
| <a href="#">TLE2024IDW</a>   | Obsolete      | Production           | SOIC (DW)   16 | -                     | -           | Call TI                              | Call TI                           | -               | TLE2024I            |
| <a href="#">TLE2024IN</a>    | Active        | Production           | PDIP (N)   14  | 25   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | -               | TLE2024IN           |
| TLE2024IN.A                  | Active        | Production           | PDIP (N)   14  | 25   TUBE             | Yes         | NIPDAU                               | N/A for Pkg Type                  | See TLE2024IN   | TLE2024IN           |

<sup>(1)</sup> **Status:** For more details on status, see our [product life cycle](#).

<sup>(2)</sup> **Material type:** When designated, preproduction parts are prototypes/experimental devices, and are not yet approved or released for full production. Testing and final process, including without limitation quality assurance, reliability performance testing, and/or process qualification, may not yet be complete, and this item is subject to further changes or possible discontinuation. If available for ordering, purchases will be subject to an additional waiver at checkout, and are intended for early internal evaluation purposes only. These items are sold without warranties of any kind.

<sup>(3)</sup> **RoHS values:** Yes, No, RoHS Exempt. See the [TI RoHS Statement](#) for additional information and value definition.

<sup>(4)</sup> **Lead finish/Ball material:** Parts may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead finish/Ball material values may wrap to two lines if the finish value exceeds the maximum column width.

**(5) MSL rating/Peak reflow:** The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will be used to mount the part to the printed circuit board.

**(6) Part marking:** There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

Multiple part markings will be inside parentheses. Only one part marking contained in parentheses and separated by a "~" will appear on a part. If a line is indented then it is a continuation of the previous line and the two combined represent the entire part marking for that device.

**Important Information and Disclaimer:** The information provided on this page represents TI's knowledge and belief as of the date that it is provided. TI bases its knowledge and belief on information provided by third parties, and makes no representation or warranty as to the accuracy of such information. Efforts are underway to better integrate information from third parties. TI has taken and continues to take reasonable steps to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers consider certain information to be proprietary, and thus CAS numbers and other limited information may not be available for release.

In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

**OTHER QUALIFIED VERSIONS OF TLE2021, TLE2021A, TLE2021M, TLE2022, TLE2022A, TLE2022AM, TLE2022M, TLE2024, TLE2024A, TLE2024B, TLE2024BM :**

- Catalog : [TLE2021](#), [TLE2022A](#), [TLE2022](#), [TLE2024B](#)
- Automotive : [TLE2021-Q1](#), [TLE2021A-Q1](#), [TLE2021-Q1](#), [TLE2022-Q1](#), [TLE2022A-Q1](#), [TLE2022A-Q1](#), [TLE2022-Q1](#), [TLE2024-Q1](#)
- Enhanced Product : [TLE2021-EP](#), [TLE2021A-EP](#), [TLE2021-EP](#), [TLE2022-EP](#), [TLE2022A-EP](#), [TLE2022A-EP](#), [TLE2022-EP](#), [TLE2024-EP](#), [TLE2024A-EP](#)
- Military : [TLE2021M](#), [TLE2021AM](#), [TLE2022M](#), [TLE2022AM](#), [TLE2024M](#), [TLE2024AM](#), [TLE2024BM](#)

**NOTE: Qualified Version Definitions:**

- Catalog - TI's standard catalog product
- Automotive - Q100 devices qualified for high-reliability automotive applications targeting zero defects
- Enhanced Product - Supports Defense, Aerospace and Medical Applications
- Military - QML certified for Military and Defense Applications