## PACKAGING INFORMATION

| Orderable Device | Status (1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan (2) | Lead finish/ Ball material (6) | MSL Peak Temp (3) | Op Temp (°C) | Device Marking (4/5) | Samples |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSP430F133IPAG | ACTIVE | TQFP | PAG | 64 | 160 | RoHS & Green | NIPDAU | Level-4-260C-72 HR | -40 to 85 | M430F133 | Samples |
| MSP430F133IPM | ACTIVE | LQFP | PM | 64 | 160 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F133 | Samples |
| MSP430F133IPMR | ACTIVE | LQFP | PM | 64 | 1000 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F133 | Samples |
| MSP430F133IRTDT | ACTIVE | VQFN | RTD | 64 | 250 | RoHS & Green | SN | Level-3-260C-168 HR | -40 to 85 | M430F133 | Samples |
| MSP430F135IPAG | ACTIVE | TQFP | PAG | 64 | 160 | RoHS & Green | NIPDAU | Level-4-260C-72 HR | -40 to 85 | M430F135 REV # | Samples |
| MSP430F135IPM | ACTIVE | LQFP | PM | 64 | 160 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F135 REV # | Samples |
| MSP430F135IPMR | ACTIVE | LQFP | PM | 64 | 1000 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F135 REV # | Samples |
| MSP430F135IRTDR | ACTIVE | VQFN | RTD | 64 | 2500 | RoHS & Green | SN | Level-3-260C-168 HR | -40 to 85 | M430F135 | Samples |
| MSP430F135IRTDT | ACTIVE | VQFN | RTD | 64 | 250 | RoHS & Green | SN | Level-3-260C-168 HR | -40 to 85 | M430F135 | Samples |
| MSP430F1471IPM | ACTIVE | LQFP | PM | 64 | 160 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F1471 REV # | Samples |
| MSP430F1471IPMR | ACTIVE | LQFP | PM | 64 | 1000 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F1471 REV # | Samples |
| MSP430F1471IRTDT | ACTIVE | VQFN | RTD | 64 | 250 | RoHS & Green | SN | Level-3-260C-168 HR | -40 to 85 | M430F1471 | Samples |
| MSP430F147IPAG | ACTIVE | TQFP | PAG | 64 | 160 | RoHS & Green | NIPDAU | Level-4-260C-72 HR | -40 to 85 | M430F147 REV # | Samples |
| MSP430F147IPM | ACTIVE | LQFP | PM | 64 | 160 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F147 REV # | Samples |
| MSP430F147IPMR | ACTIVE | LQFP | PM | 64 | 1000 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F147 REV # | Samples |
| MSP430F147IPMR-KAM | ACTIVE | LQFP | PM | 64 | 1000 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F147 REV # | Samples |
| MSP430F147IPMRG4 | ACTIVE | LQFP | PM | 64 | 1000 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F147 REV # | Samples |
| MSP430F147IRTDR | ACTIVE | VQFN | RTD | 64 | 2500 | RoHS & Green | SN | Level-3-260C-168 HR | -40 to 85 | M430F147 | Samples |

| Orderable Device | Status (1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan (2) | Lead finish/ Ball material (6) | MSL Peak Temp (3) | Op Temp (°C) | Device Marking (4/5) | Samples |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSP430F147IRTDT | ACTIVE | VQFN | RTD | 64 | 250 | RoHS & Green | SN | Level-3-260C-168 HR | -40 to 85 | M430F147 | Samples |
| MSP430F1481IPM | ACTIVE | LQFP | PM | 64 | 160 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F1481 | Samples |
| MSP430F1481IPMR | ACTIVE | LQFP | PM | 64 | 1000 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F1481 | Samples |
| MSP430F1481IRTDT | ACTIVE | VQFN | RTD | 64 | 250 | RoHS & Green | SN | Level-3-260C-168 HR | -40 to 85 | M430F1481 | Samples |
| MSP430F148IPAG | ACTIVE | TQFP | PAG | 64 | 160 | RoHS & Green | NIPDAU | Level-4-260C-72 HR | -40 to 85 | M430F148 | Samples |
| MSP430F148IPM | ACTIVE | LQFP | PM | 64 | 160 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F148 REV # | Samples |
| MSP430F148IPMR | ACTIVE | LQFP | PM | 64 | 1000 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F148 REV # | Samples |
| MSP430F148IRTDR | ACTIVE | VQFN | RTD | 64 | 2500 | RoHS & Green | SN | Level-3-260C-168 HR | -40 to 85 | M430F148 | Samples |
| MSP430F148IRTDT | ACTIVE | VQFN | RTD | 64 | 250 | RoHS & Green | SN | Level-3-260C-168 HR | -40 to 85 | M430F148 | Samples |
| MSP430F1491IPM | ACTIVE | LQFP | PM | 64 | 160 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F1491 | Samples |
| MSP430F1491IPMR | ACTIVE | LQFP | PM | 64 | 1000 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F1491 | Samples |
| MSP430F1491IRTDR | ACTIVE | VQFN | RTD | 64 | 2500 | RoHS & Green | SN | Level-3-260C-168 HR | -40 to 85 | M430F1491 | Samples |
| MSP430F1491IRTDT | ACTIVE | VQFN | RTD | 64 | 250 | RoHS & Green | SN | Level-3-260C-168 HR | -40 to 85 | M430F1491 | Samples |
| MSP430F149IPAG | ACTIVE | TQFP | PAG | 64 | 160 | RoHS & Green | NIPDAU | Level-4-260C-72 HR | -40 to 85 | M430F149 REV # | Samples |
| MSP430F149IPAGR | ACTIVE | TQFP | PAG | 64 | 1500 | RoHS & Green | NIPDAU | Level-4-260C-72 HR | -40 to 85 | M430F149 REV # | Samples |
| MSP430F149IPM | ACTIVE | LQFP | PM | 64 | 160 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F149 REV # | Samples |
| MSP430F149IPMG4 | ACTIVE | LQFP | PM | 64 | 160 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F149 REV # | Samples |
| MSP430F149IPMR | ACTIVE | LQFP | PM | 64 | 1000 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F149 REV # | Samples |
| MSP430F149IPMRG4 | ACTIVE | LQFP | PM | 64 | 1000 | RoHS & Green | NIPDAU | Level-3-260C-168 HR | -40 to 85 | M430F149 REV # | Samples |

| Orderable Device | Status (1) | Package Type | Package Drawing | Pins | Package Qty | Eco Plan (2) | Lead finish/ Ball material (6) | MSL Peak Temp (3) | Op Temp (°C) | Device Marking (4/5) | Samples |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MSP430F149IRTDR | ACTIVE | VQFN | RTD | 64 | 2500 | RoHS & Green | SN | Level-3-260C-168 HR | -40 to 85 | M430F149 | Samples |
| MSP430F149IRTDT | ACTIVE | VQFN | RTD | 64 | 250 | RoHS & Green | SN | Level-3-260C-168 HR | -40 to 85 | M430F149 | Samples |

(1) The marketing status values are defined as follows:
**ACTIVE:** Product device recommended for new designs.
**LIFEBUY:** TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
**NRND:** Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.
**PREVIEW:** Device has been announced but is not in production. Samples may or may not be available.
**OBSOLETE:** TI has discontinued the production of the device.

(2) **RoHS:** TI defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, "RoHS" products are suitable for use in specified lead-free processes. TI may reference these types of products as "Pb-Free".
**RoHS Exempt:** TI defines "RoHS Exempt" to mean products that contain lead but are compliant with EU RoHS pursuant to a specific EU RoHS exemption.
**Green:** TI defines "Green" to mean the content of Chlorine (Cl) and Bromine (Br) based flame retardants meet JS709B low halogen requirements of <=1000ppm threshold. Antimony trioxide based flame retardants must also meet the <=1000ppm threshold requirement.

(3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

(4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

(6) Lead finish/Ball material - Orderable Devices 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.