

**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
F28P650DH6NMRR	ACTIVE	NFBGA	NMR	169	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650DH6 NMR	<a href="#">Samples</a>
F28P650DH6PTP	ACTIVE	HLQFP	PTP	176	40	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P650DH6 PTP	<a href="#">Samples</a>
F28P650DH6PZPR	ACTIVE	HTQFP	PZP	100	1000	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P650DH6 PZP	<a href="#">Samples</a>
F28P650DH6ZEJR	ACTIVE	NFBGA	ZEJ	256	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650DH6 ZEJ	<a href="#">Samples</a>
F28P650DK6NMRR	ACTIVE	NFBGA	NMR	169	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650DK6 NMR	<a href="#">Samples</a>
F28P650DK6PTP	ACTIVE	HLQFP	PTP	176	40	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P650DK6 PTP	<a href="#">Samples</a>
F28P650DK6PZP	ACTIVE	HTQFP	PZP	100	90	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P650DK6 PZP	<a href="#">Samples</a>
F28P650DK6PZPR	ACTIVE	HTQFP	PZP	100	1000	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P650DK6 PZP	<a href="#">Samples</a>
F28P650DK6ZEJR	ACTIVE	NFBGA	ZEJ	256	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650DK6 ZEJ	<a href="#">Samples</a>
F28P650DK7NMRR	ACTIVE	NFBGA	NMR	169	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650DK7 NMR	<a href="#">Samples</a>
F28P650DK7PTP	ACTIVE	HLQFP	PTP	176	40	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P650DK7 PTP	<a href="#">Samples</a>
F28P650DK7ZEJR	ACTIVE	NFBGA	ZEJ	256	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650DK7 ZEJ	<a href="#">Samples</a>
F28P650DK8NMRR	ACTIVE	NFBGA	NMR	169	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650DK8 NMR	<a href="#">Samples</a>
F28P650DK8PTP	ACTIVE	HLQFP	PTP	176	40	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P650DK8 PTP	<a href="#">Samples</a>
F28P650DK8ZEJR	ACTIVE	NFBGA	ZEJ	256	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650DK8 ZEJ	<a href="#">Samples</a>
F28P650DK9NMR	ACTIVE	NFBGA	NMR	169	260	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650DK9 NMR	<a href="#">Samples</a>
F28P650DK9NMRR	ACTIVE	NFBGA	NMR	169	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650DK9	<a href="#">Samples</a>

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
										NMR	
F28P650DK9PTP	ACTIVE	HLQFP	PTP	176	40	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P650DK9 PTP	<a href="#">Samples</a>
F28P650DK9ZEJ	ACTIVE	NFBGA	ZEJ	256	119	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650DK9 ZEJ	<a href="#">Samples</a>
F28P650DK9ZEJR	ACTIVE	NFBGA	ZEJ	256	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650DK9 ZEJ	<a href="#">Samples</a>
F28P650SH6NMRR	ACTIVE	NFBGA	NMR	169	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650SH6 NMR	<a href="#">Samples</a>
F28P650SH6PTP	ACTIVE	HLQFP	PTP	176	40	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P650SH6 PTP	<a href="#">Samples</a>
F28P650SH6PZPR	ACTIVE	HTQFP	PZP	100	1000	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P650SH6 PZP	<a href="#">Samples</a>
F28P650SH6ZEJR	ACTIVE	NFBGA	ZEJ	256	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650SH6 ZEJ	<a href="#">Samples</a>
F28P650SH7NMRR	ACTIVE	NFBGA	NMR	169	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650SH7 NMR	<a href="#">Samples</a>
F28P650SH7PTP	ACTIVE	HLQFP	PTP	176	40	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P650SH7 PTP	<a href="#">Samples</a>
F28P650SH7ZEJR	ACTIVE	NFBGA	ZEJ	256	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650SH7 ZEJ	<a href="#">Samples</a>
F28P650SK6NMRR	ACTIVE	NFBGA	NMR	169	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650SK6 NMR	<a href="#">Samples</a>
F28P650SK6PTP	ACTIVE	HLQFP	PTP	176	40	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P650SK6 PTP	<a href="#">Samples</a>
F28P650SK6PZPR	ACTIVE	HTQFP	PZP	100	1000	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P650SK6 PZP	<a href="#">Samples</a>
F28P650SK6ZEJR	ACTIVE	NFBGA	ZEJ	256	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650SK6 ZEJ	<a href="#">Samples</a>
F28P650SK7NMRR	ACTIVE	NFBGA	NMR	169	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650SK7 NMR	<a href="#">Samples</a>
F28P650SK7PTP	ACTIVE	HLQFP	PTP	176	40	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P650SK7 PTP	<a href="#">Samples</a>
F28P650SK7ZEJR	ACTIVE	NFBGA	ZEJ	256	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P650SK7 ZEJ	<a href="#">Samples</a>

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
F28P659DH8PZPRQ1	ACTIVE	HTQFP	PZP	100	1000	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P659DH8 PZPQ	<a href="#">Samples</a>
F28P659DK8PTPQ1	ACTIVE	HLQFP	PTP	176	40	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P659DK8 PTPQ	<a href="#">Samples</a>
F28P659DK8PZPQ1	ACTIVE	HTQFP	PZP	100	90	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P659DK8 PZPQ	<a href="#">Samples</a>
F28P659DK8PZPRQ1	ACTIVE	HTQFP	PZP	100	1000	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P659DK8 PZPQ	<a href="#">Samples</a>
F28P659DK8ZEJQ1	ACTIVE	NFBGA	ZEJ	256	119	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P659DK8 ZEJQ	<a href="#">Samples</a>
F28P659DK8ZEJRQ1	ACTIVE	NFBGA	ZEJ	256	1000	RoHS & Green	SNAGCU	Level-3-260C-168 HR	-40 to 125	F28P659DK8 ZEJQ	<a href="#">Samples</a>
F28P659SH6PTPQ1	ACTIVE	HLQFP	PTP	176	40	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P659SH6 PTPQ	<a href="#">Samples</a>
F28P659SH6PZPRQ1	ACTIVE	HTQFP	PZP	100	1000	RoHS & Green	NIPDAU	Level-3-260C-168 HR	-40 to 125	F28P659SH6 PZPQ	<a href="#">Samples</a>
XF28P650DK6PZP	ACTIVE	HTQFP	PZP	100	90	TBD	Call TI	Call TI	-40 to 125		<a href="#">Samples</a>
XF28P650DK9PTP	ACTIVE	HLQFP	PTP	176	40	TBD	Call TI	Call TI	-40 to 125		<a href="#">Samples</a>
XF28P650DK9ZEJ	ACTIVE	NFBGA	ZEJ	256	119	TBD	Call TI	Call TI	-40 to 125		<a href="#">Samples</a>
XF28P659DK8PTPQ1	ACTIVE	HLQFP	PTP	176	40	TBD	Call TI	Call TI	-40 to 125		<a href="#">Samples</a>
XF28P659DK8PZPRQ1	ACTIVE	HTQFP	PZP	100	1000	TBD	Call TI	Call TI	-40 to 125		<a href="#">Samples</a>
XF28P659DK8ZEJRQ1	ACTIVE	NFBGA	ZEJ	256	1000	TBD	Call TI	Call TI	-40 to 125		<a href="#">Samples</a>

(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  $\leq 1000$ ppm threshold. Antimony trioxide based flame retardants must also meet the  $\leq 1000$ ppm 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.

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