

**TAPE AND REEL INFORMATION**

**QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE**


\*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
MSP430F133IPMR	LQFP	PM	64	1000	330.0	24.4	13.0	13.0	2.1	16.0	24.0	Q2
MSP430F133IRTD	VQFN	RTD	64	250	180.0	16.4	9.3	9.3	1.5	12.0	16.0	Q2
MSP430F135IPMR	LQFP	PM	64	1000	330.0	24.4	13.0	13.0	2.1	16.0	24.0	Q2
MSP430F135IRTD	VQFN	RTD	64	2500	330.0	16.4	9.3	9.3	1.5	12.0	16.0	Q2
MSP430F135IRTD	VQFN	RTD	64	250	180.0	16.4	9.3	9.3	1.5	12.0	16.0	Q2
MSP430F1471IPMR	LQFP	PM	64	1000	330.0	24.4	13.0	13.0	2.1	16.0	24.0	Q2
MSP430F1471IRTD	VQFN	RTD	64	250	180.0	16.4	9.3	9.3	1.5	12.0	16.0	Q2
MSP430F147IPMR	LQFP	PM	64	1000	330.0	24.4	13.0	13.0	2.1	16.0	24.0	Q2
MSP430F147IRTD	VQFN	RTD	64	2500	330.0	16.4	9.3	9.3	1.5	12.0	16.0	Q2
MSP430F147IRTD	VQFN	RTD	64	250	180.0	16.4	9.3	9.3	1.5	12.0	16.0	Q2
MSP430F1481IPMR	LQFP	PM	64	1000	330.0	24.4	13.0	13.0	2.1	16.0	24.0	Q2
MSP430F1481IRTD	VQFN	RTD	64	250	180.0	16.4	9.3	9.3	1.5	12.0	16.0	Q2
MSP430F148IPMR	LQFP	PM	64	1000	330.0	24.4	13.0	13.0	2.1	16.0	24.0	Q2
MSP430F148IRTD	VQFN	RTD	64	2500	330.0	16.4	9.3	9.3	1.5	12.0	16.0	Q2
MSP430F148IRTD	VQFN	RTD	64	250	180.0	16.4	9.3	9.3	1.5	12.0	16.0	Q2
MSP430F1491IPMR	LQFP	PM	64	1000	330.0	24.4	13.0	13.0	2.1	16.0	24.0	Q2

Device	Package Type	Package Drawing	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
MSP430F1491IRTDR	VQFN	RTD	64	2500	330.0	16.4	9.3	9.3	1.5	12.0	16.0	Q2
MSP430F1491IRTD	VQFN	RTD	64	250	180.0	16.4	9.3	9.3	1.5	12.0	16.0	Q2
MSP430F149IPAGR	TQFP	PAG	64	1500	330.0	24.4	13.0	13.0	1.5	16.0	24.0	Q2
MSP430F149IPMR	LQFP	PM	64	1000	330.0	24.4	13.0	13.0	2.1	16.0	24.0	Q2
MSP430F149IRTDR	VQFN	RTD	64	2500	330.0	16.4	9.3	9.3	1.5	12.0	16.0	Q2
MSP430F149IRTD	VQFN	RTD	64	250	180.0	16.4	9.3	9.3	1.5	12.0	16.0	Q2

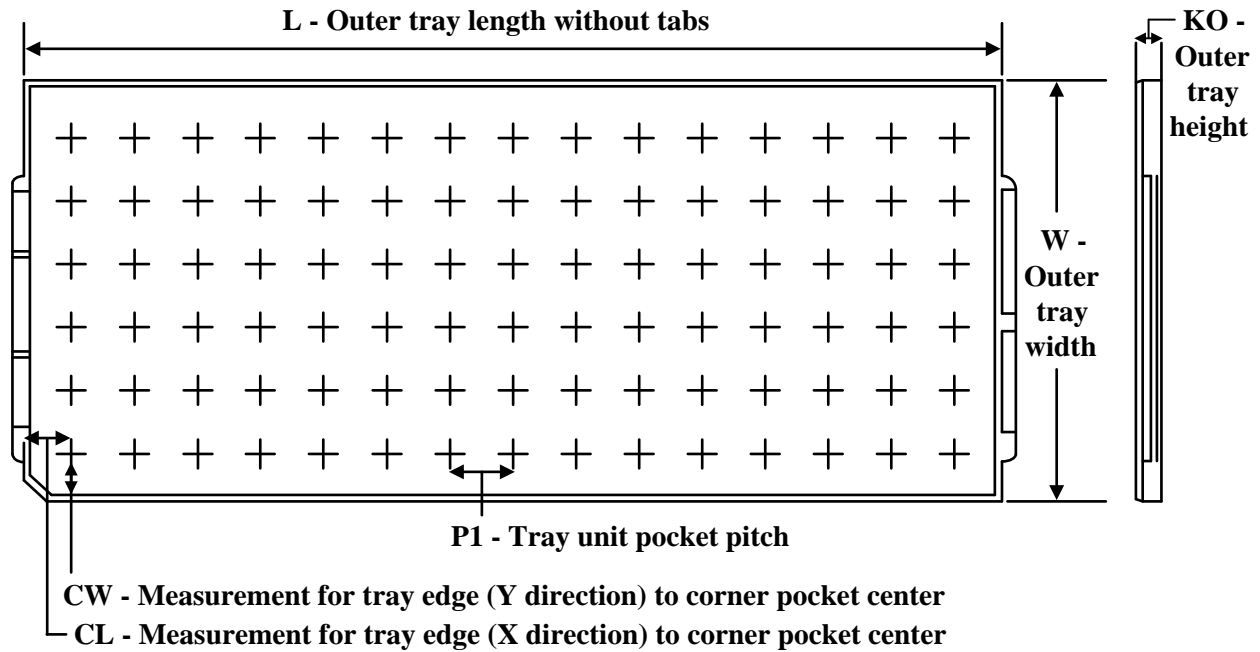
**TAPE AND REEL BOX DIMENSIONS**


\*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
MSP430F133IPMR	LQFP	PM	64	1000	336.6	336.6	41.3
MSP430F133IRTD	VQFN	RTD	64	250	210.0	185.0	35.0
MSP430F135IPMR	LQFP	PM	64	1000	336.6	336.6	41.3
MSP430F135IRTD	VQFN	RTD	64	2500	356.0	356.0	35.0
MSP430F135IRTD	VQFN	RTD	64	250	210.0	185.0	35.0
MSP430F1471IPMR	LQFP	PM	64	1000	336.6	336.6	41.3
MSP430F1471IRTD	VQFN	RTD	64	250	210.0	185.0	35.0
MSP430F147IPMR	LQFP	PM	64	1000	336.6	336.6	41.3
MSP430F147IRTD	VQFN	RTD	64	2500	356.0	356.0	35.0
MSP430F147IRTD	VQFN	RTD	64	250	210.0	185.0	35.0
MSP430F1481IPMR	LQFP	PM	64	1000	336.6	336.6	41.3
MSP430F1481IRTD	VQFN	RTD	64	250	210.0	185.0	35.0
MSP430F148IPMR	LQFP	PM	64	1000	336.6	336.6	41.3
MSP430F148IRTD	VQFN	RTD	64	2500	356.0	356.0	35.0
MSP430F148IRTD	VQFN	RTD	64	250	210.0	185.0	35.0
MSP430F1491IPMR	LQFP	PM	64	1000	336.6	336.6	41.3
MSP430F1491IRTD	VQFN	RTD	64	2500	356.0	356.0	35.0
MSP430F1491IRTD	VQFN	RTD	64	250	210.0	185.0	35.0

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Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
MSP430F149IPAGR	TQFP	PAG	64	1500	350.0	350.0	43.0
MSP430F149IPMR	LQFP	PM	64	1000	336.6	336.6	41.3
MSP430F149IRTDR	VQFN	RTD	64	2500	356.0	356.0	35.0
MSP430F149IRTD	VQFN	RTD	64	250	210.0	185.0	35.0

**TRAY**


Chamfer on Tray corner indicates Pin 1 orientation of packed units.

\*All dimensions are nominal

Device	Package Name	Package Type	Pins	SPQ	Unit array matrix	Max temperature (°C)	L (mm)	W (mm)	K0 (µm)	P1 (mm)	CL (mm)	CW (mm)
MSP430F133IPAG	PAG	TQFP	64	160	8 x 20	150	315	135.9	7620	15.2	13.1	13
MSP430F133IPM	PM	LQFP	64	160	8 X 20	150	315	135.9	7620	15.2	13.1	13
MSP430F133IPM	PM	LQFP	64	160	8 x 20	150	315	135.9	7620	15.2	13.1	13
MSP430F135IPAG	PAG	TQFP	64	160	8 x 20	150	315	135.9	7620	15.2	13.1	13
MSP430F135IPM	PM	LQFP	64	160	8 X 20	150	315	135.9	7620	15.2	13.1	13
MSP430F135IPM	PM	LQFP	64	160	8 x 20	150	315	135.9	7620	15.2	13.1	13
MSP430F1471IPM	PM	LQFP	64	160	8 x 20	150	315	135.9	7620	15.2	13.1	13
MSP430F1471IPM	PM	LQFP	64	160	8 X 20	150	315	135.9	7620	15.2	13.1	13
MSP430F147IPAG	PAG	TQFP	64	160	8 x 20	150	315	135.9	7620	15.2	13.1	13
MSP430F147IPM	PM	LQFP	64	160	8 x 20	150	315	135.9	7620	15.2	13.1	13
MSP430F147IPM	PM	LQFP	64	160	8 X 20	150	315	135.9	7620	15.2	13.1	13
MSP430F1481IPM	PM	LQFP	64	160	8 x 20	150	315	135.9	7620	15.2	13.1	13
MSP430F1481IPM	PM	LQFP	64	160	8 X 20	150	315	135.9	7620	15.2	13.1	13
MSP430F148IPAG	PAG	TQFP	64	160	8 x 20	150	315	135.9	7620	15.2	13.1	13
MSP430F148IPM	PM	LQFP	64	160	8 x 20	150	315	135.9	7620	15.2	13.1	13
MSP430F148IPM	PM	LQFP	64	160	8 X 20	150	315	135.9	7620	15.2	13.1	13
MSP430F1491IPM	PM	LQFP	64	160	8 X 20	150	315	135.9	7620	15.2	13.1	13

Device	Package Name	Package Type	Pins	SPQ	Unit array matrix	Max temperature (°C)	L (mm)	W (mm)	K0 (µm)	P1 (mm)	CL (mm)	CW (mm)
MSP430F1491IPM	PM	LQFP	64	160	8 x 20	150	315	135.9	7620	15.2	13.1	13
MSP430F149IPAG	PAG	TQFP	64	160	8 x 20	150	315	135.9	7620	15.2	13.1	13
MSP430F149IPM	PM	LQFP	64	160	8 x 20	150	315	135.9	7620	15.2	13.1	13
MSP430F149IPM	PM	LQFP	64	160	8 X 20	150	315	135.9	7620	15.2	13.1	13
MSP430F149IPMG4	PM	LQFP	64	160	8 x 20	150	315	135.9	7620	15.2	13.1	13
MSP430F149IPMG4	PM	LQFP	64	160	8 X 20	150	315	135.9	7620	15.2	13.1	13