

Surface Mount (SMD) Packaging

Reel and Carrier Tape Specifications

MINIMUM PACKING QUANTITY							
PACKAGE TYPE		Bulk Type Quantity	7" Tape and Reel		13" Tape and Reel		
			Quantity	Part Number Suffix	Quantity	Part Number Suffix	
DBF		NA	NA	NA	3k	-13	
DFN / QFN Series	(Notes 4, 12)	NA	3k	-7, -7R, TA, -T	10k	-13, -13R	
DFN0603		N/A	10k	-7, -7B	NA	NA	
DFN0806		NA	10k	-7B	NA	NA	
DFN0808, DFN0910		NA	5k	-7	NA	NA	
DFN1006		NA	3k	-7, -7R	10k	-13	
			10k	-7B	NA	NA	
DFN1010		NA	5k	-7, -7R	NA	NA	
			10k	-7A, -7B	NA	NA	
DFN1409, DFN1410, DFN1412		NA	5k	-7	NA	NA	
DFN1410-4	(Note 6)	NA	4k	-7	NA	NA	
DFN1610-2 Type B		NA	10k	-7, -7-84	NA	NA	
DFN2020-8 Type E	(Note 6)	NA	3k	-7, -7B	NA	NA	
DFN2020-3/SWP Type A	(Note 6)	NA	0.5k	-7A	NA	NA	
DFN/QFN3030 Series		(Note 5)	3k	-7, -7A	3k	TC, -13, -13R, -13A	
					5k	-13	
DFN3030-8 Type	(Note 6)	NA	2k	-7A	3k	-13A	
DFN3030-8 Type K, R	(Note 6)	NA	1.5k	-7A	3k	-13	
DFN3333-8		NA	2k	-7	3k	-13	
DFN3035-8	(Note 6)	NA	NA	NA	5k	-13	
DFN3810-9 Type B	(Note 6)	NA	5k	-7	NA	NA	
DFN4030-12, DFN3030-12 Type A1		NA	NA	NA	3k	-13	
DFN4030-12 Types B, C, D		NA	NA	NA	4k	-13	
DFN5020		NA	3k	-7	NA	NA	
DFN5060		NA	NA	NA	3k	-13	
DF-S		50	NA	NA	1.5k	-T	
D-FLAT		NA	NA	NA	10k	-13	
D ² PAK		NA	NA	NA	800	-T	
DO-218		NA	NA	NA	750	-13	
DO-219AA		NA	3k	-7, -7D	10k	-13, -13D	
DSN/ESN/TSN/WLB		(Notes 11, 12)	3k	-7	NA	NA	
			10k	-7B			
FLGA2520		NA	2.5k	-7	NA	NA	
HBS		NA	NA	NA	2.5k	-13	
HDS		NA	NA	NA	3k	-13	
HMSOP-10		NA	NA	NA	3k	-13	
HSOP-28		NA	NA	NA	1k	-13	
HTSSOP-14		NA	NA	NA	4k	-13	
LGA1616-8		NA	3k	-7	NA	NA	
L-QFP7070-48EP		NA	NA	NA	2k	-13	
LSOP-4		NA	NA	NA	3k	-TR	
MBS		NA	NA	NA	3k	-13	
MELF		NA	NA	NA	5k	-13	
MiniDIP		NA	NA	NA	3k	-T	
MiniMELF		NA	2.5k	-7	10k	-13	
MSB		NA	NA	NA	3k	-13	
MSBL		NA	NA	NA	2.5k	-13	
MSOP [-8, -8EP, -10]		(Note 5)	100	1k	TA	2.5k	-13
						3k	-13
						4k	TC

MINIMUM PACKING QUANTITY					
PACKAGE TYPE	Bulk Type Quantity	7" Tape and Reel		13" Tape and Reel	
		Quantity	Part Number Suffix	Quantity	Part Number Suffix
PowerDI®5	(Note 8)	NA	1.5k	-7, -7D	5k
PowerDI®5SP	NA	NA	NA	3.5k	-13
PowerDI®123, PowerMITE®3	NA	3k	-7	10k	-13
PowerDI®5SP-B	NA	NA	NA	3k	-13, -13R
PowerDI®1012	NA	NA	NA	1.5k	-13
PowerDI®3030	NA	3k	-7	NA	NA
PowerDI®3333	NA	2k	-7	3k	-13
PowerDI®3333-8 (Type D)	(Note 6)	NA	1k	-7, -7A	3k
PowerDI®5060	NA	NA	NA	2.5k	-13
PowerDI®8080-5	NA	NA	NA	2k	-13
QFN1616-12 (Type A1)	(Note 6)	NA	3.5k	-7R	NA
QFN3040	NA	NA	NA	3k	-13
QFN3535	NA	NA	NA	5k	-13
QFN4040	(Notes 5,6)	NA	1.5k	-7	4k
					5k
					3k
QFN4040-17	NA	NA	NA	2.5k	-13
QFN4040-20 (Type A1)	(Note 6)	NA	NA	3k	-13
V-QFN4040-24	(Note 6)	NA	NA	3.5k	-13R
QFN5050-32	(Note 6)	NA	NA	2.5k	-13R
QFN5050-40	(Note 6)	NA	NA	3.5k	-13R
QFN6060-48, QFN5050-80	(Note 6)	NA	NA	3k	-13R
QSOP [-16, -20]	NA	NA	NA	2.5k	TC
SC59	NA	3k	-7	10k	-13
SL-4	NA	NA	NA	2k	-TR
SLM-4	NA	NA	NA	2k	-TR
SM-8	NA	1k	TA	4k	TC
SMA	NA	NA	NA	5k	-13
SMAF, SMA-FS	NA	NA	NA	10k	-13
SMB, SMC	NA	NA	NA	3k	-13
SOD123, SOD123F, SOD323	NA	3k	-7, TA	10k	-13, TC
SOD523	(Note 7)	NA	3k	-7, TA	10k
		NA	6k	-76K	NA
SOD923	NA	10k	-7	NA	NA
SO [-7, -8, -8EP]	(Note 5)	100	0.5k	TA	2.5k
					4k
SO-14	(Note 5)	100	NA	NA	2.5k
					4k
SO-16	(Note 5)	50	NA	NA	2.5k
					4k
SO [-20, -24, -28]	NA	NA	NA	1k	-13
SO-28 (Type TH)	NA	NA	NA	1.5k	-13
SOP-4	NA	NA	NA	3k	-TR
SOPA-4	NA	NA	NA	5k	-13
SOT23		NA	3k	-7, TA	10k
		NA	0.5k	TD	
SOT323, SOT353	NA	3k	-7, TA	10k	-13, TC
SOT523, SOT666	NA	3k	-7, TA	10k	-13
SOT363	NA	3k	-7, -7R	10k	-13, -13R
SOT25, SOT26	NA	3k	-7, TA	10k	-13, TC
SOT23F	NA	3k	TA, -7	10k	TC
SOT28	NA	3k	-7	NA	NA

MINIMUM PACKING QUANTITY

PACKAGE TYPE		Bulk Type Quantity	7" Tape and Reel		13" Tape and Reel	
			Quantity	Part Number Suffix	Quantity	Part Number Suffix
SOT23-4 (Type A)		NA	3k	-7	NA	NA
SOT23-4 (Type B)		NA	NA	NA	6k	-13
SOT23-4 (Type C)		NA	4k	-7	NA	NA
SOT89				-7, TA, -7R	2.5k	-13
					4k	TC, -13R
SOT89-5		NA	1k	-7	2.5k	-13
SOT143		NA	3k	-7	10k	-13
SOT223		75	1k	TA	2.5k	-13
					4k	TC
SOT553		(Note 9)	NA	3k	-7	NA
			NA	4k	-7	NA
SOT563		(Note 9)	NA	3k	-7, -7A, -7R	10k
			NA	4k	-7	NA
SOT963		NA	10k	-7, -7A, -7B	NA	NA
SOT953		NA	10k	-7,	NA	NA
SSOP-4		NA	NA	NA	3k	-TR
SSOP-8		NA	3k	-7	NA	NA
SSOP [-10, -16]		NA	NA	NA	2k	-13
SSOP-20		NA	NA	NA	4k	-13
SSOP-24		NA	NA	NA	2.5k	-13
T-MiniDIP		NA	NA	NA	5k	-13
TO252-3, TO252-4, TO252-5		80	NA	NA	2.5k	-13, TC
TO263AB, TO263-5		50	NA	NA	800	-13
TSSOP [-8, -14, -16, -16EP]		(Note 5)	96	NA	2.5k	-13
					4k	-13
TSSOP [-20, -24, -28]		NA	NA	NA	4k	-13
TSSOP-24EP		NA	NA	NA	2.5k	-13
TSOT25, TSOT26		NA	3k	-7, TA	10k	-13
			0.5k	TD	NA	NA
TT, TTL		NA	NA	NA	1.5k	-13
DSN/ESN/WLB Series		(Notes 10 & 11)	NA	3k	-7	NA
			NA	10k	-7B	NA
VSSOP-8		NA	3k	-7	NA	NA
WLB1006, WLB1406, WLB1608		NA	5k	-7	NA	NA
X2-DSN1010-3		(Note 6)	NA	5k	-7, 7A	NA
X4-DSN1006-3		(Note 6)	NA	10k	-7, -7A	NA
X4-DSN1006-3		(Note 6)	NA	5k	-7R	NA

- Notes: 1. Package quantities given are for minimum packing quantity only, not minimum order quantity. For minimum order quantity, please contact Sales Department.
2. No mixed date codes or partial quantity (less than minimum packing quantity) is allowed.
3. In no case shall there be two or more consecutive components missing from any reel for any reason.
4. Applies to all DFN/QFN body sizes unless specified otherwise in the table. 13" reel may not be available in all packages. Refer to product datasheet for details.
5. For 13" reel packing quantity, refer to product datasheet for specific details.
6. Customer specific requirement.
7. SOD523 available in 6k quantity on 7-inch reel, part number suffix "-76K".
8. POWERDI[®]5 available in both 16mm and 12mm tape widths (12mm part number suffix = -7D & -13D).
9. SOT553 / SOT563 quantity of 4k on 7-inch reel applies to Logic products.
10. Applies to all DSN/ESN/TSN/WLB body sizes unless otherwise specified in the table.
11. DFN/QFN/WLB/DSN/ESN/TSN/WLB quantity applies regardless of package seated height (i.e. prefix V, W, U, X1, X2, etc.) unless specified otherwise.
12. -7x and -13x suffixes may be followed by other characters, e.g. -7-F, -13-F, etc.

Device Tape Orientation For Part Marking, Refer to Datasheet

8mm			8mm		
Package	Suffix	Tape Orientation	Package	Suffix	Tape Orientation
X3-DFN0603-2 X2-DSN0603-2	-7	Bar Denotes Cathode Side 	X2-DFN1010-4 X2-DFN1210-6 X2-DFN1210-8	-7	
X3-DFN0603-2 X1-DFN1006-2 X2-DFN1006-2 U-DFN1006-2 Type B X3-DSN1006-3 Type B	-7B			-7R	
X2-DFN0604-3	-7B	Bar Denotes Gate & Source Side 	X2-DFN1010-4	-7	
X2-DFN0806-6	-7A		X2-DFN1010-6 X1-DFN1010-6 Type B	-7B	
X2-DFN0606-3 X2-DFN0806-3 X2-DFN0806-6 X1-DFN1006-3 X2-DFN1006-3 U-DFN1006-3/SWP Type UX	-7B	Bar Denotes Base & Emitter Side for BJT; Gate & Source Side for MOS; Cathode Side for Diodes 	X2-DFN1010-4	-7	
X2-DFN0604-3	-7R		X2-DFN1010-6 Type UXC	-7	
X2-DFN0808-4 X2-DFN0910-6	-7		X2-DFN1010-4	-7A	
X1-DFN1006-3 X2-DFN1006-3	-7R	Bar Denotes Gate & Source Side for MOS 	X2-DFN1010-6 Type UXC	-7R	
X1-DFN1006-2 X2-DFN1006-2	-7 -13	Bar Denotes Cathode Side 	X2-DFN1010-6	-7R	
X1-DFN1006-3 X2-DFN1006-3	-7 -13	Bar Denotes Base & Emitter Side for BJT; Gate & Source Side for MOS; Cathode Side for Diodes 	X1-DFN1212-3 X1-DFN1212-3 Type B U-DFN1212-3 Type C U-DFN1212-4	-7 -13	
U-DFN1006-3/SWP Type UX	-7		X2-DFN1212-6	-7	

Note: a) Device tape orientation applies to all products covered by the package unless otherwise specified.
b) Tape and package drawings are not drawn to scale and are shown for device tape orientation only.

Direction of feed

Device Tape Orientation For Part Marking, Refer to Datasheet

8mm			8mm		
Package	Suffix	Tape Orientation	Package	Suffix	Tape Orientation
X2-DFN1310-6 X2-DFN1310-6 Type B	-7		U-DFN1610-2 Type B	-7-84	
W-DFN1114-3 X1-DFN1216-4 X2-DFN1410-4	-7		U-DFN1610-6 U-DFN1610-8 Type AX	-7	
X2-DFN1409-6 X2-DFN1410-8 X2-DFN1410-6 X2-DFN1612-8 X1-DFN1612-8 Type B X2-DFN2010-8	-7		X1-DFN1616-6 Type E U-FLGA1616-8	-7	
X1-DFN1411-3	-7		U-DFN1820-6 Type A	-7	
U-DFN1412-3/SWP Type A	-7		X2-DFN2015-3 X2-DFN2015-6 W-FLGA2520-17	-7	
V-DFN1515-6/SWP Type UX	-7		U-DFN2015-8 Type AX X2-DFN2015-8	-7	
U-DFN1608-2 U-DFN1608-2 Type C	-7		U-DFN2018-6	-7	
U-DFN1610-2 Type B	-7		U-DFN2020-3 Type B	-7 TA	
			W-DFN2020-3/SWP Type A	-7	

Note: a) Device tape orientation applies to all products covered by the package unless otherwise specified.
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Direction of feed

Device Tape Orientation For Part Marking, Refer to Datasheet

8mm			8mm		
Package	Suffix	Tape Orientation	Package	Suffix	Tape Orientation
U-DFN2020-3 Type C U-DFN2020-6 Type B, C U-DFN2020-6 Type S U-DFN2020-8 Type A V-DFN2020-8 Type F, N W-DFN2020-6 Type A1 X2-DFN2020-6 U-DFN2020-6/SWP U-DFN2020-6/SWP Types A, B, F W-DFN2020-6/SWP Type UXD V-DFN2020-8/SWP Type UXC	-7		U-DFN2626-10	-7	
U-DFN2020-6 Type E U-DFN2020-6 Type F U-DFN2523-6	-7 -13		U-DFN2030-6 Type C	-7	
U-DFN2020-8 Type E	-7B		X1-DFN2030-8	-7	
U-DFN2020-6 Type B U-DFN2020-6 Type C U-DFN2020-6/SWP U-DFN2020-6/SWP Type UXC	-7R		U-DFN2030-6 Type B	-7 -13	
V-DFN2020-8 Type C	-7		U-DFN2030-8	-7	
U-DFN2020-6/SWP Type A	-13R		X2-DFN3020-6 V-DFN3020-8 Type K V-DFN3030-8	-7	
W-DFN2020-6 Type A1	-7B		W-DFN3020-8 Type B	TA	
U-DFN2020-6 Type F	-7R		W-DFN3020-12	-7	
U-DFN2020-8 Type E	-7		W-DFN3020-8 Type B V-DFN3020-14 U-DFN3020-8 Type M V-DFN3020-10	-7 -13	
U-DFN2116-8	-7		W-DFN3020-8 Type B V-DFN3020-14	-7	
U-DFN2510-10 X1-DFN3313-8	-7		U-DFN3030-4 U-DFN3030-8 Type E U-DFN3030-10 U-DFN3030-12 U-DFN3030-14	-7	
			V-DFN3030-6	TC	
			V-DFN3030-8 Type H V-DFN3030-8 Type J V-DFN3030-8 Type K V-DFN3030-8 Type M V-DFN3030-12 Type B POWERDI@3030-8	-7 -13	

Note: a) Device tape orientation applies to all products covered by the package unless otherwise specified.
b) Tape and package drawings are not drawn to scale and are shown for device tape orientation purpose only.

Direction of feed

**Device Tape Orientation
For Part Marking, Refer to Datasheet**

8mm			8mm		
Package	Suffix	Tape Orientation	Package	Suffix	Tape Orientation
U-DFN3030-8 U-DFN3030-8 Type B U-DFN3030-8 Type D V-DFN3030-8 Type R	-7		W-QFN1520-8/SWP Type UX	-7	
U-DFN3030-10	-13R				
U-DFN3030-10 <i>* Applies to Analogue Gate Drivers</i>	-7				
V-DFN3030-8	-7		X2-QFN1616-12 Type A1	-7R	
U-DFN3810-9 Type B	-7		U-QFN2020-10 U-QFN2020-12 Type B	-7	
			U-QFN2020-12 Type UX	-T	
			W-QFN2020-12 Type US	--	
X1-QFN1012-8 Type AX	-7		U-QFN2020-9 /SWP	-7	
U-QFN1212-9/SWP	-7		V-QFN2030-12 Type A W-QFN2030-12	-7	
U-QFN1515-12	-7		W-QFN3020-12	-7	
U-FLGA1515-9	--				
U-QFN1520-10	-7R -13R		W-QFN3020-12	-7R	
U-QFN1418-10 W-QFN1520-10 U-QFN1520-10 Type A U-QFN1720-12 Type CJ	-7		U-QFN3030-16 U-QFN3030-20 V-QFN3030-8	-7	
			U-QFN3030-16 Type B	-13	

Note: a) Device tape orientation applies to all products covered by the package unless otherwise specified.
b) Tape and package drawings are not drawn to scale and are shown for device tape orientation only.

Direction of feed

**Device Tape Orientation
For Part Marking, Refer to Datasheet**

8mm			8mm		
Package	Suffix	Tape Orientation	Package	Suffix	Tape Orientation
X4-DSN0402-2	-7		X1-DSN1010-4 Type C X2-DSN1010-3 X3-DSN1010-3 U-WLB1010-4 U-WLB1010-4 Type B	-7	
X3-DSN0603-2 X3-WLB0603-2	-7		X3-DSN1406-2 X3-TSN1406-2 X3-WLB1406-2	-7	
X3-DSN0808-4 X2-WLB0808-4 X2-WLB0808-4 Type B	-7		X2-DSN1515-9 U-WLB1515-9	-7	
X3-DSN1006-2 X3-DSN1006-3 X3-WLB1006-2	-7		X2-DSN1515-9 Type B	-7	
X4-DSN1006-3	-7		X3-DSN1608-2 X3-TSN1608-2 X3-WLB1608-2	-7B	
X4-DSN1006-3	-7A		X3-TSN1616-2	-7	
X2-DSN1006-3	-7		X3-DSN2718-6	-7	
X4-DSN1006-3	-7R				
X2-DSN1010-3	-7A		X2-WLB0606-4 X1-WLB0808-4	-7	

Note: a) Device tape orientation applies to all products covered by the package unless otherwise specified.
b) Tape and package drawings are not drawn to scale and are shown for device tape orientation only.

Direction of feed

**Device Tape Orientation
For Part Marking, Refer to Datasheet**

8mm			8mm		
Package	Suffix	Tape Orientation	Package	Suffix	Tape Orientation
U-WLB0808-4 Type B	-7		U-WLB1713-10 U-WL1713-12	-7	
U-WLB0909-4 X1-WLB0909-4	-7		X1-WLB1818-4 U-WLB1818-4	-7	
U-WLB0707-4 X1-WLB0707-4 Type A1 U-WLB0808-4 W-WLB0808-4 X1-WLB1012-6	-7		X1-WLB1909-8	-7	
U-WLB1510-6	-7		W-WLB2013-12	-7	
U-WLB1510-6	-7R		W-WLB2118-20		
X3-WLB1608-2 X2-WLB2010-2	-7		U-WLB2626-36	-7	
X2-WLB1616-4	-7		U-WLB2515-15 Type A1	-7	

Note: a) Device tape orientation applies to all products covered by the package unless otherwise specified.
b) Tape and package drawings are not drawn to scale and are shown for device tape orientation only.

Direction of feed

Device Tape Orientation For Part Marking, Refer to Datasheet

<u>8mm</u>			<u>8mm</u>		
Package	Suffix	Tape Orientation	Package	Suffix	Tape Orientation
DO-219AA	-7D -13D		SOT23-4 Type C	-7	
SOD123 SOD123F SOD923	-7 -13		SOT25 SOT353 SOT553	-7 -13	
SOD323F POWERD [®] 123 POWERD [®] 123 Type B POWERD [®] 323	-7 -13		SOT25 SOT353 <i>Note: Analogue / Logic Only</i>	-7 TA	
SOD323	-7 -13 TA		SOT553 <i>Note: Logic Only</i>	-7	
	-7		TSOT25 <i>Note: Analogue Only</i>	-7 TA	
SOD523	-76K		SOT26 SOT363 TSOT26 (Asymmetrical)	-7 -13	
	-7 TA -13		SOT26	TAR	
SOT143	-7 -13		SOT363	-7R -13R	
SC59 SOT23 SOT523 SOT23F	-7 -13		SOT26 SOT363 TSOT26 (Symmetrical)	-7 -13	
SOT23 SOT23F	TA TD TC				
SOT23-4 Type A	-7		SOT363 Standard	-7	
SOT23-4 Type B	-13		SOT26 Type A1 TSOT26 Type A1	-7	

Note: a) Device tape orientation applies to all products covered by the package unless otherwise specified.
b) Tape and package drawings are not drawn to scale and are shown for device tape orientation only.

Direction of feed

**Device Tape Orientation
For Part Marking, Refer to Datasheet**

8mm			8mm		
Package	Suffix	Tape Orientation	Package	Suffix	Tape Orientation
SOT28	-7		SOT953	-7	
SOT323	-7 -13 TA TC		SOT963 (Symmetrical)	-7	
SOT563 (Symmetrical)	-7 -13		SOT963 (Asymmetrical)	-7A -7B	
	-7A -13A			-7	
	-7B			-7B	
SOT563 (Asymmetrical)	-7 -13		VSSOP-8	-7	
	-7R		--	--	--

Note: a) Device tape orientation applies to all products covered by the package unless otherwise specified.
b) Tape and package drawings are not drawn to scale and are shown for device tape orientation only.

Direction of feed

**Device Tape Orientation
For Part Marking, Refer to Datasheet**

12mm			12mm		
Package	Suffix	Tape Orientation	Package	Suffix	Tape Orientation
V-DFN3030-8 Type R	-7A -13		V-DFN3333-8 Type B	-7 -13	
V-DFN3030-8/SWP Type UX U-DFN3030-8 Type E	-13A				
V-DFN3030-8/SWP Type A V-DFN3020-13/SWP Type A1	-7		U-DFN4030-12 U-DFN4030-14 U-DFN4030-12 Type B U-DFN4030-12 Type C U-DFN4030-12 Type D	-13	
U-DFN3030-8 Type E V-DFN3030-8 Type K V-DFN3030-12 Type B	-7A				
U-DFN3030-8 Type E U-DFN3030-10	-13				
U-DFN3030-10	-13R		U-DFN4040-8	-13	
W-DFN3030-12/SWP Type UXD	-13		W-DFN5020-6 V-DFN2050-4	-13	
W-DFN3030-8 Type UXF	-13		V-DFN5045-12 V-DFN5045-12 Type B V-DFN5045-12 Type C	-13	
W-DFN3030-14 Type A1	-13		W-DFN5060-4	-13	
V-DFN3035-8	-13		X4-DSN3415-10	-7	

Note: a) Device tape orientation applies to all products covered by the package unless otherwise specified.
b) Tape and package drawings are not drawn to scale and are shown for device tape orientation only.

Direction of feed

Device Tape Orientation For Part Marking, Refer to Datasheet

<u>12mm</u>			<u>12mm</u>		
Package	Suffix	Tape Orientation	Package	Suffix	Tape Orientation
X4-DSN3415-10	-7-01		PowerDI®3333-8 PowerDI®3333-8 Type UX PowerDI®3333-8/ SWP Type UX	-7 -13	
DO-219AA	-7 -13		PowerDI®3333-8	-7A -13A	
HDS	-13		PowerDI®5	-7D -13D	
MBS	-13		PowerDI®5060-8 PowerDI®5060-8/SWP (All Types)	-13	
MELF	-7 -13		V-QFN3025-20 Type A V-QFN3535-14 Type CJ	-13	
MiniDIP T-MiniDIP	-T -13		W-QFN3040-20 Type A1	-13	
MSB	-13		U-QFN4040-16 Type B U-QFN4040-20 Type B	TC	
			U-QFN4040-16 U-QFN4040-16 Type C V-QFN4040-17 W-QFN4040-16	-13	
MSOP-8 MSOP-8-EP MSOP-10	-13 TA TC		V-QFN4040-24	-13R	
		W-QFN4040-20 Type A1 W-QFN4040-24 Type A1	-13		

Note: a) Device tape orientation applies to all products covered by the package unless otherwise specified.
b) Tape and package drawings are not drawn to scale and are shown for device tape orientation only.

Direction of feed

Device Tape Orientation For Part Marking, Refer to Datasheet

<u>12mm</u>			<u>12mm</u>		
Package	Suffix	Tape Orientation	Package	Suffix	Tape Orientation
V-QFN4525-20	-13		SO-7 Type B	-13	
W-QFN5050-32 W-QFN5050-40	-13R		SO-8 SO-8EP	-13 TA TC	
QSOP-16	TC		SOPA-4 SOPA-4 Type B	-13	
SM-8	TA		SOT223	-13 TA TC	
SMA SMAF SMA-FS D-FLAT	-13		SOT89-3	-7 -13	
SMB	-13		SOT89-3	-7R -13R	
			SOT89 Standard	TRG1	
SO-7	-13		SOT89-3	TA TC	

Note: a) Device tape orientation applies to all products covered by the package unless otherwise specified.
b) Tape and package drawings are not drawn to scale and are shown for device tape orientation only.

Direction of feed

**Device Tape Orientation
For Part Marking, Refer to Datasheet**

<u>12mm</u>			<u>16mm</u>		
Package	Suffix	Tape Orientation	Package	Suffix	Tape Orientation
SOT89-5	-13		DBF	-13	
SOT89-5 (Reverse)	-13		DF-S	-T	
SSOP-4	-TR		LSOP-4	-TR	
SSOP-8	-7		L-QFP7070-48EP	-13	
TSSOP-8	-13		MSBL	-13	
TSSOP-14 TSSOP-16 TSSOP-16EP	-13		POWERDI®5	-7	
TSSOP-16EP	TC			-13	

Note: a) Device tape orientation applies to all products covered by the package unless otherwise specified.
b) Tape and package drawings are not drawn to scale and are shown for device tape orientation only.

Direction of feed

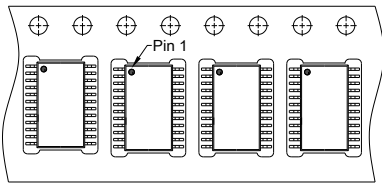
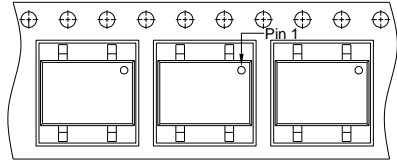
**Device Tape Orientation
For Part Marking, Refer to Datasheet**

16mm			16mm		
Package	Suffix	Tape Orientation	Package	Suffix	Tape Orientation
PowerDI8080-5	-13		SO-16	-13	
POWERMITE®3	-7 -13		SMC	-13	
V-QFN6060-48	-13R		SL-4	-TR	
V-QFN6060-80	-13R		SOP-4	-TR	
	-13RA		TO252 (DPAK)	-13 TC	
QSOP-20	TC		TO252-4 TO252-5	-13	
SO-14	-13		TSSOP-20	-13	
			TSSOP-20EP	TC	

Note: a) Device tape orientation applies to all products covered by the package unless otherwise specified.
b) Tape and package drawings are not drawn to scale and are shown for device tape orientation only.

Direction of feed

**Device Tape Orientation
For Part Marking, Refer to Datasheet**

<u>16mm</u>			<u>16mm</u>		
Package	Suffix	Tape Orientation	Package	Suffix	Tape Orientation
TSSOP-24EP TSSOP-24EP Type A1-B	-13		TT	-13	
--	--	--	--	--	--

Note: a) Device tape orientation applies to all products covered by the package unless otherwise specified.
b) Tape and package drawings are not drawn to scale and are shown for device tape orientation only.

Direction of feed 

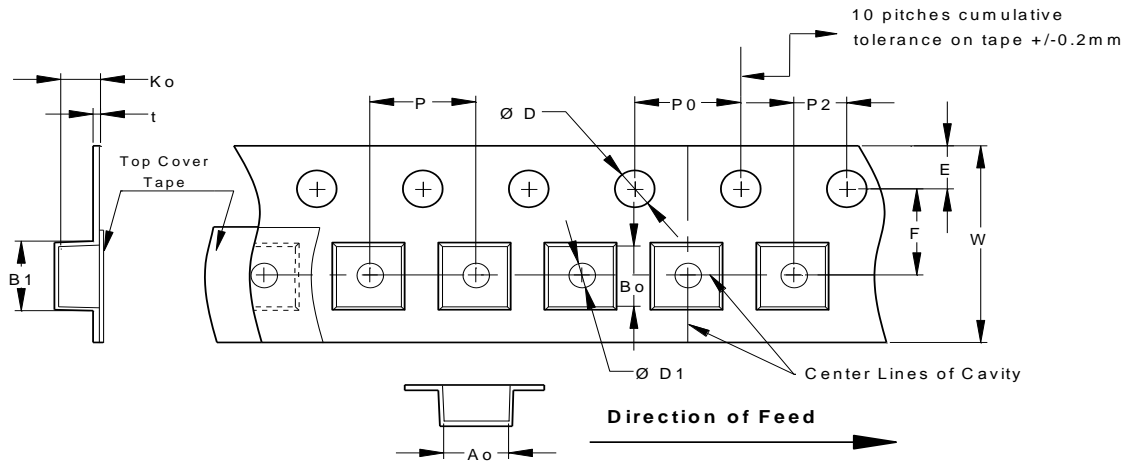
**Device Tape Orientation
For Part Marking, Refer to Datasheet**

24mm			40.4mm		
Package	Suffix	Tape Orientation	Package	Suffix	Tape Orientation
D2PAK	-T		POWERDI®5SP POWERDI®5SP-B	-13	
TO263AB	-13				
DO-218	-13				
HBS	-13				
PowerDI®1012-8	-13				
SLM-4	-TR				
TO263AB	-13				
TTL	-13		POWERDI®5SP-B	-13R	

Note: a) Device tape orientation applies to all products covered by the package unless otherwise specified.
b) Tape and package drawings are not drawn to scale and are shown for device tape orientation only.

Direction of feed

EMBOSSED CARRIER TAPE SPECIFICATIONS



8, 12, 16, 24mm EMBOSSED TAPE DIMENSIONS (in mm)						
Tape Width	D	E	P ₀	t _{max}	A ₀ B ₀ K ₀	Constant Dimensions
8, 12, 16, 24mm	1.50 +0.10 -0.0	1.75 ± 0.10	4.0 ± 0.10	0.400	See Note 1	Constant Dimensions

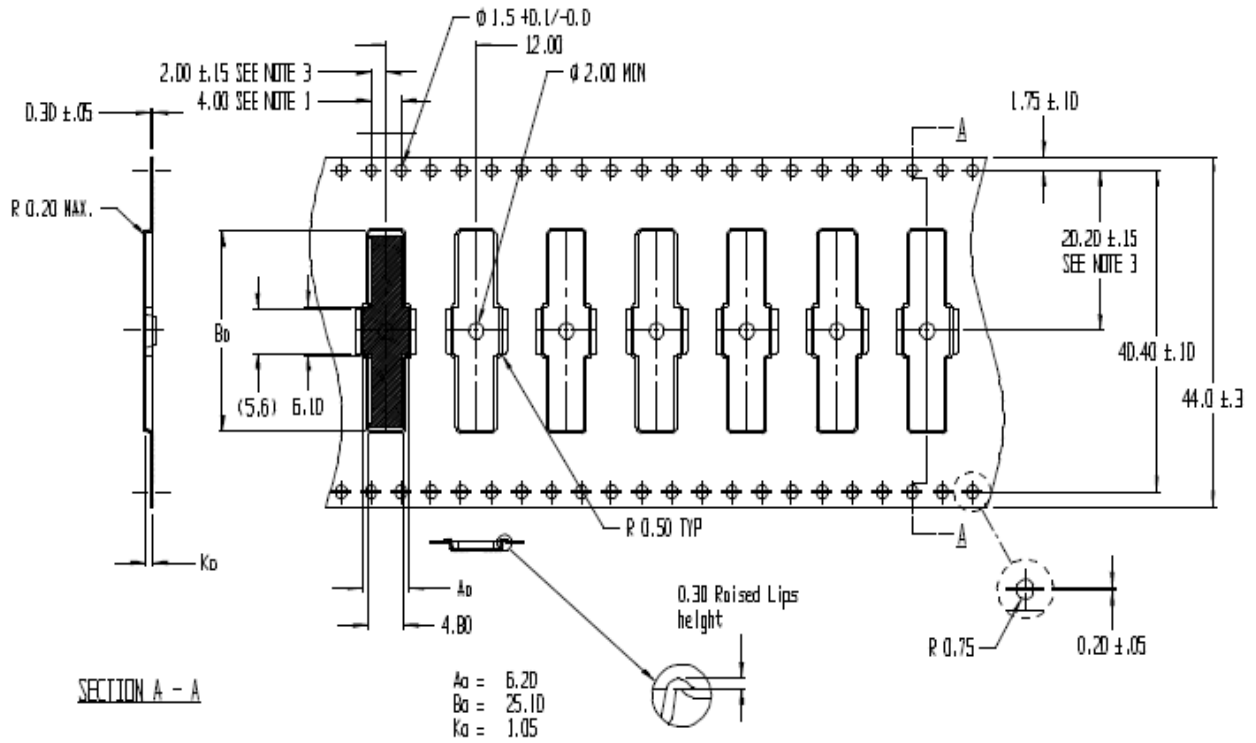
Tape Width	B ₁ max	D ₁ min	F	K max	P ₂	R min (Note 4)	W	Package Type
8mm	4.5	1.0 (Note 2) 0.35 (Note 3)	3.5 ± 0.05	2.4	2.0 ± 0.05	25	8.0 ± 0.30	Refer to 8mm Device Tape Orientation Table
12mm	8.2	1.5	5.5 ± 0.05	4.5	2.0 ± 0.05	30	12.0 ± 0.30	Refer to 12mm Device Tape Orientation Table
16mm	12.1	1.4	7.5 ± 0.10	2.25	2.0 ± 0.10	40	16.0 ± 0.30	Refer to 16mm Device Tape Orientation Table
		1.5	7.5 ± 0.10	3.29	2.0 ± 0.10			
		1.5	7.5 ± 0.10	3.70	2.0 ± 0.10			
24mm	20.1	1.5	11.5 ± 0.10	6.5	2.0 ± 0.10	50	24.0 ± 0.30	Refer to 24mm Device Tape Orientation Table

P				
Tape Width	2.0 ± 0.05		4.0 ± 0.10	
	Package	Suffix	Package	Suffix
8mm	DFN0603, DFN0604, DFN0606 DFN0806, DFN0808 DSN0603, DSN0808 SOD923, SOT953, SOT963 WLB0603, WLB1006 WLB1406, WLB1909	All taping suffix	All other packages defined in the 8mm Device Tape Orientation Table	
	DFN1006 SOT563 DSN1608, WLB1608	-7B		
	X3-DSN1006 X4-DSN1006	-7, -7A		
	DFN1010 DFN1010 (Type UXC)	-7A, -7B -7R		
	DSN1406, TSN1406, X1-WLB0808, WLB1406, DFN1610-2	-7		

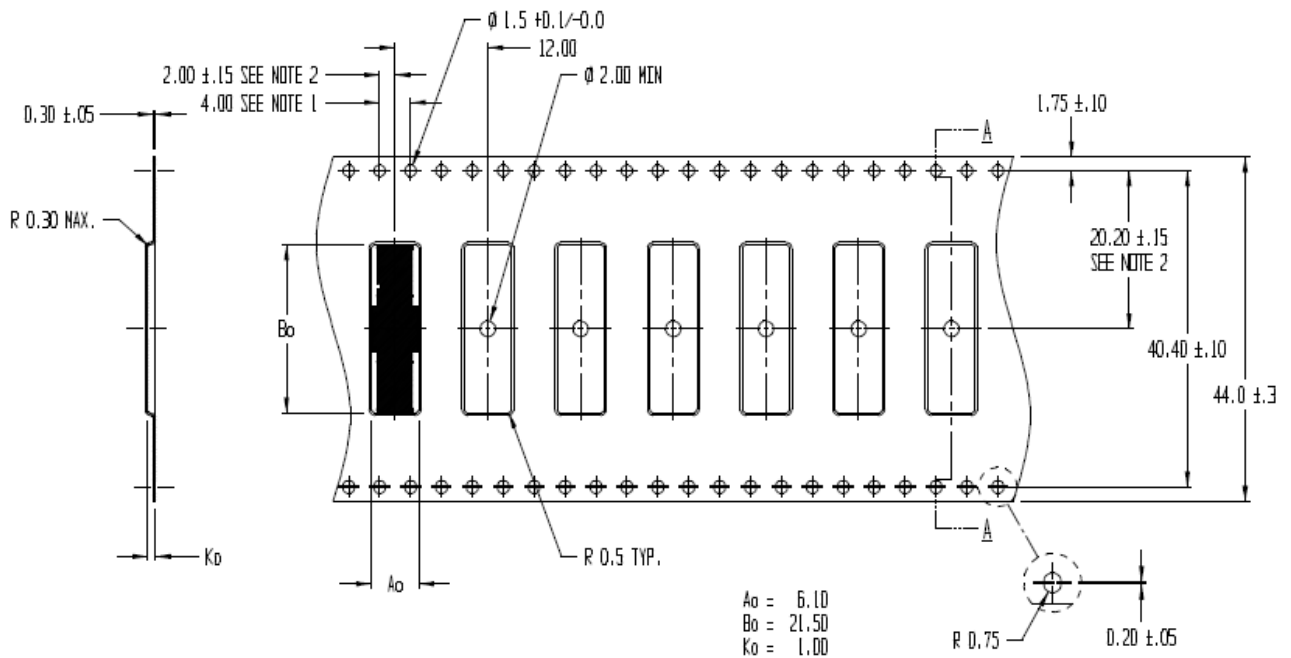
P				
Tape Width	4.0 ± 0.10		8.0 ± 0.10	
12mm	Package	Suffix	Package	Suffix
	DFLAT DFN5020 MELF SMA, SMAF, SMA-FS DSN3415 SSOP-8	All taping options -7	All other packages defined in the 12mm Device Tape Orientation Table	
	QFN4525-20	-13		
P				
16mm	8.0 ± 0.10		12.0 ± 0.10	
	Package	Suffix	Package	Suffix
	All packages defined in the 16mm Device Tape Orientation Table except DF-S and V-QFN6060-80 (-13R)	All taping options	DF-S V-QFN6060-80	-T -13R
P				
24mm	12.0 ± 0.10		16.0 ± 0.10	
	Package	Suffix	Package	Suffix
	PowerDI®1012-8	-13	D ² PAK DO-218 TO263AB	All taping options
40.40mm	POWERDI®5SP POWERDI®5SP-B	All taping options	n/a	n/a

- Notes:
1. Ao Bo Ko are determined by the component size. The clearance between the component and the cavity must comply with the rotational and lateral movement requirement provided on page 22.
 2. Applies to components 2.0mm x 1.2mm or larger.
 3. Applies to components smaller than 2.0mm x 1.2mm.
 4. Bending Radius, refer to page 23.

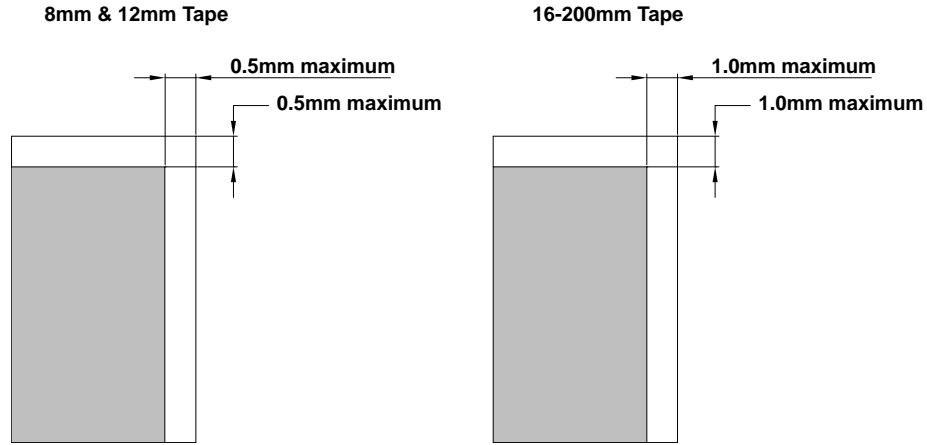
Carrier Tape Specification for POWERDI®5SP



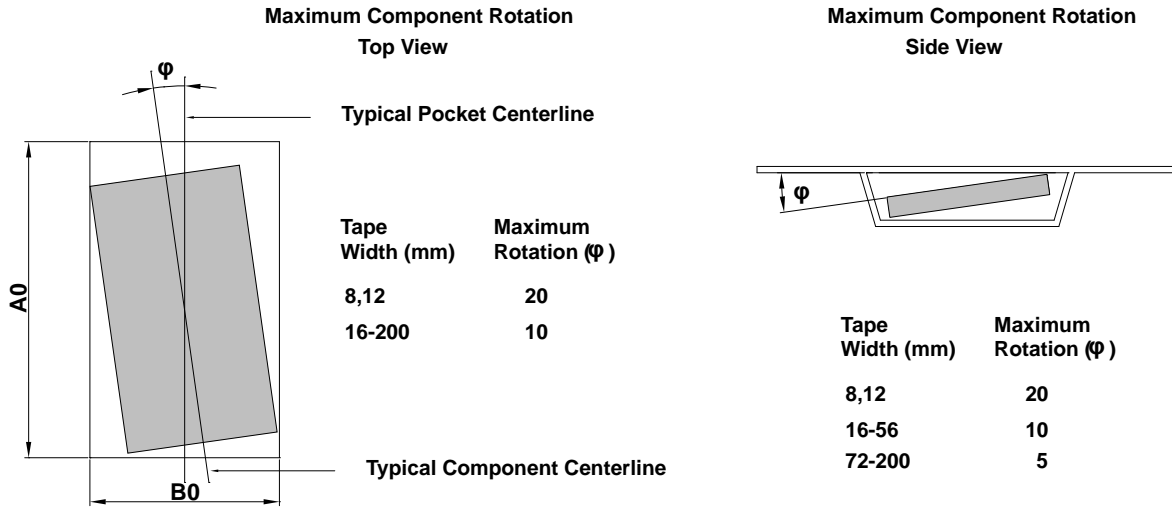
Carrier Tape Specification for POWERDI®5SP-B



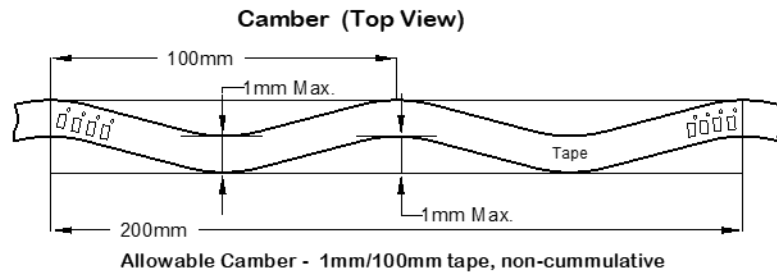
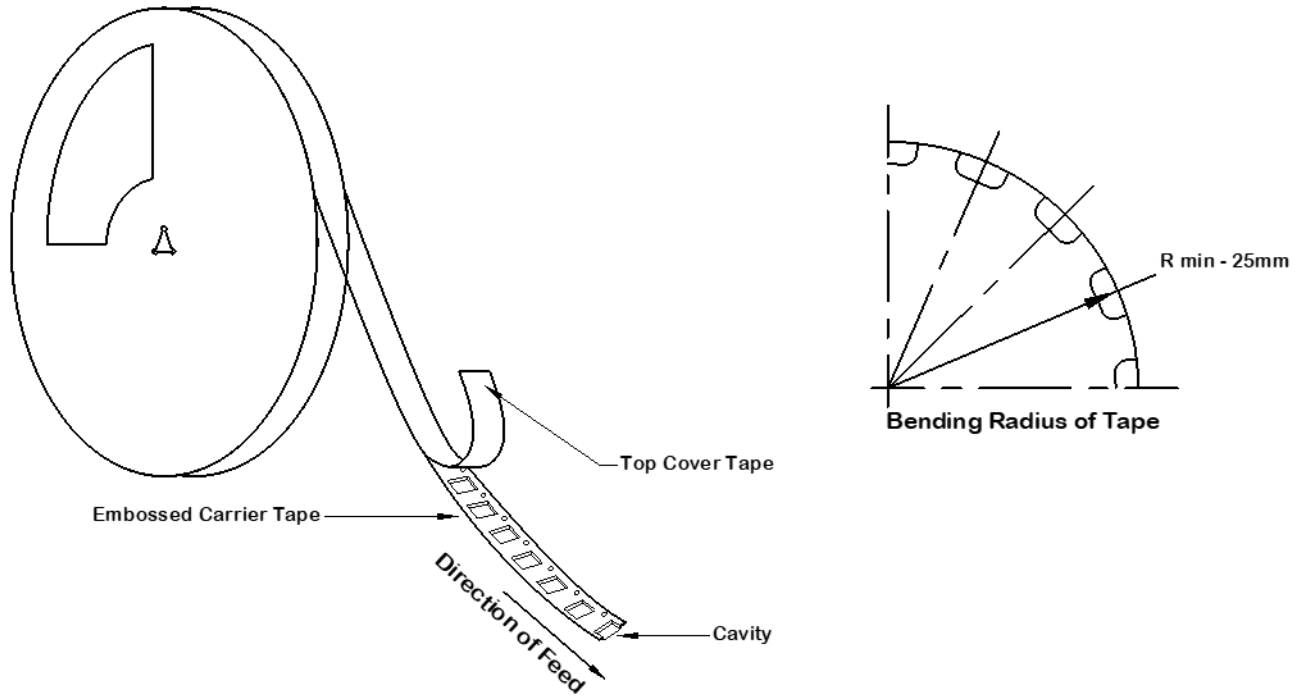
Component Lateral Movement



Component Rotational Movement

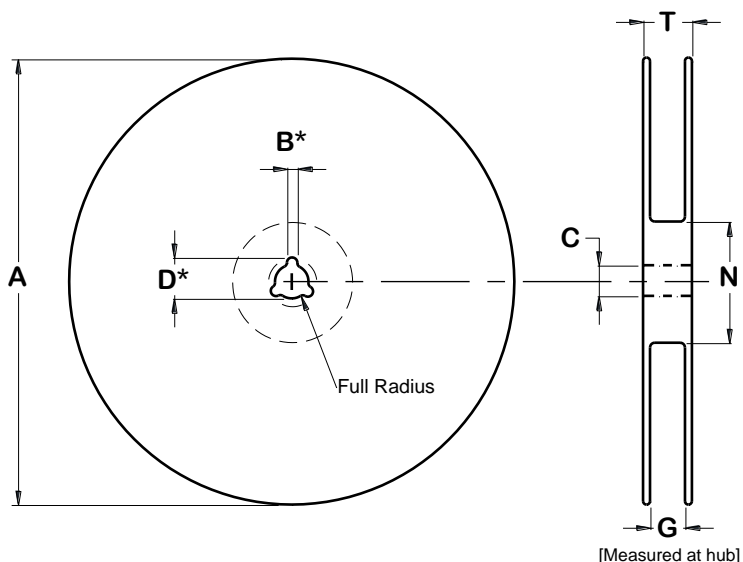


EMBOSED CARRIER TAPE SPECIFICATIONS
(All Dimensions in mm)



Notes: 1. Tape and components shall pass around radius 'R' without damage.

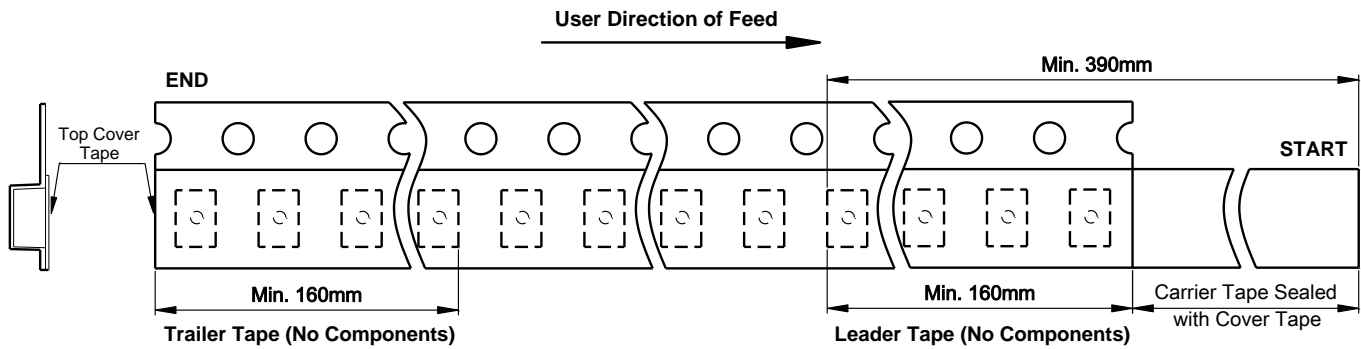
SURFACE MOUNT REEL SPECIFICATIONS (All Dimensions in mm)



* Drive spokes optional. If used,
dimensions with asterisks apply.

Tape Size	A Max	B* Max	C	D* Max	N Min	G	T Max
8mm	330 ±2	2.0 +0.5 -0	13 +0.5 -0.2	20.5 ±0.2	100 ±2	8.4 +1.5 -0.0	14.4
	178 ±2	2.0 +0.5 -0	13 +0.5 -0.2	20.5 ±0.2	55 ±5	8.4 +1.5 -0.0	14.4
12mm	330 ±2	2.0 +0.5 -0	13 +0.5 -0.2	20.5 ±0.2	100 ±2	12.4 +2.0 -0.0	18.4
	178 ±2	2.0 +0.5 -0	13 +0.5 -0.2	20.5 ±0.2	55 ±5	12.4 +2.0 -0.0	18.4
16mm	330 ±2	2.0 +0.5 -0	13 +0.5 -0.2	20.5 ±0.2	100 ±2	16.4 +2.0 -0.0	22.4
24mm	330 ±2	2.0 +0.5 -0	13 +0.5 -0.2	20.5 ±0.2	100 ±2	24.4 +2.0 -0.0	30.4

Tape Leader and Trailer



- Notes:
1. There shall be a leader of 230mm [9.05 inches] minimum which may consist of carrier and/or cover tape or a start tape followed by a minimum of 160mm [6.30 inches] of empty carrier tape sealed with cover tape.
 2. There shall be a trailer of 160mm [6.30 inches] minimum of empty carrier tape sealed with cover tape. The entire carrier tape must release from the reel hub as the last portion of the tape unwinds from the reel without damage to the carrier tape and the remaining components in the cavities.
 3. For DO-218 package, there shall be a leader tape of 26 spaces (no components) and trailer tape of 15 spaces (no components).

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