

# Tape & Reel Packaging For Surface Mount Devices

Automation of surface-mount assembly by the use of pick-and-place equipment to handle tiny components has been enhanced by evolutionary improvements in tape-and-reel systems which can accommodate as many as 4000 parts on a 13-inch reel. This results in less frequent component reloading and less downtime of the assembly equipment. Other advantages of tape feeders include versatility or the ability to handle a variety of parts.

Mini-Circuits has kept pace with the trend towards automated assembly and offers RF/Microwave signal-processing components in tape-and-reel format, in accordance with the specifications in the following tables. However, there are many situations where requirements are for smaller quantities. In these cases, Mini-Circuits offers small quantity reels of 20,50,100 , 200 and 500 pcs for selected models. There is no extra charge and these reels are ready for placement on pick and place systems.

## ESD Protection:

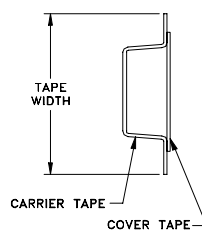
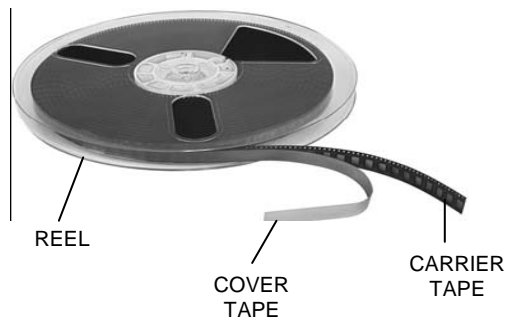
Mini-Circuits uses industry recognized materials to ensure that all products are protected from ESD (Electro-Static Discharge) damage during handling and shipping. Carrier tapes meet or exceed requirements defined in EIA-481 and EIA-541 and are static dissipative.

Properties	Method	Performance
Surface Resistivity	ASTM D257 at 50% RH	$\geq 10^4$ Ohms per square $< 10^{12}$ Ohms per square
Electrostatic Discharge	FTMS 101, Method 4046	<.02 seconds

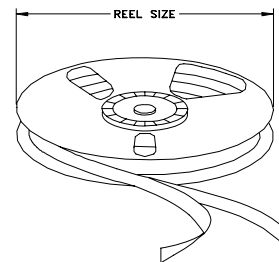
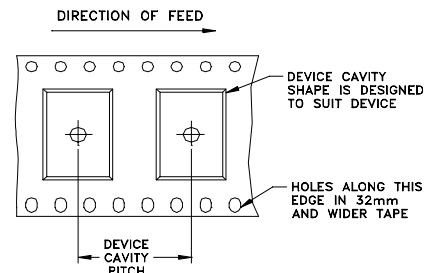
## Date Code Marking:

Mini-Circuits maintains device date code control per our ISO9001 and AS9100 procedures based on completion of processes, including Final Testing. The date code marked on the label is the date code associated with the parts contained in the reel or other packaging.

Our product warranty, as governed by our Terms and Conditions, starts from the date of shipment and is independent of device marking.



## tape illustration



INTERNET <http://www.minicircuits.com>  
 P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661  
 Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010

Mini-Circuits ISO 9001 & ISO 14001 Certified

## T & R Codes and Information (D4-D041)

T&R Code	Case Style	Tape Width (mm)	Device Cavity Pitch (mm)	Reel Size (inch)	QTY per Reel
F1	KK81	24	12	13	900
F2	TT100	16	12	13	500
	TT240, TT1224, TT1423, TT1491, TT1491-1				
F4	WW107, WW107-1	12	8	7	20, 50, 100, 500, 1000 see note 2
				13	
F5	YY101	32	16	13	500
	YY161				
	BK276				
	BK343				
	QQQ569				
	BJ360				
	DT855				
	HF1138, HF1139				
	HF1317, HF1392				
HF1458, HF1485					
F6	HZ1198	32	16	13	500
F8	MMM168	8	8	7	3000
F9	NNN150	24	16	13	500
F10	QQQ130	24	16	13	500
	QQQ1358				
	BJ937, BJ937-1				
	BJ1051				
	BJ293, BJ293-1				
	CJ608				
	CJ725				
	JQ1382				
SM34					
F11	BBB123, RRR137, RRR137-1	24	24	13	500
F12	TTT166, TTT166-1	24	12	13	500, 800
	TTT167, TTT167-1				
	TTT881, TTT1289				
F14	AF190, AF190-1	12	8	7	500, 1000
F15	AT790	12	8	13	2000
F16	HA1069	12	8	7	1000, 2500, see note 1
	XX211, XX211-1				
	XX746				
F17	AT1521, AT224	12	8	7	20, 50, 100, 200, 500
	AT224-1				
	AT224-2			13	1000, 2000
	AT224-3				
	AT790-1				
F18	AN213	24	16	13	500
F19	XX112	16	8	7	500
F20	VV105	12	12	13	1000, 2000
F21	BG291 HU1186, HU1374	32	32	13	200

<b>T&amp;R Code</b>	<b>Case Style</b>	<b>Tape Width (mm)</b>	<b>Device Cavity Pitch</b>	<b>Reel Size (inch)</b>	<b>QTY per Reel</b>
F24	BH292	16	12	13	500
	CB518				
	CB539				
F25	BG419	44	32	13	125
	BL301				
F26	AF320	12	8	7	1000
F27	JF1258	44	32	13	125
F28	BK377	32	20	13	500
	HD1131				
	DK801				
	DK1042, DK1182 DK1171, DK1515				
F29	BJ398	24	12	13	500
F31	CA531, CA531-1	8	4	7	1000
F34	CD541	16	12	13	1000
	CD542				
	CM624				
	CD636	16	12	13	1000
	SM1				
	SM2				
	SM1L				
	SM33				
	SM31				
	DZ885				
	DZ885-2				
	DZ943				
	DZ943-G1				
	DZ943-GC1				
	DZ943-GC2				
	DZ944				
	DZ944-G1				
	DZ944-GC1				
	DZ944-2				
	DZ944-GC2				
	DZ883				
DZ1034					
DZ1383-2					
LZ1624					
DZ1650	16	12	13	1000	
			7	10, 20, 50, 100, 200, 500, see note 2	
F36	CG581	24	12	13	500
F37	CH513	24	16	13	500
	CH549				
	CK605				
	CK605-1				
	CK1113				
	CK829				
	DV874				
	DV897				
	HE1135				
	HE1354 CK1246 CK1246-1				
F43	CL620	16	8	7	500

<b>T&amp;R Code</b>	<b>Case Style</b>	<b>Tape Width (mm)</b>	<b>Device Cavity Pitch (mm)</b>	<b>Reel Size (inch)</b>	<b>QTY per Reel</b>
F46	CD637	16	12	13	900
F47	DB714, DB1627	12	8	13	1000, 2000
				7	20, 50, 100, 200, 500, see note 2
F48	SM18	24	12	13	1000
F50	TT241	24	12	13	500
F53	SM20A	32	16	13	500
F55	DF782	12	8	7	20, 50, 100, 200, 500, 1000, see note 2
F56	BJ850	32	16	13	1000
F57	QQQ828	24	12	13	1000
F58	DL805	12	8	7	1000
				13	2000, 4000
F59	DH820	12	8	7	1000
F60	CZ682	24	16	13	1000
F61	AH202, AH202-1, AH202-2, AH1415, AH1557	24	12	13	200
F66	DQ1225	8	4	7	2000
	DL1721				20, 50, 100, 200, 500, 1000, 2000 see note 2
F68	DL1020	12	8	7	20, 50, 100, 200, 500, 1000, see note 2
	DL1636	12	8	7	20, 50, 100, 200, 500, 1000, see note 2
	DG1677			13	2000, 4000 see note 2
	FG873				
	FR933			7	1000
	GF981, GF995	12	8		
	DG983			13	2000, 4000
	DG984				
F69	DU674	44	32	13	125
F70	DG1293	12	8	7	1000
F71	FV1206	8	4	7	20, 50, 100, 200, 500, 1000, 3000, see note 2
	FV1206-4				
F72	FW856	12	8	13	2000, 4000
F73	AT577	12	8	7	500
F74	GE0805C-1	8	4	7	20, 50, 100, 200, 500, 2000, see note 2
	GE0805C-2, JV1210C, JV1210C-1	8	4	7	2000
F75	FV1206-1, FV1206-3	8	4	7	20, 50, 100, 200, 500, 1000, 3000, see note 2
F76	AT1029, AT1030, AT1642	12	8	13	2000
F77	GU1604	12	8	13	2000
	GU1041				

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F78	FZ802	16	12	13	1000
	FZ990				
	GP731				
	GP1212				
	GQ1018				
	LZ1671	16	12	13	500, 1000
				7	20, 50, 100, 200 see note 2
F79	AN1102	24	16	13	500
F80	HR1176	44	40	13	100
F81	CA1389	8	4	7	3000
F82	HV1195	12	8	7	500
F83	HQ1157	56	16	13	100
F84	JB1233	32	12	13	500
F85	HV1278	12	8	TBD	TBD
F86	JH1286	44	20	13	250
	JR1384				
F87	DG983-1	12	8	13	3000
	DG1235				
F88	JK1226	44	24	13	100
F89	HP1156	56	32	13	100
F90	MMM1362	8	4	7	20, 50, 100, 200, 500, 1000, 2000, 3000, see note 2
F91	JS1370	16	12	13	2000
F92	JM1360	16	8	7	1000
F93	JZ1436	12	4	7	1000
				13	3000
F94	KA1444	12	8	7	1000
				13	3000
F95	KJ1367, KJ1373	24	24	13	500
F96	KN1368	56	40	13	100
F97	KL942	44	32	13	200
	KL1294				
F99	JG1228	44	32	13	125
F100	KM1479	24	24	13	500
F101	CA1389	8	4	7	20, 50, 100, 200, 500, 1000, 2000, see note 2
F102	GU1414	12	8	13	1500
F103	AH1503	24	16	13	200
F104	DQ849	8	4	7	20, 50, 100, 200, 500, 1000, 2000, see note 2
F105	KR1508	56	24	13	250
F106	KS1509	44	24	13	250
	KU1513				
	KV1514				
F107	AH1596	32	20	13	200
F108	MC1631	12	4	7	20, 50, 100, 200, 500, 1000, 2000, see note 2
F109	AH1647	32	16	13	200

**Notes:**

1. BP, MSW, MSWA models available in 13" reel only.
2. Please consult individual model datasheet to determine device per reel availability.