Surface Mount
RF Transformer
T3-1-KK81+

50Ω   0.5 to 800 MHz

CASE STYLE: KK81

Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
13"	900

Maximum Ratings

Operating Temperature	-20°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	250mW
DC Current	30mA

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

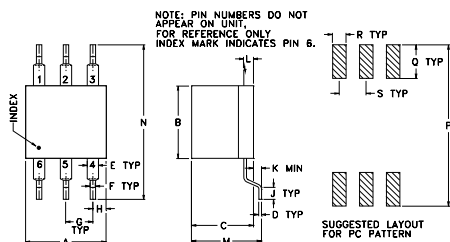|	
PRIMARY DOT	6
PRIMARY	3
SECONDARY DOT	1
SECONDARY	3
NOT USED	2,4,5

Features
• wideband, 0.5 to 800 MHz
• good return loss
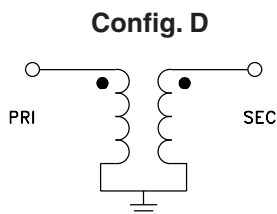• also available with plug-in (X65) & flat-pack (W38) leads

Applications
• impedance matching
• VHF/UHF

Transformer Electrical Specifications

Ω RATIO (Secondary/Primary)	FREQUENCY (MHz)	INSERTION LOSS*		
		3 dB MHz	2 dB MHz	1 dB MHz
3	0.5-800	0.5-800	2-400	—

* Insertion Loss is referenced to mid-band loss, 1.25 dB typ.

Outline Drawing

NOTE: PIN NUMBERS DO NOT APPEAR ON UNIT, FOR REFERENCE ONLY INDEX MARK INDICATES PIN 6.

SUGGESTED LAYOUT FOR PC PATTERN

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J
.30	.27	.23	.010	.042	.020	.100	.05	.05
7.62	6.86	5.84	0.25	1.07	0.51	2.54	1.27	1.27

K	L	M	N	P	Q	R	S	wt
.020	.036	.26	.575	.600	.125	.050	.100	grams
0.51	0.91	6.60	14.61	15.24	3.18	1.27	2.54	0.50

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)
0.500	2.940	7.210
1.940	1.730	10.660
9.923	1.180	12.300
50.297	1.220	11.120
99.524	1.230	8.970
200.594	1.340	5.440
348.840	1.490	2.960
523.423	1.950	1.940
677.637	2.840	1.720
800.000	3.700	1.830
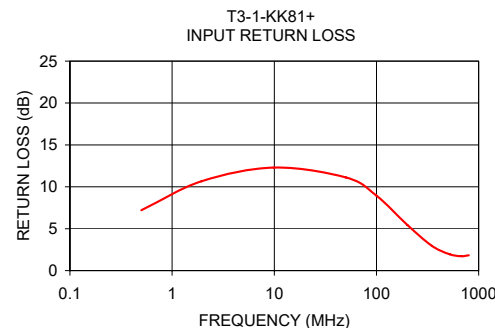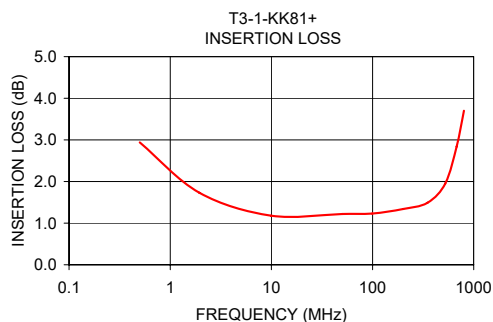
Config. D

PRI   SEC

T3-1-KK81+
INSERTION LOSS

T3-1-KK81+
INPUT RETURN LOSS

Mini-Circuits®

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	RETURN LOSS (dB)
0.50	2.94	7.21
1.94	1.73	10.66
9.92	1.18	12.30
50.30	1.22	11.12
99.52	1.23	8.97
200.59	1.34	5.44
348.84	1.49	2.96
523.42	1.95	1.94
677.64	2.84	1.72
800.00	3.70	1.83

Typical Performance Curves

Insertion Loss
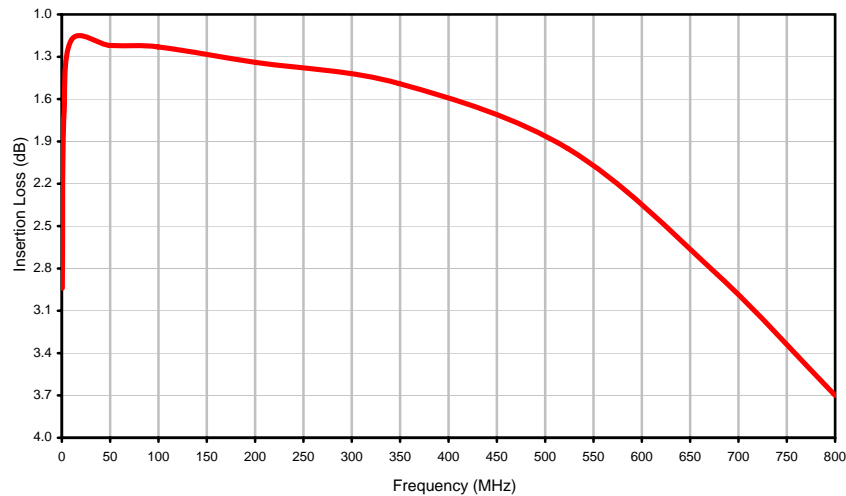
Return Loss
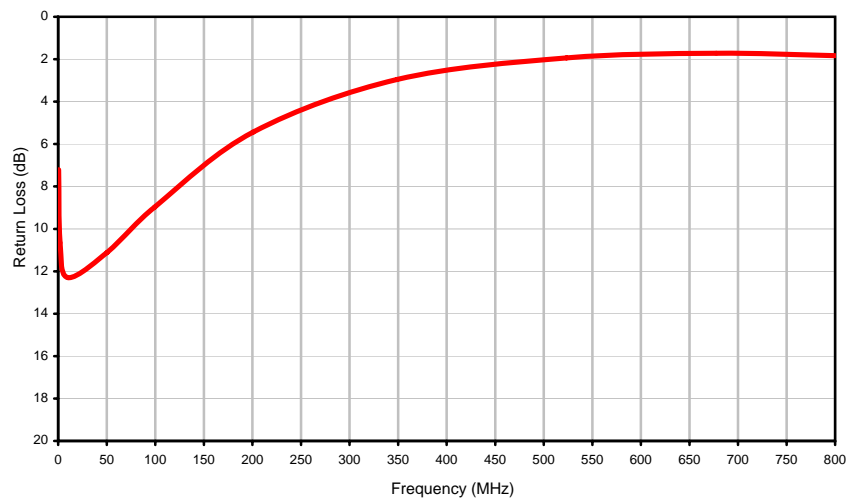
Case Style *KK*

Outline Dimensions

NOTE: PIN NUMBERS DO NOT
APPEAR ON UNIT,
FOR REFERENCE ONLY
INDEX MARK INDICATES PIN 6.

PCB Land Pattern

Suggested Layout,
Tolerance to be within ±.002

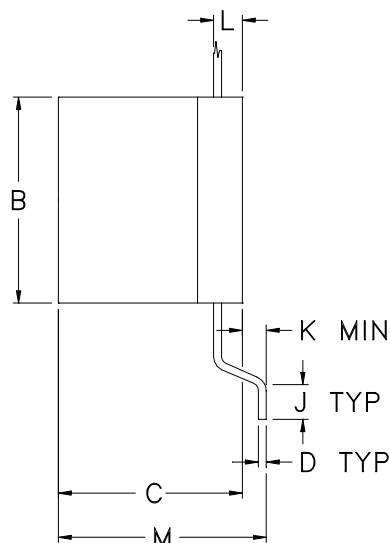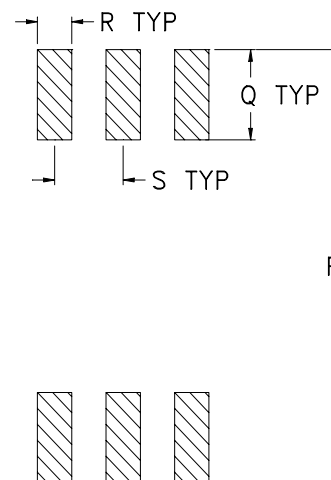| CASE #	A	B	C	D	E	F	G	H	J	K	L	M	N	P
KK81	.30 (7.62)	.27 (6.86)	.23 (5.84)	.010 (0.25)	0.42 (1.07)	.020 (0.51)	.100 (2.54)	.05 (1.27)	.05 (1.27)	.020 (0.51)	.036 (0.91)	.26 (6.60)	.575 (14.61)	.600 (15.24)
KK265	.30 (7.62)	.27 (6.86)	.22 (5.84)	.010 (0.25)	.020 (0.50)	.020 (0.51)	.100 (2.54)	.05 (1.27)	.05 (1.27)	0.1 (0.25)	.032 (0.81)	.23 (5.84)	.450 (10.62)	.475 (12.07)

CASE #	Q	R	S	WT. GRAM
KK81	.125 (3.18)	.050 (1.27)	.100 (2.54)	.50
KK265	.125 (3.18)	.050 (1.27)	.100 (2.54)	.65

Dimensions are in inches (mm). Tolerances: 2 Pl. ± .03; 3 Pl. ± .015

Notes:
1. Case material: Plastic.
2. Termination finish:
   For RoHS Case Styles: Tin plate over Nickel plate.
   For RoHS-5 Case Styles: Tin-Lead plate.
3. Special Tolerances: Termination width ± .005 inch, termination thickness ± .003 inch.

Mini-Circuits®

Tape & Reel Packaging   TR-F1

DEVICE ORIENTATION IN T&R

DEVICE CAVITY PITCH

TAPE WIDTH

INDEX

DIRECTION OF FEED

Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
24	12	13	900

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

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Sheet 1 of 1

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-20° to 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutetic Process: 225°C peak Pb-Free Process 245° - 250°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, Para 4.2.5, Test S, 95% Coverage
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Lead Integrity	2 Pound Pull, perpendicular to edge of unit	MIL-STD-202, Method 211, Condition A
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215

ENV19   Rev: A   03/09/11   M131005   File: ENV19.pdf

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