

## Non-Catalog Model

# RF Transformer

Impedance Ratio: 16:1

**T16-1T-KK81+**  
**T16-1T-KK81**



CASE STYLE: KK81

### Important Note

This is a non-catalog model and can be manufactured on specific request.  
Pricing and delivery information can be supplied upon request.

Please click "Back", and then click "Contact Us" for Applications support.

**+ RoHS compliant in accordance  
with EU Directive (2002/95/EC)**

The +Suffix identifies RoHS Compliance. See our web site  
for RoHS Compliance methodologies and qualifications.

### ELECTRICAL SPECIFICATIONS 50Ω @+25°C P<sub>IN</sub>=0 dBm

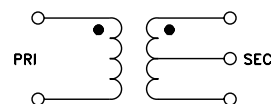
| Parameter       |               | Min. | Typ. | Max. | Units |
|-----------------|---------------|------|------|------|-------|
| Frequency       |               | 0.3  |      | 120  | MHz   |
| Insertion Loss* | 3dB bandwidth | 0.3  |      | 120  | MHz   |
|                 | 2dB bandwidth | 0.7  |      | 80   | MHz   |
|                 | 1dB bandwidth | 5    |      | 20   | MHz   |

\*Referenced to midband loss .9dB typ.

### MAXIMUM RATINGS

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

### Configuration A



### PIN CONNECTIONS

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

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RF/IF MICROWAVE COMPONENTS

REV. OR  
M114099  
T16-1T-KK81  
080228

# RF Transformer

## T16-1T+

### Typical Performance Data

| FREQUENCY<br>(MHz) | INSERTION LOSS<br>(dB) | RETURN LOSS<br>(dB) |
|--------------------|------------------------|---------------------|
| 0.30               | 1.52                   | 7.57                |
| 0.40               | 1.30                   | 8.82                |
| 0.50               | 1.19                   | 9.76                |
| 0.60               | 1.13                   | 10.47               |
| 0.70               | 1.09                   | 11.06               |
| 0.80               | 1.05                   | 11.57               |
| 0.90               | 1.02                   | 12.03               |
| 1.00               | 1.00                   | 12.43               |
| 2.00               | 0.81                   | 15.38               |
| 4.00               | 0.72                   | 18.43               |
| 5.00               | 0.71                   | 19.30               |
| 10.00              | 0.71                   | 20.53               |
| 15.00              | 0.73                   | 19.63               |
| 20.00              | 0.75                   | 18.25               |
| 30.00              | 0.80                   | 15.67               |
| 40.00              | 0.84                   | 13.62               |
| 50.00              | 0.87                   | 11.99               |
| 60.00              | 0.89                   | 10.66               |
| 70.00              | 0.93                   | 9.53                |
| 80.00              | 0.99                   | 8.57                |
| 90.00              | 1.07                   | 7.76                |
| 100.00             | 1.17                   | 7.04                |
| 110.00             | 1.29                   | 6.44                |
| 120.00             | 1.41                   | 5.90                |



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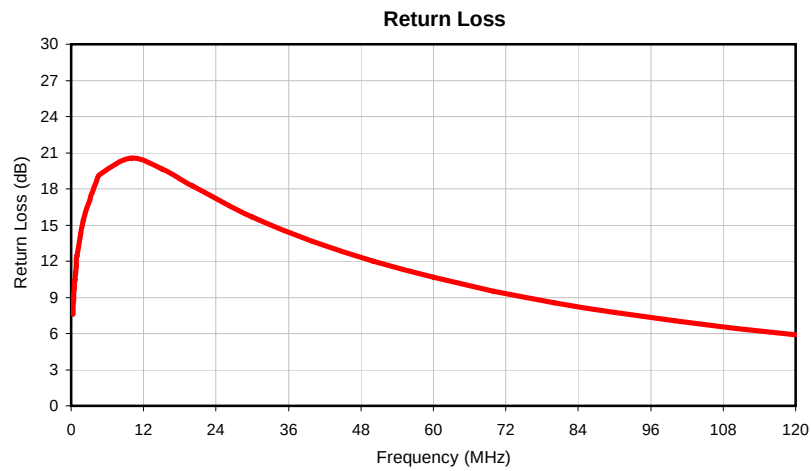
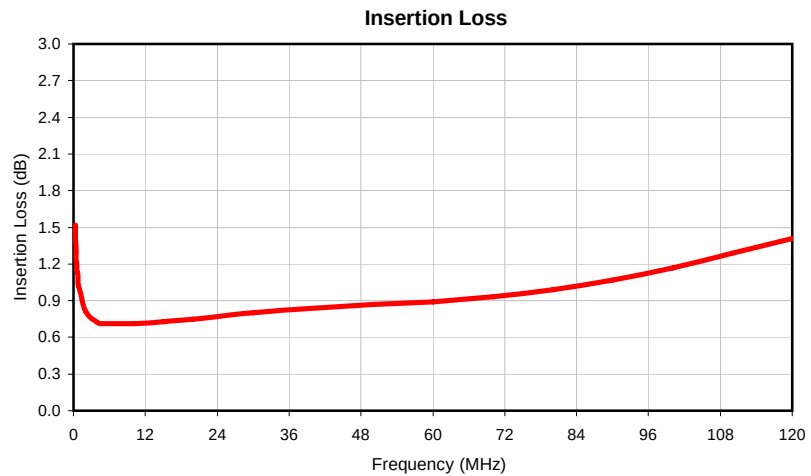
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# RF Transformer

T16-1T+

## Typical Performance Data



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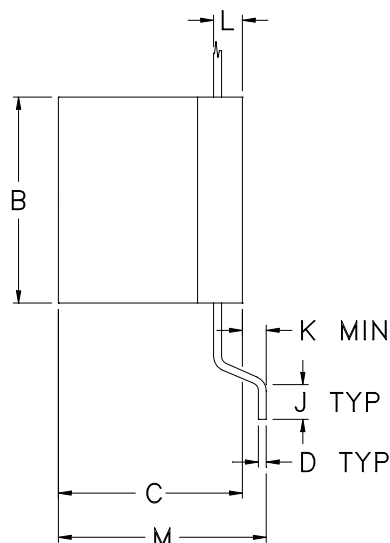
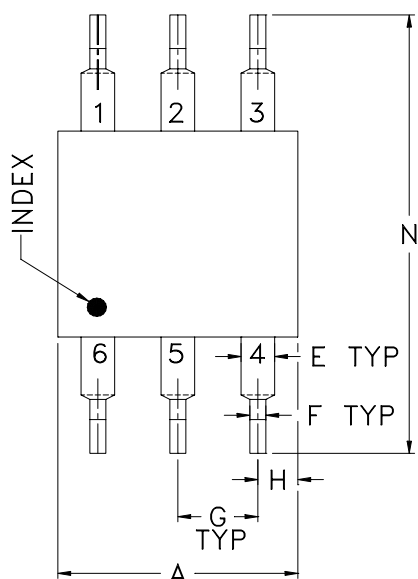
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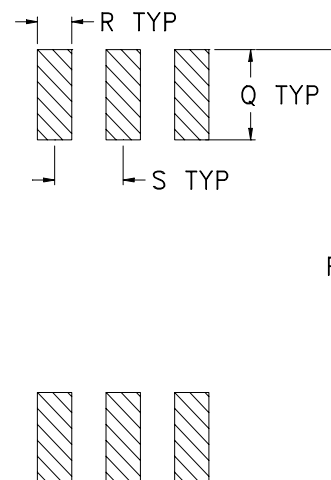
## Outline Dimensions

KK81  
KK265

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  $\pm .002$

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

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

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

### Notes:

- Case material: Plastic.
- Termination finish:  
For RoHS Case Styles: Tin plate over Nickel plate.  
For RoHS-5 Case Styles: Tin-Lead plate.
- Special Tolerances: Termination width  $\pm .005$  inch, termination thickness  $\pm .003$  inch.



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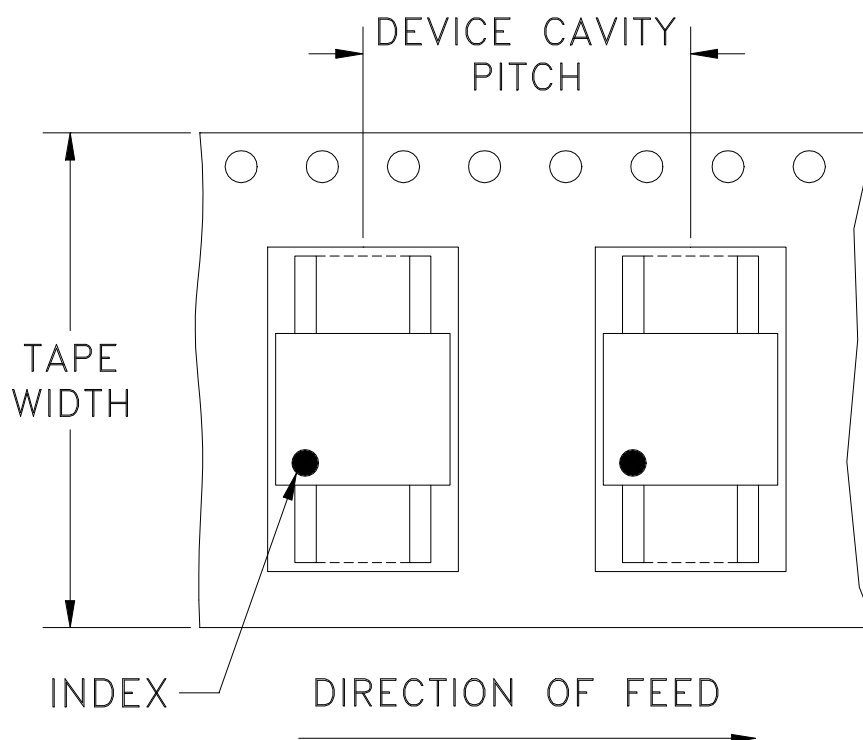
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# Tape & Reel Packaging TR-F1

## DEVICE ORIENTATION IN T&R



| Tape Width,<br>mm | Device Cavity<br>Pitch, mm | Reel Size,<br>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.

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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<br>Ambient Environment                                                                                                                             | Individual Model Data Sheet                           |
| Storage Temperature            | -55° to 100° C<br>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<br>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;<br>distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C | MIL-STD-202, Method 215                               |