



# Attenuator 10 to 1000 MHz

## Technical Data

### Features

- 40 dB Attenuation Range
- Negative Control Voltage

### Applications

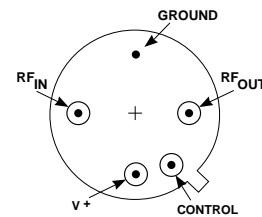
- Open and Closed Loop Gain Control
- AGC Circuits

### Description

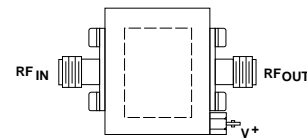
The UTF-040 is a thin-film voltage-controlled RF attenuator that operates from 10 to 1000 MHz. Utilizing PIN diodes, attenuation over frequency typically has  $\pm 0.5$  dB flatness over the complete control voltage range. On the average, the attenuation will change roughly 5 dB for 2-volt increment. The UTF-040 is available in either the TO-8 hermetic case or connectorized TC-1 package.

### UTF-040

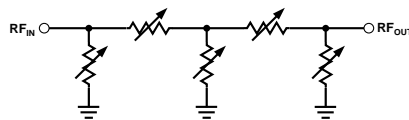
### Pin Configuration TO-8F



### TC-1



### Schematic



### Maximum Ratings

Parameter	Maximum
DC Voltage	+17 Volts
Continuous RF Input Power	+23.0 dBm
Operating Case Temperature	-55 to +125°C
Storage Temperature	-62 to +150°C
"R" Series Burn-In Temperature	+125°C

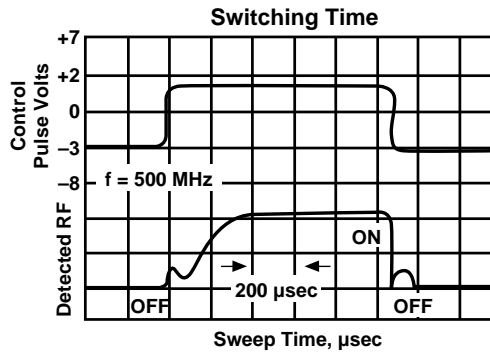
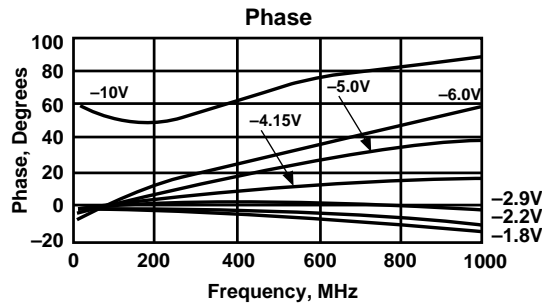
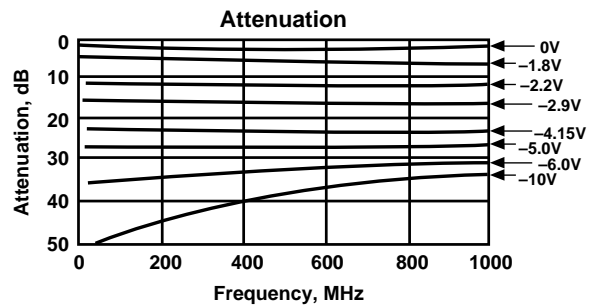
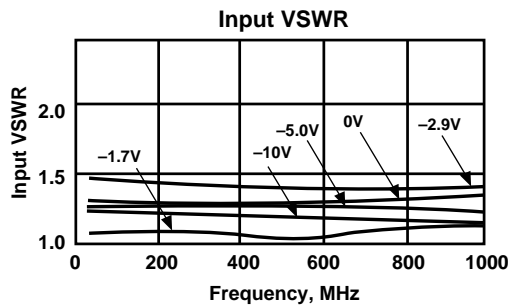
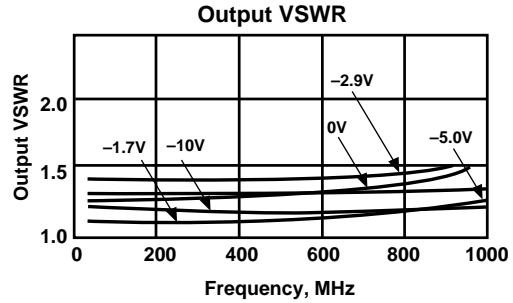
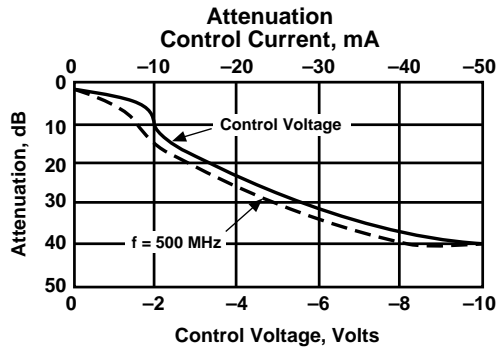
**Weight:** (typical) 2.1 grams

## Electrical Specifications

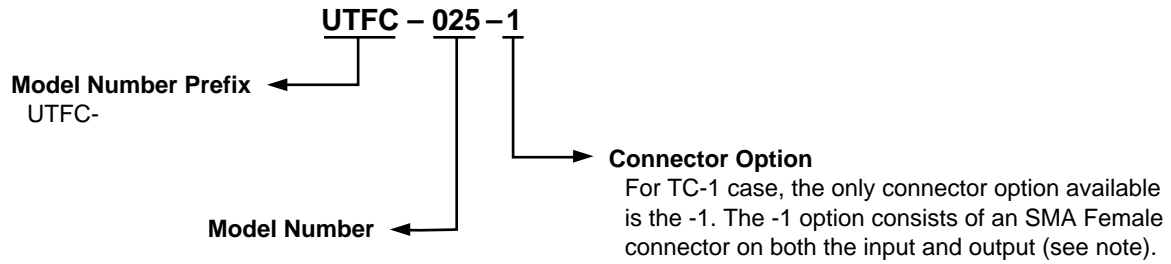
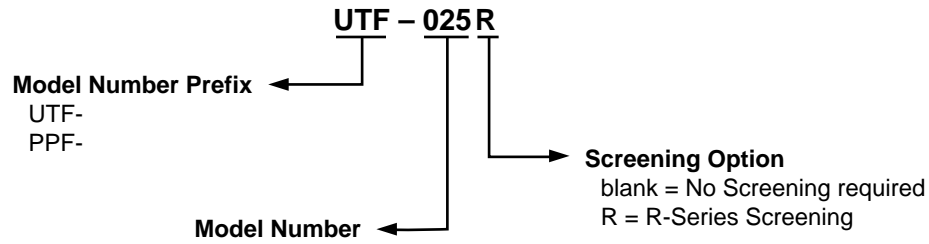
(Measured in 50  $\Omega$  system @ +15 VDC nominal)

Symbol	Characteristic	Typical $T_C = 25^\circ\text{C}$	Guaranteed Specifications		Unit
			$T_C = 0 \text{ to } 50^\circ\text{C}$	$T_C = -55 \text{ to } +85^\circ\text{C}$	
BW	Frequency Range	10-1000	10-1000	10-1000	MHz
—	Attenuation, Min. ( $V_C = -10 \text{ V}$ )				
	30-250 MHz	—	40	—	dB
	10-500 MHz	—	35	—	dB
	10-1000 MHz	—	30	—	dB
—	Insertion Loss, Max. ( $V_C = +0 \text{ V}$ )				
	10-500 MHz	—	2.2	—	dB
	10-1000 MHz	—	2.5	—	dB
—	VSWR (Worst Case In Attenuation Range)				
	10-500 MHz	—	2.0:1	—	—
	10-1000 MHz	—	2.5:1	—	—
—	Flatness Over Frequency (to 20 dB)	$\pm .5$	—	—	dB
—	Max Small Signal Input Level				
	10-50 MHz	—	0	—	dBm
	50-1000 MHz	—	+6.0	—	dBm
—	Switching Speed (10% to 90%) (ON to OFF or OFF to ON)	.4	—	—	ms
—	Bias Voltage	+15	+15	—	VDC
—	Bias Current	10	10	—	mA
—	Control Voltage	0 to -12	0 to -10	—	VDC
—	Control Current	0 to 75	0 to 75	—	mA

**Typical Performance At 25°C Temperature** (at +15 VDC unless otherwise noted)

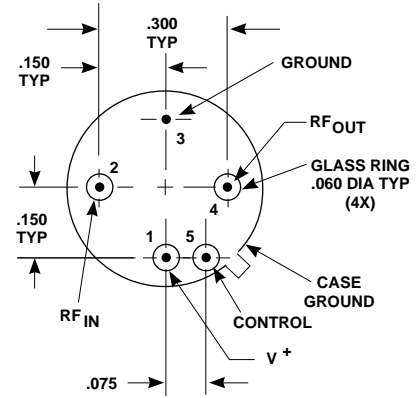
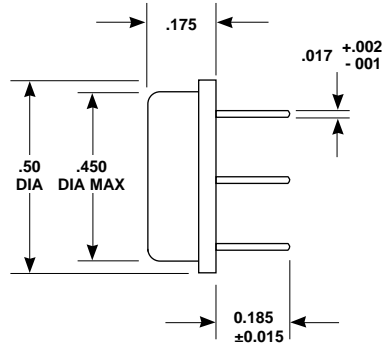
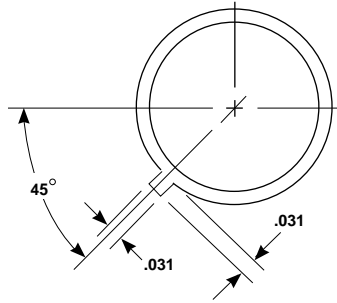


## Product Options



Note: No R-Series screening is available in the TC-1 case as the case is non-hermetic.

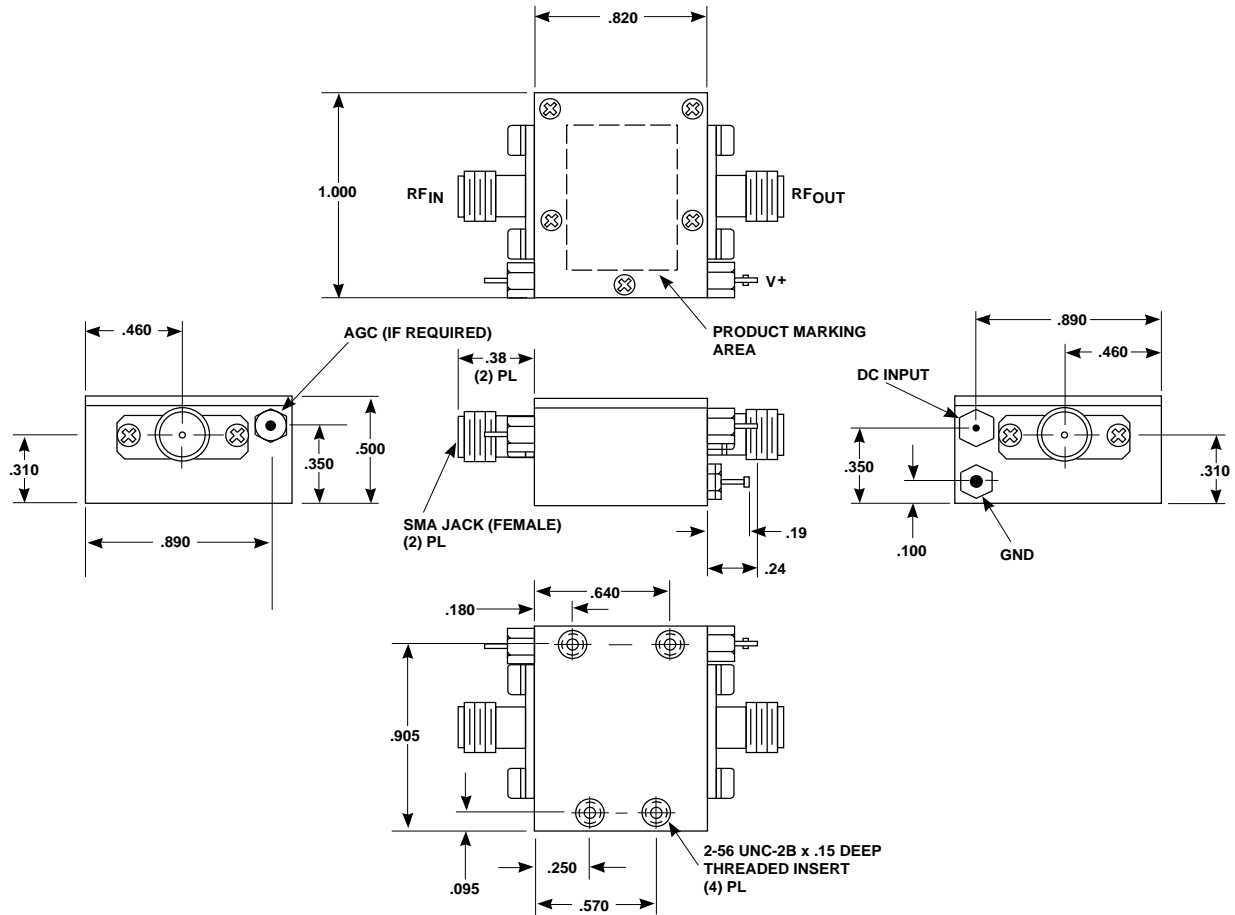
**Case Drawings  
TO-8F**



APPROXIMATE WEIGHT 2.1 GRAMS

- NOTES (UNLESS OTHERWISE SPECIFIED):**  
 1. DIMENSIONS ARE SPECIFIED IN INCHES  
 2. TOLERANCES: xx ±.02  
 xxx ±.010

# Case Drawings TC-1



TYPICAL WEIGHT WITH CONNECTORS = 21.5 GRAMS

- NOTES: 1. THE TC-1 CASE IS A NON-HERMETIC CASE.  
2. THE ONLY CONNECTOR OPTION AVAILABLE FOR THE TC-1 CASE IS THE -1, SMA FEMALE CONNECTORS AT BOTH INPUT AND OUTPUT PORTS.

- NOTES (UNLESS OTHERWISE SPECIFIED):  
1. DIMENSIONS ARE SPECIFIED IN INCHES  
2. TOLERANCES: xx ± .02  
xxx ± .010

Contact Teledyne Microwave Solutions:  
650-691-9800  
650-962-6845 fax

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