

Attenuator

5 to 2500 MHz

Technical Data

UTF-025

Features

- 35 dB Attenuation Range
- < 1.5:1 VSWR

Applications

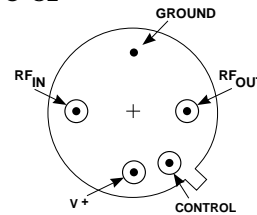
- Open and Closed Loop Gain Control
- AGC Circuits

Description

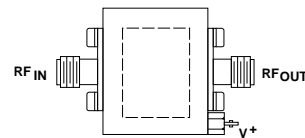
The UTF-025 is a thin-film voltage-controlled RF attenuator that operates from 5 to 2500 MHz. Utilizing PIN diodes, attenuation over frequency typically has ± 0.4 to ± 0.6 dB flatness over the complete control voltage range. On the average, the attenuation will change roughly 5 dB per 2-volt increment. The UTF-025 is available in either the TO-8 hermetic case or connectorized TC-1 package.

Pin Configuration

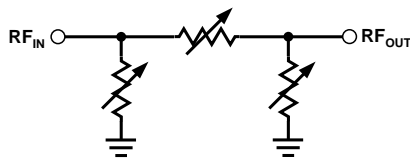
TO-8F



TC-1



Schematic



Maximum Ratings

Parameter	Maximum
DC Voltage	+18 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

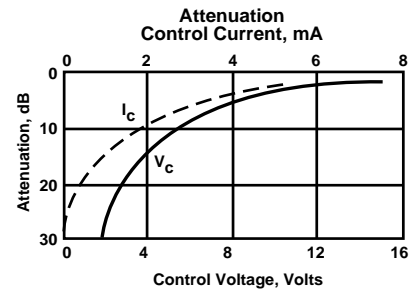
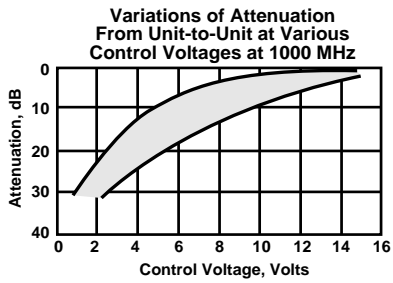
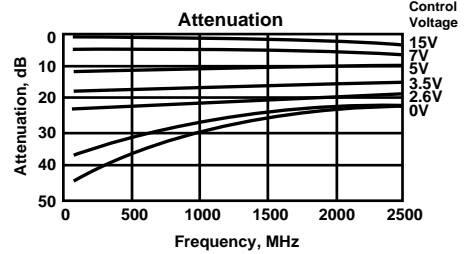
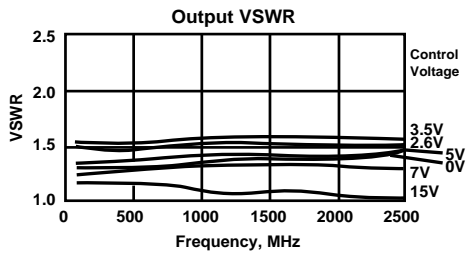
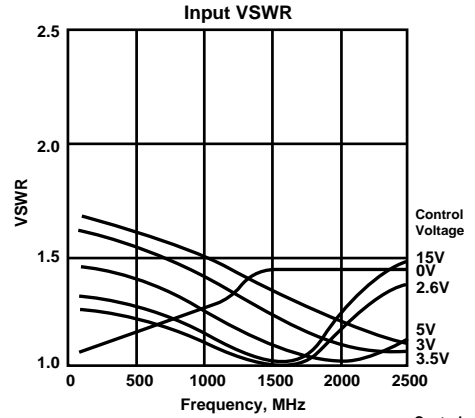
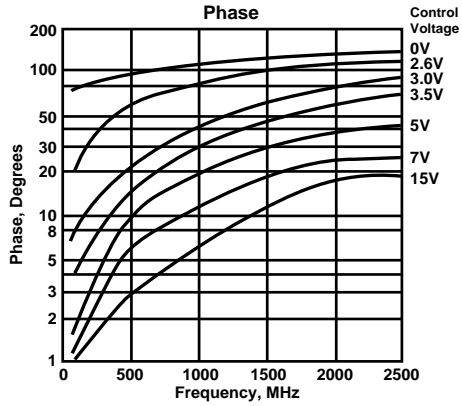
Weight: (typical) 2.1 grams

Electrical Specifications

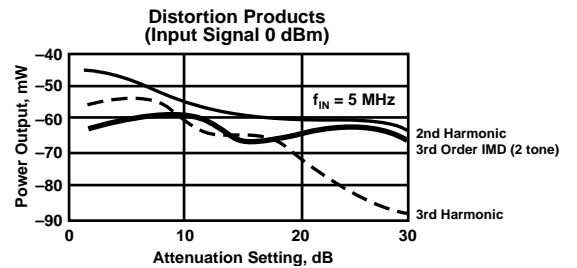
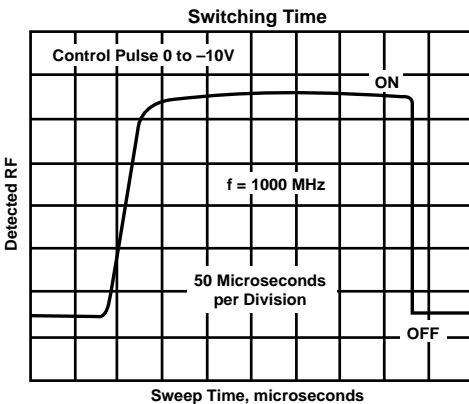
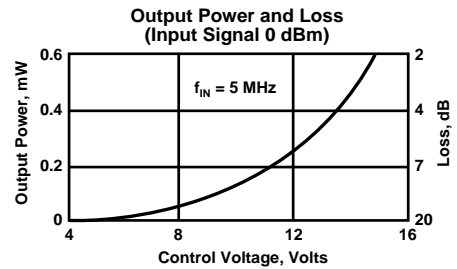
(Measured in 50 Ω system @ +15 VDC nominal)

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	5-2500	5-2000	5-2000	MHz
—	Attenuation, Min. ($V_C = 0 \text{ V}$)				
	5-500 MHz	33.0	—	—	dB
	500-1000 MHz	28.0	—	—	dB
	1000-2000 MHz	23.0	—	—	dB
	2000-2500 MHz	17.0	—	—	dB
—	Insertion Loss, Max. ($V_C = +15 \text{ V}$)				
	5-1000 MHz	2.0	—	—	dB
	1000-2000 MHz	2.8	—	—	dB
	2000-2500 MHz	3.5	—	—	dB
—	VSWR (Worst Case In Attenuation Range)				
	5-1000 MHz	1.5:1	—	—	—
	1000-2000 MHz	1.8:1	—	—	—
—	Intercept Point	+30	—	—	dBm
—	Flatness Over Frequency (Min. to 15 dB)				
	5-1000 MHz	± 0.4	—	—	dB
	1000-2000 MHz	± 0.6	—	—	dB
	(Min. to 20 dB)				
	5-1000 MHz	± 0.8	—	—	dB
—	Switching Speed (10% to 90%) (ON to OFF or OFF to ON)	75	—	—	μs
—	Bias Voltage	+15	—	—	VDC
—	Bias Current	15	—	—	mA
—	Control Voltage	1 to +15	—	—	VDC
—	Control Current	0 to 7	—	—	mA

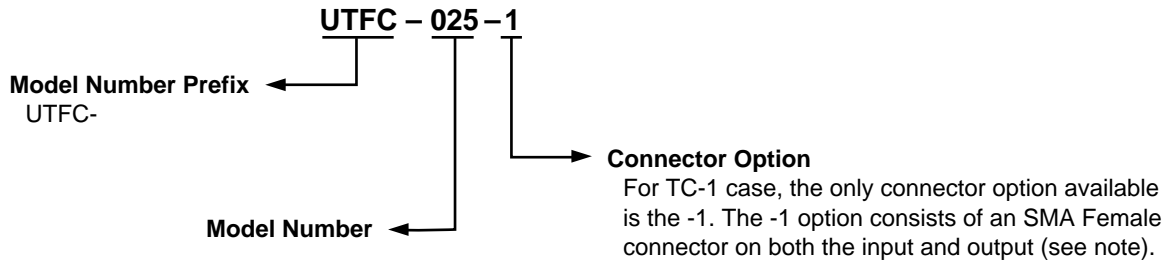
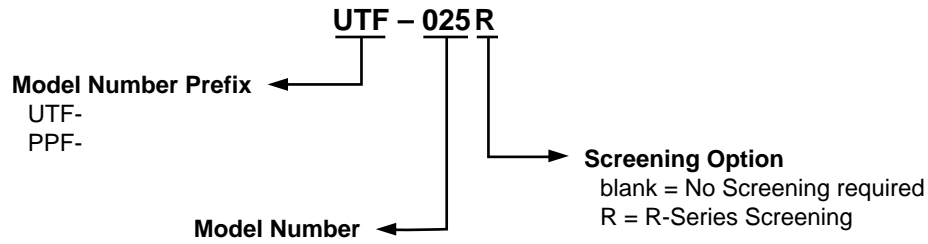
Typical Performance At 25°C Temperature (at +15 VDC unless otherwise noted)



Due to R_S vs. I_F differences in pin diodes used in this product, internal drive compensation is done to optimize VSWR. This correction can affect the Attenuation vs. Control Voltage from unit to unit to the extent shown in the graph.

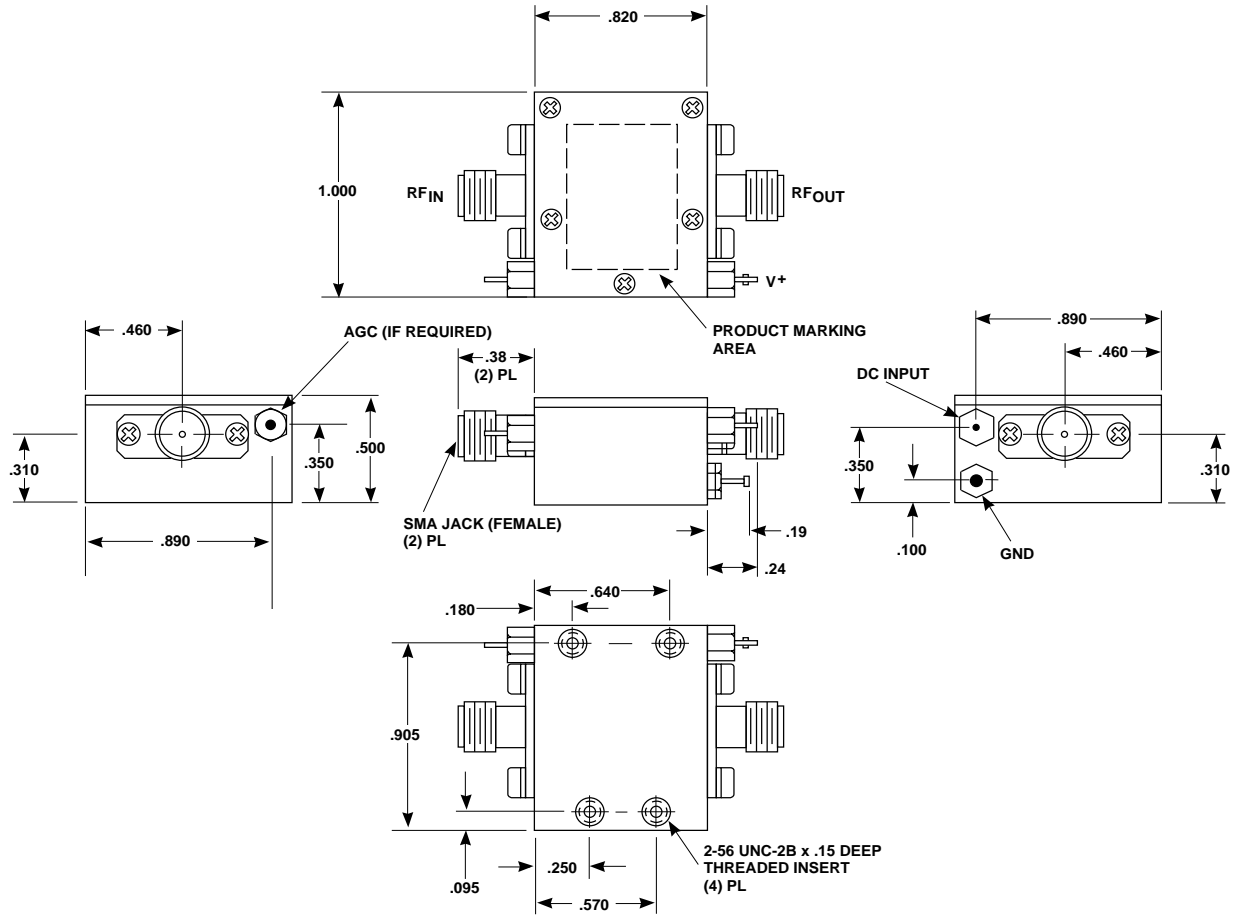


Product Options



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

Case Drawings TC-1

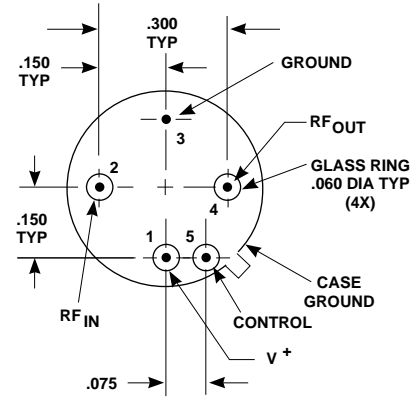
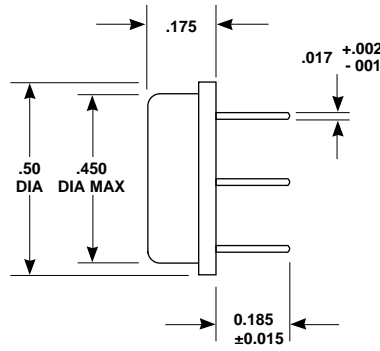
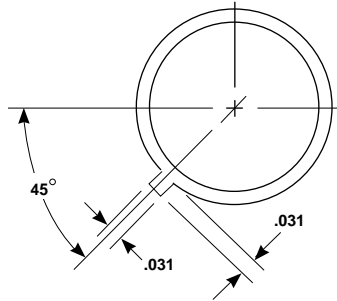


TYPICAL WEIGHT WITH CONNECTORS = 21.5 GRAMS

- 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 $\pm .02$
xxx $\pm .010$

**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

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