

Voltage Controlled Attenuator

.1 to 4 GHz

Technical Data

PSF-030-25

Features

- **Frequency Range: 0.1 to 4 GHz, usable to 5 GHz**
- **30 dB attenuation range, 50 dB at 500 MHz**
- **Temperature Stable**
- **Well matched throughout attenuation range**
- **Surface Mount Package**

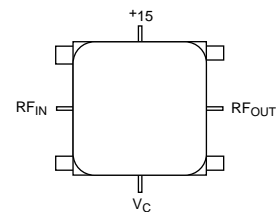
Applications

- **AGC/ALC loops**
- **AM modulator**
- **Non-reflective SPST switch**

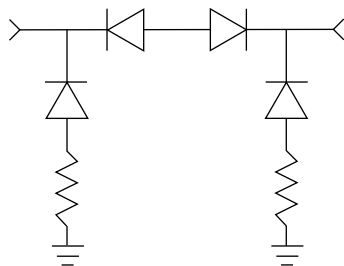
Description

The PSF-030 is a thin film analog voltage controlled attenuator providing 30 to 50 dB of range depending on frequency and flatness requirements. It uses PIN diodes in a modified Pi configuration to maintain low VSWR performance over the control range. The PSF-030-25 comes in our smallest hermetic surface mount package and offers higher performance than the PSF-030-45.

Pin Configuration SM-25F



Schematic



Maximum Ratings

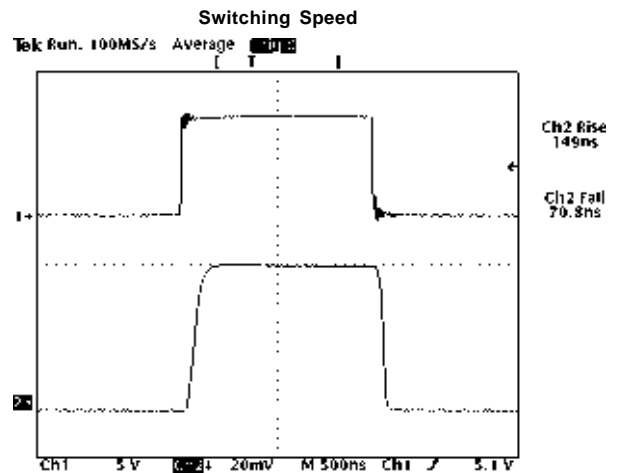
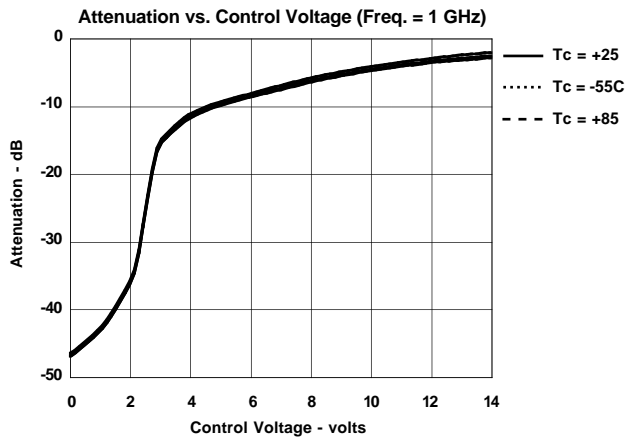
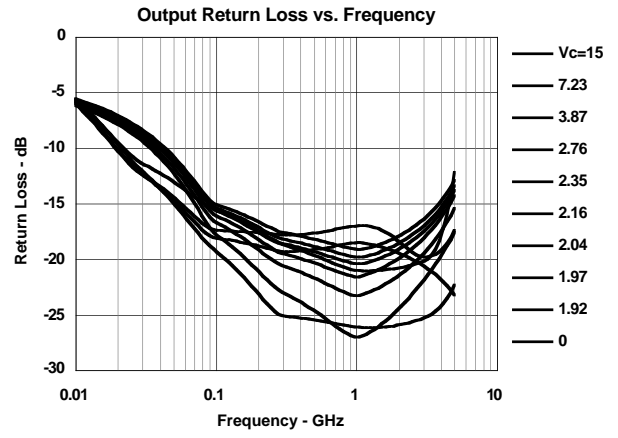
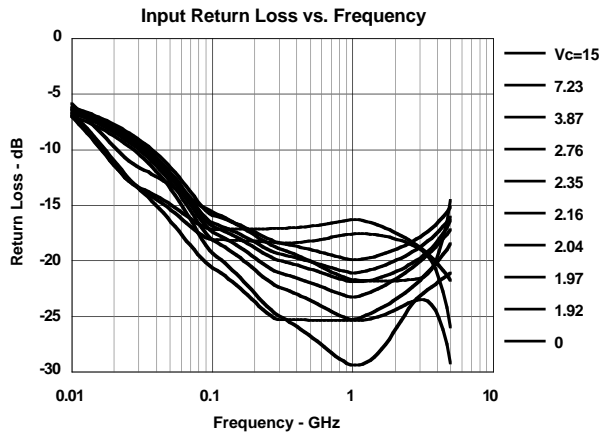
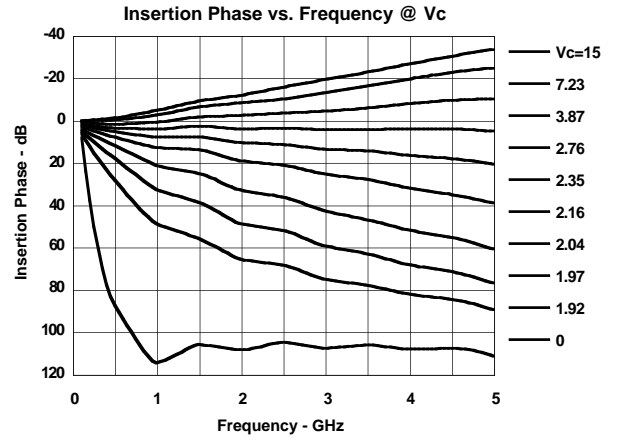
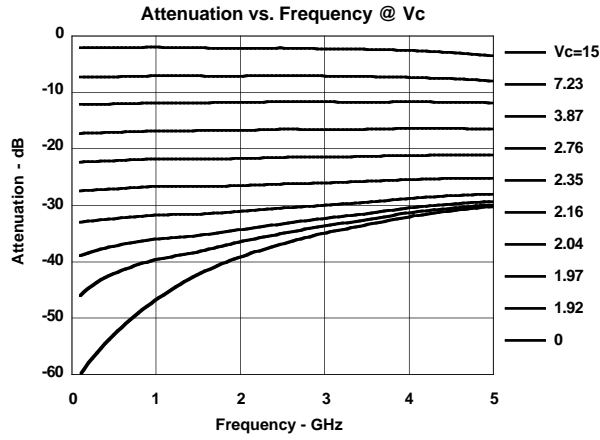
Parameter	Maximum
DC Voltage	+17 Volts
Continuous RF Input Power	+23 dBm
Operating Case Temperature	-55 to +125°C
Storage Temperature	-62 to +150°C
"R" Series Burn-In Temperature	+125°C

Weight: (typical) 0.5 grams

Electrical Specifications(Measured in 50 Ω system @ ± 15 VDC nominal unless otherwise noted)

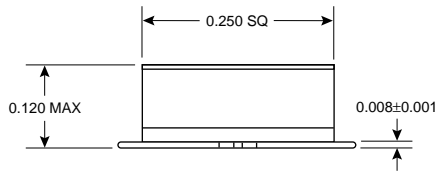
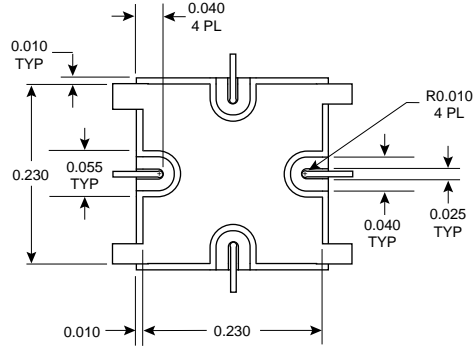
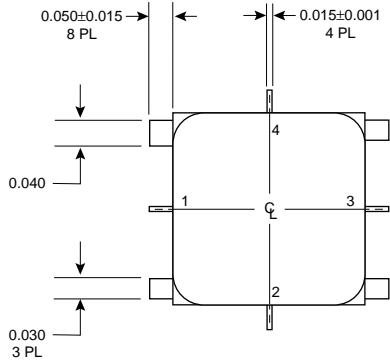
Symbol	Characteristic	Typical $T_C = 25^\circ\text{C}$	Guaranteed Specifications		Unit
			$T_C = 0$ to 50°C	$T_C = -55$ to $+85^\circ\text{C}$	
BW	Frequency Range	100–5000	100–4000	100–4000	MHz
—	Attenuation, Min. ($V_c = 0$ V)				
	100–1000 MHz	45	40	30.0	dB
	1000–2000 MHz	40	35	25.0	dB
	2000–4000 MHz	30	25	20.0	dB
—	Insertion Loss, Max ($V_c = +15\text{V}$)	2.5	3.0	3.5	dB
—	VSWR (Worst Case In Attenuation Range)	1.7:1	2.0:1	2.0:1	—
—	Flatness Over Frequency (to 25 dB)				
	100–2000 MHz	± 0.5	± 1.0	± 1.0	dB
	2000–4000 MHz	± 1.0	± 1.5	± 1.5	dB
—	Switching Speed (10% to 90%) (ON to OFF or OFF to ON)	.5	1	1	μs
—	Bias Current	8.0	—	—	mA
—	Control Voltage	0 to +15	—	—	VDC
—	Control Current	0 to 10	—	—	mA

Typical Performance Over Temperature (@ ±15 VDC unless otherwise noted)



Top Trace: control pulse, 0-10v
Bottom Trace: detected RF (pos detection)

Case Drawings



PKG #	PIN DESIGNATION			
	1	2	3	4
SM-25	RF IN	GND	RF OUT	+V
SM-25F	RF IN	V-CONT	RF OUT	+V
SM-25DA	RF IN	-V	VID OUT	+V
SM-25DD	RF IN	CTL	TTL OUT	+V

NOTES:

1. MAXIMUM TEMPERATURE EXPOSURE IS 260°C FOR 10 SECONDS.
2. DIMENSIONS IN INCHES.
3. TOLERANCES: xx ± .01
xxx ± .005

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

Check for updates:
www.teledynemicrowave.com