

# Coaxial Voltage Variable Attenuator

## ZX73-2500+

50Ω 10 to 2500 MHz

### Maximum Ratings

Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 85°C
Absolute Max. Supply Voltage (V+)	12V
Absolute Max. Control Voltage (Vctrl)	20V
Absolute Max. RF Input Level	+20 dBm
Permanent damage may occur if any of these limits are exceeded.	

### Features

- Broadband, 10-2500 MHz
- IP3, +43 dBm typ.
- 40 dB attenuation @ 1500 MHz
- Good VSWR at in /out ports over attenuation range
- No external bias and RF matching network required
- Shielded case
- Protected by US Patent 6,790,049



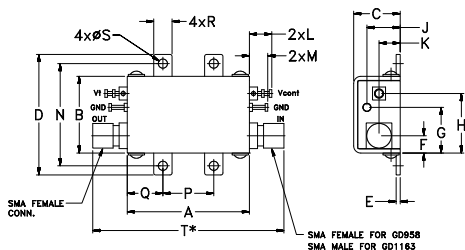
FEMALE SMA shown  
CASE STYLE: GD958

SMA	Connectors	Model	Case
INPUT	OUTPUT		
FEMALE	FEMALE	ZX73-2500-S+	GD958
MALE	FEMALE	ZX73-2500M-S+	GD1163

### Applications

- Variable gain amplifier
- Power level control
- Feed-forward amplifiers
- ALC circuits

### Outline Drawing (GD958)



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	
1.20	.75	.46	1.18	.04	.17	.45	.59	.33	
30.48	19.05	11.68	29.97	1.02	4.32	11.43	14.99	8.38	
K	L	M	N	P	Q	R	S	T	wt.
.21	.22	.18	1.00	.50	.35	.18	.106	1.88	grams
5.33	5.59	4.57	25.40	12.70	8.89	4.57	2.69	47.75	35.0

Note:

\* T dimension is 2.05 inch (52.07 mm) for GD1163 Case Style.

### Electrical Specifications (T<sub>AMB</sub> = 25°C)

FREQ. (MHz)	MIN. INSERTION LOSS, dB (+15V)		MAX. ATTENUATION dB (0V)		INPUT POWER (dBm)		CONTROL Voltage Current (V) (mA)		IP3 (dBm)	RETURN LOSS <sup>1</sup> (dB)	POWER SUPPLY Voltage Current (V) (mA)	
	Min.	Max.	Typ.	Max.	Max.	Max.	Max.	Max.			Typ.	Typ.
10	500	3.0	4.6	55	41	+20	0 - 17	30	43	20	+3 to +5	5
500	1500	3.3	5.0	40	30	+20	0 - 17	30	43	20	+3 to +5	5
1500	2500	4.0	6.2	37	25	+20	0 - 17	30	44	20	+3 to +5	5

Notes:

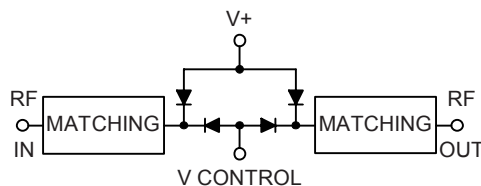
Rise/Fall time: 14μSec/25μSec Typ.  
Switching Time, turn on/off: 14μSec/25μSec Typ.

<sup>1</sup> Improved R. Loss in/out performance can be achieved at certain frequencies by choosing a V+ between +3V to +5V

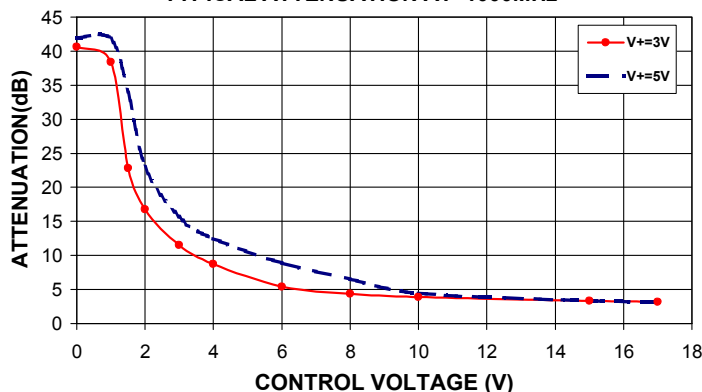


NOTE: When soldering the DC connections, caution must be used to avoid overheating the DC terminals. See Application Note [AN-40-10](#).

### Equivalent Schematic



### ZX73-2500+ TYPICAL ATTENUATION AT 1000MHz

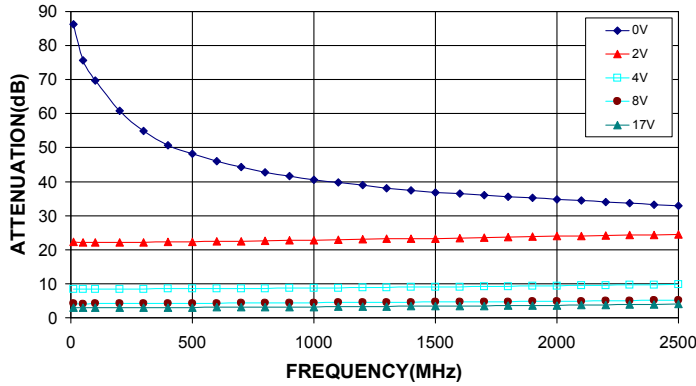


Notes

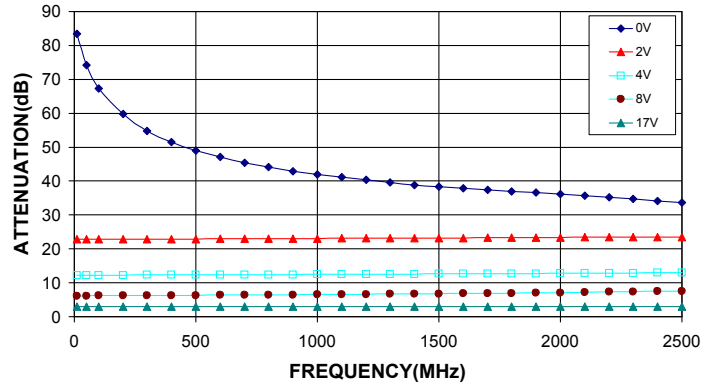
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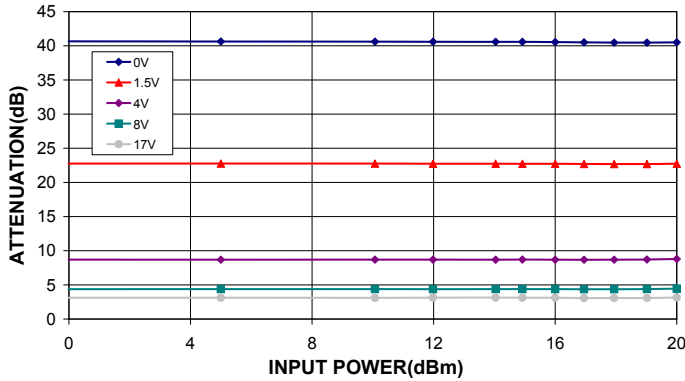
**ZX73-2500+**  
ATTENUATION Vs. FREQUENCY  
OVER CONTROL VOLTAGES @ V+=3V



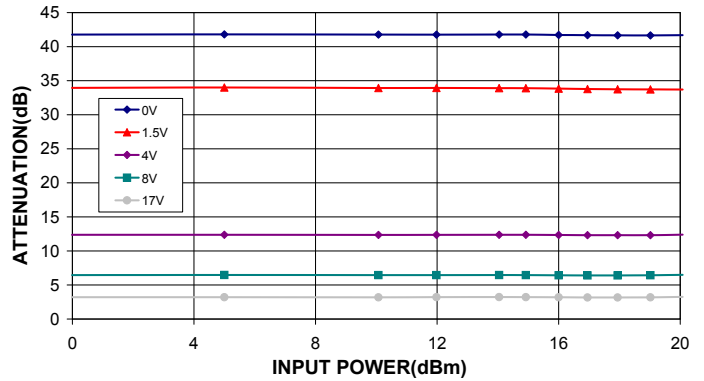
**ZX73-2500+**  
ATTENUATION Vs. FREQUENCY  
OVER CONTROL VOLTAGES @ V+=5V



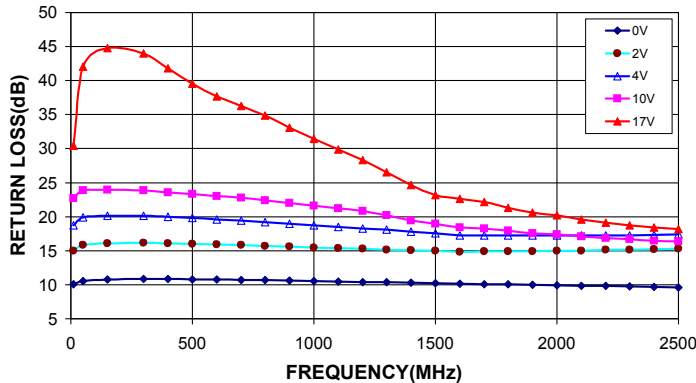
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ATTENUATION Vs. INPUT POWER  
OVER CONTROL VOLTAGES AT 1000MHz @ V+=3V



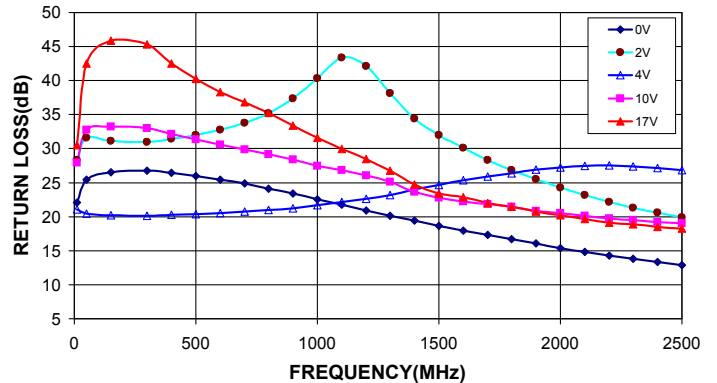
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ATTENUATION Vs. INPUT POWER  
OVER CONTROL VOLTAGES AT 1000MHz @ V+=5V



**ZX73-2500+**  
INPUT RETURN LOSS Vs. FREQUENCY  
OVER CONTROL VOLTAGES @ V+=3V



**ZX73-2500+**  
INPUT RETURN LOSS Vs. FREQUENCY  
OVER CONTROL VOLTAGES @ V+=5V

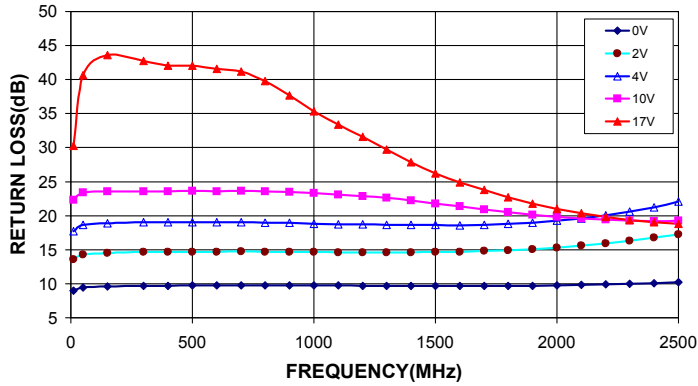


**Notes**

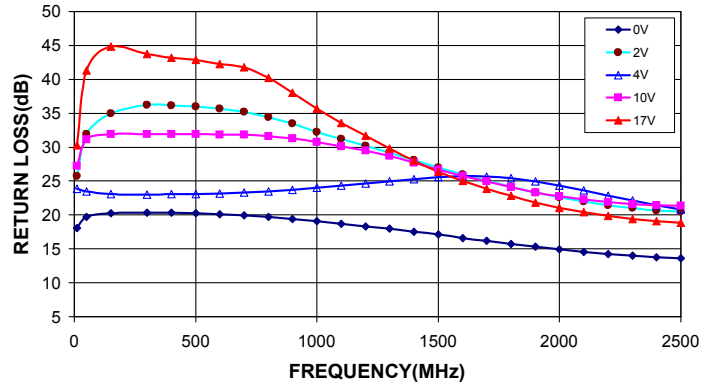
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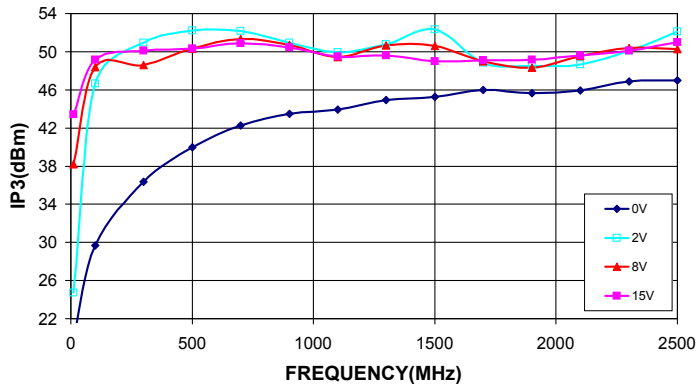
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**OUTPUT RETURN LOSS Vs. FREQUENCY**  
**OVER CONTROL VOLTAGES @ V+=3V**



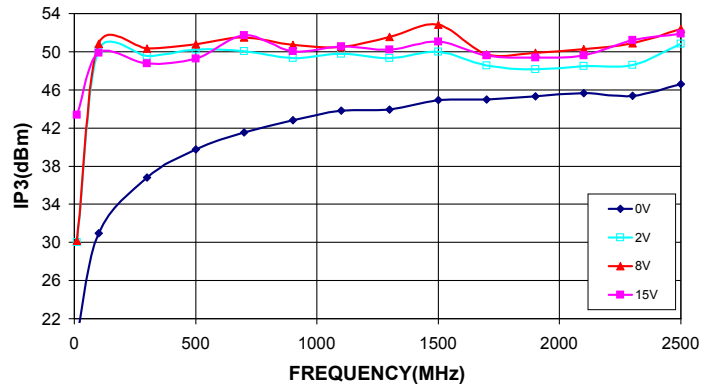
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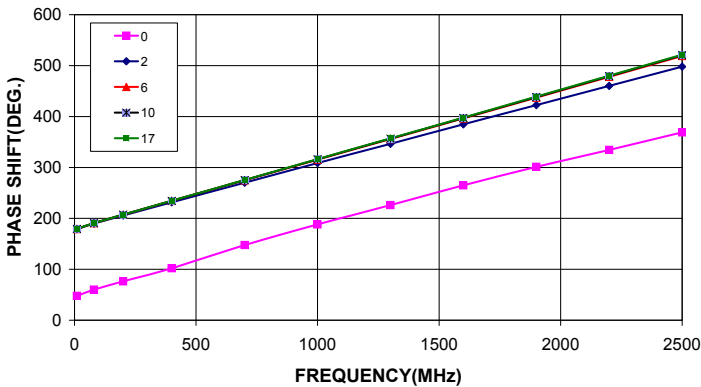
**ZX73-2500+**  
**IP3 Vs. FREQUENCY**  
**OVER CONTROL VOLTAGES @ V+=3V**



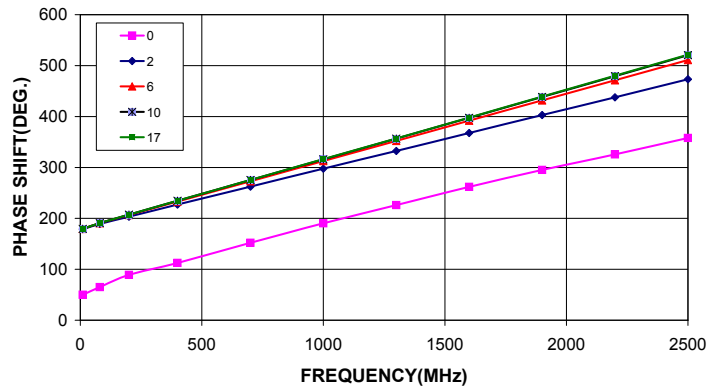
**ZX73-2500+**  
**IP3 Vs. FREQUENCY**  
**OVER CONTROL VOLTAGES @ V+=5V**



**ZX73-2500+**  
**PHASE SHIFT Vs. FREQUENCY**  
**OVER CONTROL VOLTAGES @ V+=3V**



**ZX73-2500+**  
**PHASE SHIFT Vs. FREQUENCY**  
**OVER CONTROL VOLTAGES @ V+=5V**



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