

**REPLACEMENT PART REFERENCE GUIDE, ZX60-2510M-S**

**AN-60-100**

ORIGINAL PART: ZX60-2510M-S  
 REPLACEMENT PART: ZX60-2510MA-S+

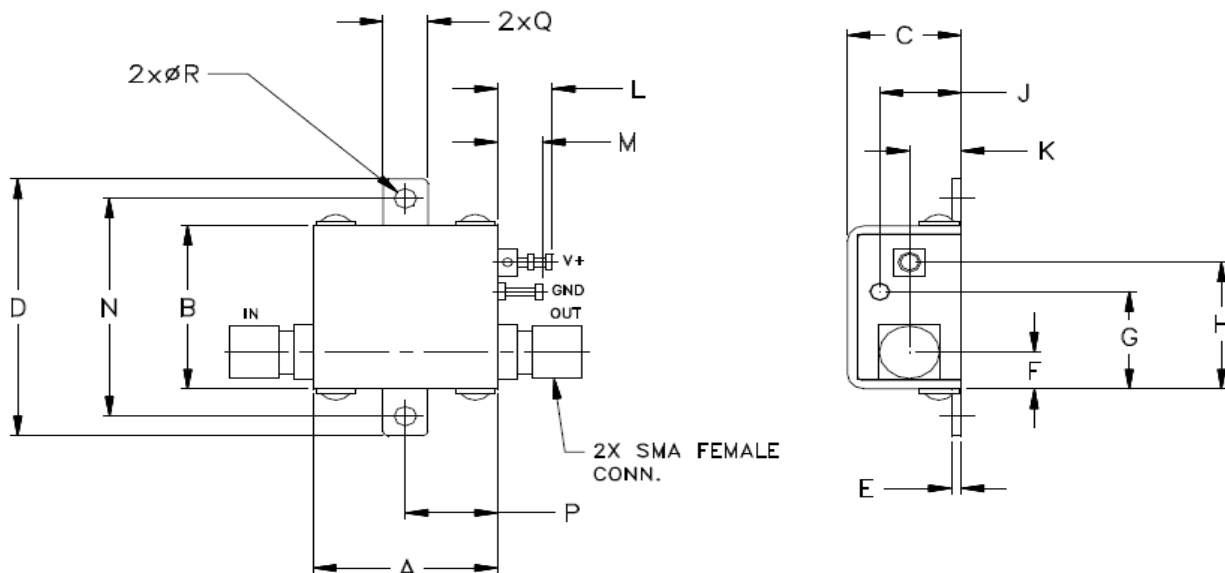


*Replacement Part has been judged by Mini-Circuits Engineering as a suitable replacement to Original Part*

**MECHANICAL DIMENSIONS & PCB LAND PATTERN**

ORIGINAL PART: ZX60-2510M-S	REPLACEMENT PART: ZX60-2510MA-S+
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**Case Style GC957 (No Change)**



CASE #.	A	B	C	D	E	F	G	H	J	K	L	M	N
GC957	0.74 (18.80)	.75 (19.05)	.46 (11.68)	1.18 (29.97)	.04 (1.02)	.17 (4.32)	.45 (11.43)	.59 (14.99)	.33 (8.38)	.21 (5.33)	.22 (5.59)	.18 (4.57)	1.00 (25.40)

CASE #.	P	Q	R	WT. GRAM
GC957	.37 (9.40)	.18 (4.57)	.106 (2.69)	23.0

Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015  
 Tolerance on hole size and interaxes dimensions to be ± .005.

**Marking**

**ZX60-2510M-S**

**Marking**

**ZX60-2510MA-S+**

Notes:  
 a. Suitability for model replacement within a particular system must be determined by and is solely the responsibility of the customer based on, among other things, electrical performance criteria, stimulus conditions, application, compatibility with other components and environmental conditions and stresses.

## CONCLUSION:

### 1) FORM-FIT-FUNCTIONAL COMPATIBLE<sub>a</sub>:

Replacement part is Form, Fit compatible. Following is a summary of changes/improvements:

Typical performance comparison: See paragraphs 2 to 5

Min/Max Specifications - see below:

Parameter	Original Part (ZX60-2510M-S)	Replacement Part (ZX60-2510MA-S+)
Gain-Min at 2 GHz (dB)	10.8dB(2.8V); 12.6dB (5V)	12.7dB(2.8V); 15dB (5V)

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## 2) PERFORMANCE COMPARISON<sub>a</sub> (TYPICAL), DC Voltage=5V:

Parameter	Freq. MHz	ZX60-2510M-S Original part Data of one unit	ZX60-2510MA-S+ Replacement part Data of 10 units		
			Min	Average	Max
Gain (dB)	500	10.3	14.2	14.3	14.4
	1000	12.6	15.0	15.1	15.2
	1500	12.9	15.1	15.2	15.4
	2000	12.7	15.0	15.1	15.2
	2500	11.6	14.6	14.7	14.8
Input Return Loss (dB)	500	9.8	7.9	8.1	8.2
	1000	14.7	16.2	16.6	17.2
	1500	19.2	18.8	19.3	20.1
	2000	27.3	18.3	18.8	19.5
	2500	30.7	17.9	18.7	19.4
Output Return Loss (dB)	500	10.4	14.3	14.5	14.9
	1000	22.6	22.0	23.1	24.1
	1500	14.7	18.7	19.4	20.2
	2000	12.1	16.4	16.9	17.3
	2500	11.0	14.8	15.2	15.5
Output Power at 1dB Compression (dBm)	500	17.3	19.9	20.0	20.2
	1000	16.2	20.0	20.1	20.3
	1500	15.4	19.7	19.8	20.0
	2000	15.1	19.0	19.1	19.3
	2500	14.7	18.3	18.5	18.7
Output IP3 (dBm)	500	-	32.4	32.8	33.0
	1000	-	32.1	32.4	32.6
	1500	-	31.5	31.7	31.9
	2000	-	30.5	30.8	31.0
	2500	-	29.8	30.0	30.2
NF (dB)	500	5.6	5.6	5.7	5.8
	1000	5.4	5.4	5.4	5.4
	1500	5.4	5.3	5.4	5.4
	2000	5.4	5.3	5.3	5.3
	2500	5.4	5.3	5.4	5.4
Directivity (Isolation - Gain) (dB)	500	28.7	33.9	34.3	34.8
	1000	21.8	29.5	29.7	29.9
	1500	18.9	24.5	24.7	24.9
	2000	17.4	22.0	22.3	22.5
	2500	17.4	21.0	21.1	21.2
DC Current (mA)	DC	69.0	81.3	82.6	84.8

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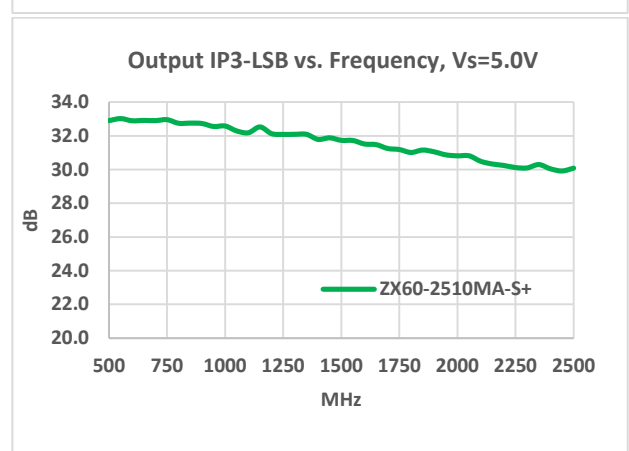
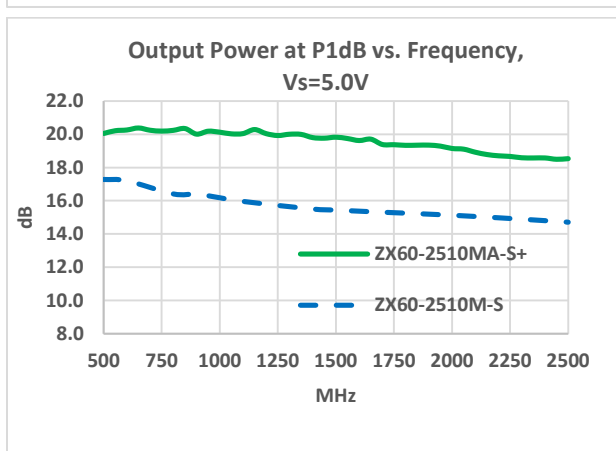
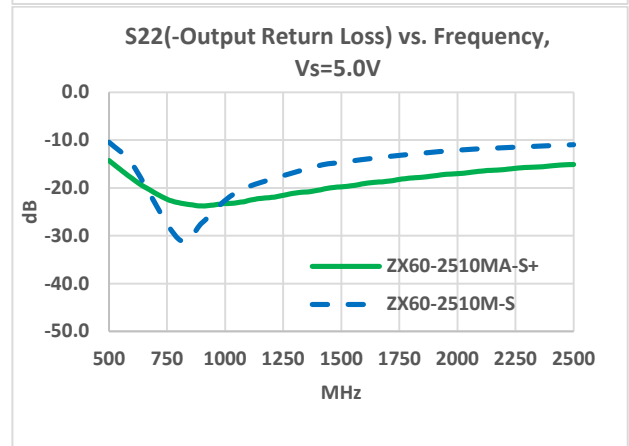
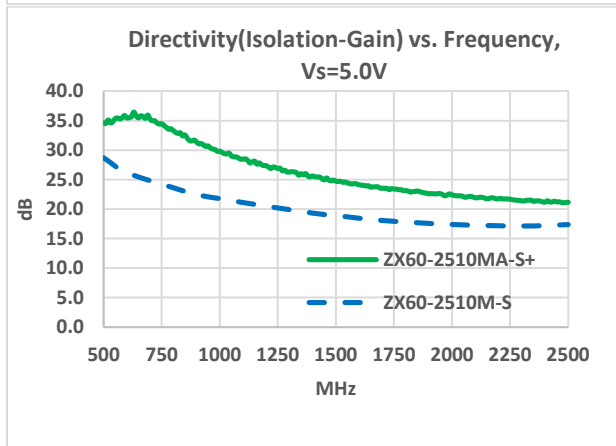
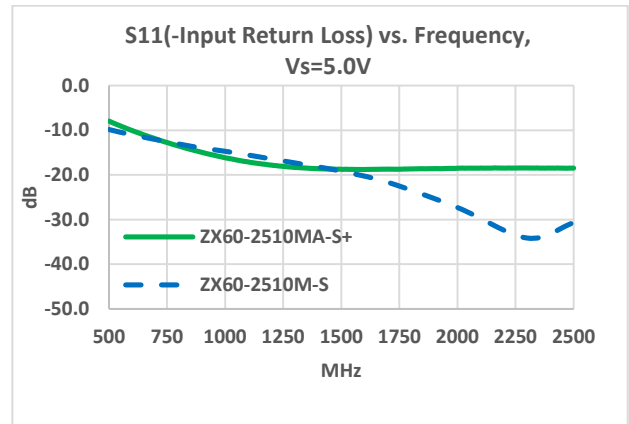
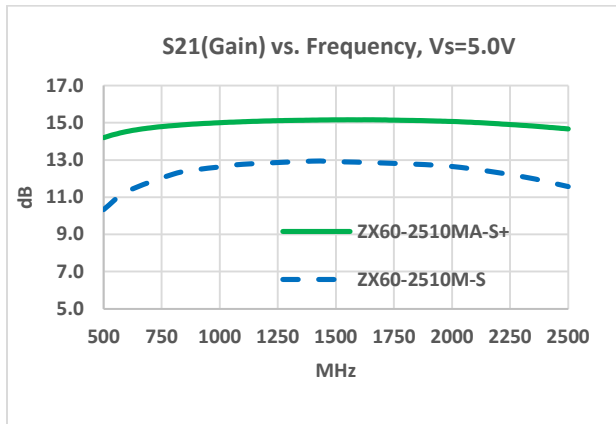
### 3) PERFORMANCE COMPARISON<sub>a</sub> (TYPICAL), DC Voltage=2.8V:

Parameter	Freq. MHz	ZX60-2510M-S Original part Data of one unit	ZX60-2510MA-S+ Replacement part Data of 10 units		
			Min	Average	Max
Gain (dB)	500	9.1	12.6	12.7	12.8
	1000	11.2	13.1	13.2	13.3
	1500	11.2	13.0	13.1	13.3
	2000	10.8	12.7	12.9	12.9
	2500	9.7	12.2	12.3	12.4
Input Return Loss (dB)	500	10.0	8.2	8.4	8.5
	1000	15.1	17.1	17.5	18.2
	1500	20.0	21.3	22.3	23.6
	2000	25.7	21.5	22.3	23.5
	2500	24.3	20.6	21.6	22.9
Output Return Loss (dB)	500	9.5	13.3	13.5	14.0
	1000	22.9	18.9	19.6	20.9
	1500	15.9	18.5	19.3	20.2
	2000	12.6	17.4	18.1	18.6
	2500	11.1	16.6	17.3	17.9
Output Power at 1dB Compression (dBm)	500	13.2	11.3	11.6	11.9
	1000	13.6	12.3	12.6	12.8
	1500	13.1	12.5	12.8	13.0
	2000	12.7	12.6	12.8	13.1
	2500	12.5	12.6	12.8	13.1
Output IP3 (dBm)	500	-	23.3	23.7	24.0
	1000	-	23.9	24.2	24.4
	1500	-	24.0	24.3	24.5
	2000	-	24.0	24.3	24.5
	2500	-	24.0	24.3	24.5
NF (dB)	500	5.7	5.7	5.8	5.8
	1000	5.5	5.4	5.5	5.6
	1500	5.5	5.4	5.5	5.5
	2000	5.5	5.4	5.4	5.5
	2500	5.6	5.5	5.5	5.5
Directivity (Isolation - Gain) (dB)	500	30.1	36.8	37.6	38.6
	1000	22.8	28.7	28.9	29.0
	1500	19.7	24.5	24.7	24.8
	2000	18.1	22.3	22.5	22.7
	2500	17.8	21.2	21.4	21.6
DC Current (mA)	DC	63.0	76.6	77.8	79.6

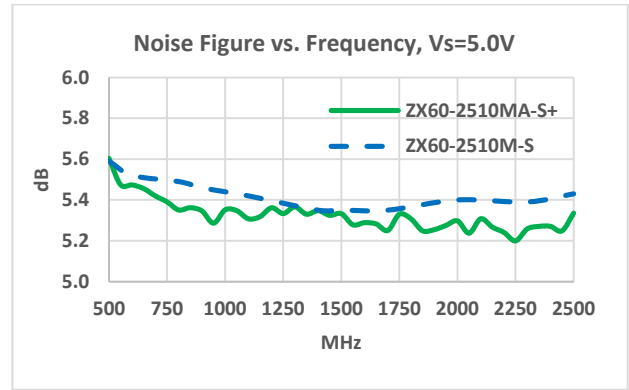
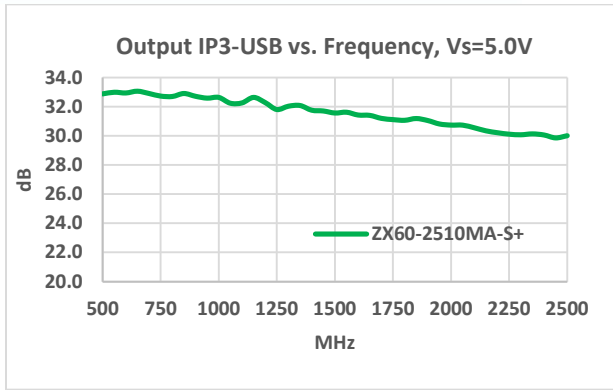
Notes:  
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## 4) PERFORMANCE COMPARISON CURVES<sub>a</sub> (TYPICAL), DC Supply=5V:

— Data of Replacement Part  
- - - Data of Original Part

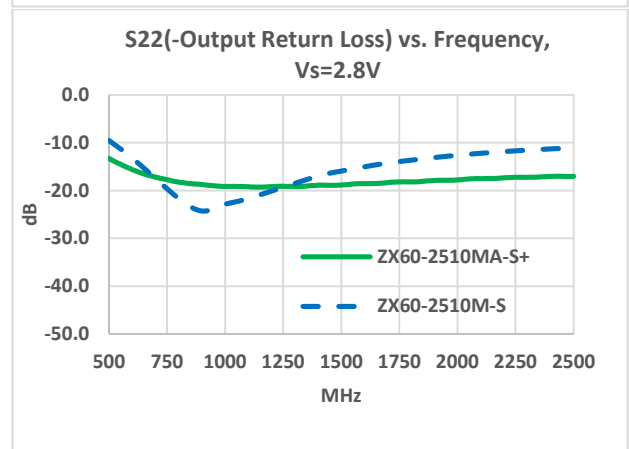
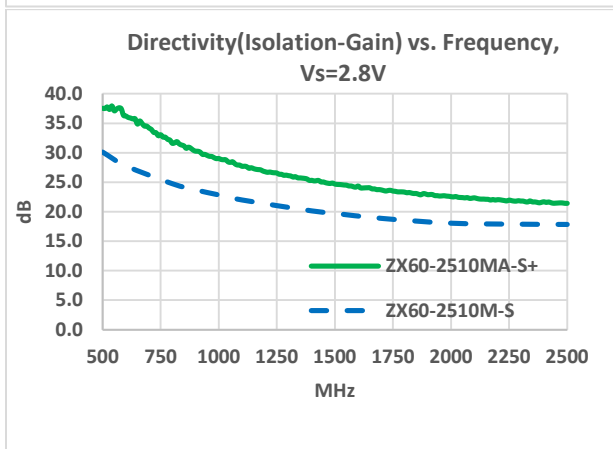
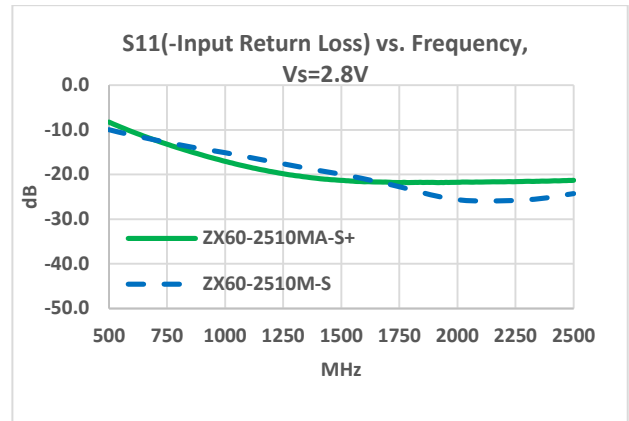
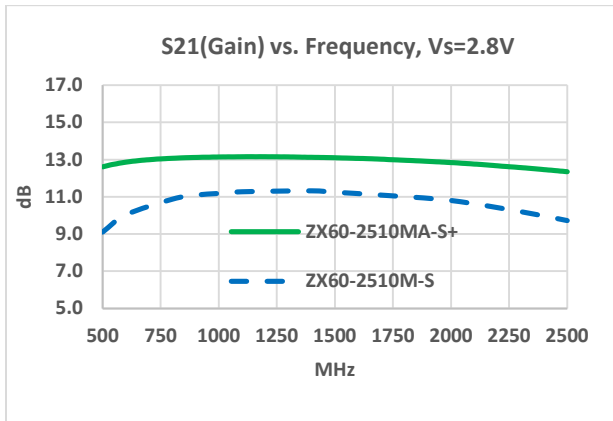


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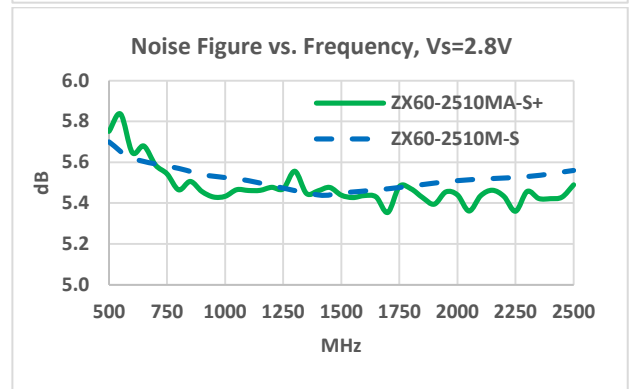
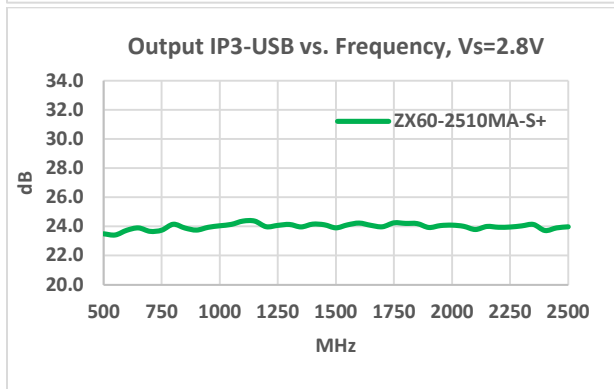
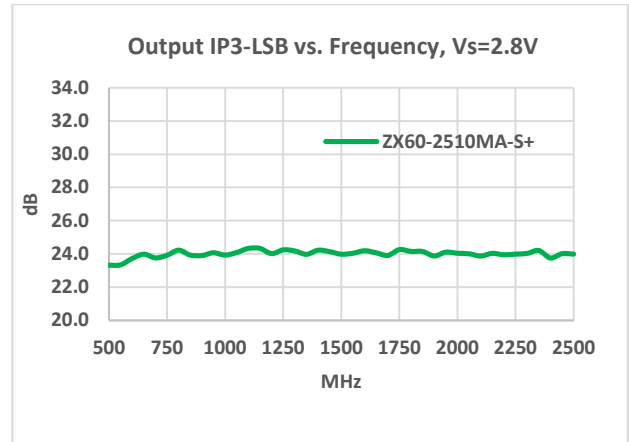
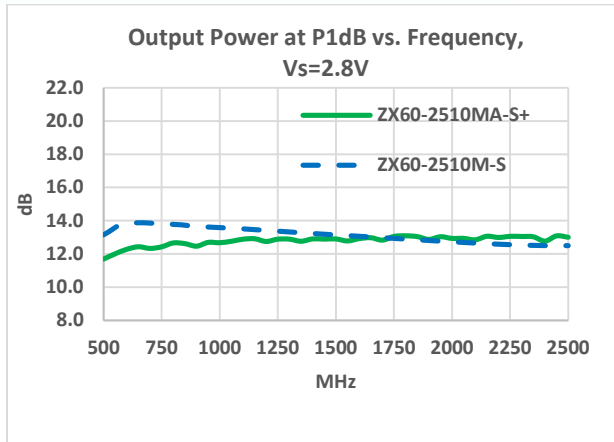


## 5) PERFORMANCE COMPARISON CURVES<sub>a</sub> (TYPICAL), DC Supply=2.8V:

— Data of Replacement Part  
- - - Data of Original Part



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## IMPORTANT NOTICE

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