

REPLACEMENT PART REFERENCE GUIDE, ZX60-2522M-S+

AN-60-102

ORIGINAL PART: ZX60-2522M-S+
 REPLACEMENT PART: ZX60-2522MA-S+

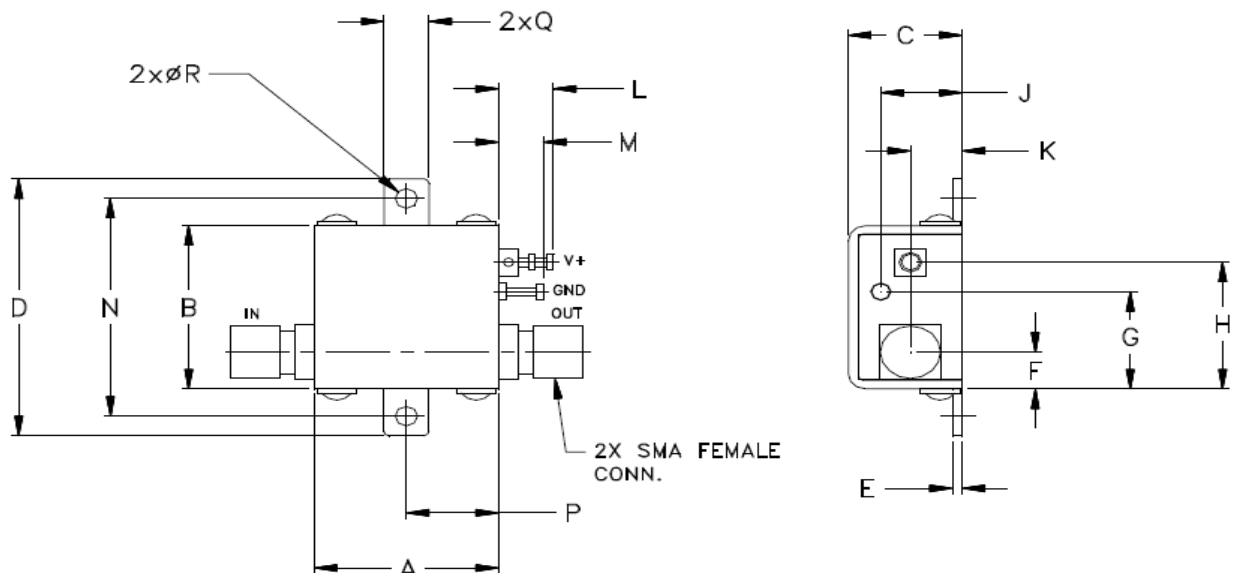


Replacement Part has been judged by Mini-Circuits Engineering as a suitable replacement to Original Part

MECHANICAL DIMENSIONS & PCB LAND PATTERN

| | |
|------------------------------|----------------------------------|
| ORIGINAL PART: ZX60-2522M-S+ | REPLACEMENT PART: ZX60-2522MA-S+ |
|------------------------------|----------------------------------|

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

ZX60-2522M-S+

Marking

ZX60-2522MA-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_a**:

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 (ZX60-2522M-S+) | Replacement Part (ZX60-2522MA-S+) |
|------------------------|----------------------------------|--------------------------------------|
| Gain-Min at 2 GHz (dB) | 20.8dB(2.8V); 23.5dB (5V) | 21.1dB(2.8V); 24.2dB (5V) |

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2) PERFORMANCE COMPARISON_a (TYPICAL), DC Voltage=5V:

| Parameter | Freq. MHz | ZX60-2522M-S+ Original part Data of one unit | ZX60-2522MA-S+ Replacement part Data of 10 units | | |
|---------------------------------------|-----------|--|--|---------|-------|
| | | | Min | Average | Max |
| Gain (dB) | 500 | 18.8 | 22.4 | 22.6 | 23.0 |
| | 1000 | 22.6 | 24.9 | 25.1 | 25.4 |
| | 1500 | 23.7 | 25.1 | 25.2 | 25.4 |
| | 2000 | 23.5 | 24.2 | 24.4 | 24.5 |
| | 2500 | 21.3 | 22.5 | 22.7 | 22.9 |
| Input Return Loss (dB) | 500 | 7.4 | 6.0 | 6.0 | 6.1 |
| | 1000 | 20.8 | 14.1 | 14.4 | 14.9 |
| | 1500 | 22.1 | 17.6 | 18.3 | 20.1 |
| | 2000 | 29.4 | 17.7 | 18.3 | 20.6 |
| | 2500 | 15.9 | 15.5 | 16.1 | 17.7 |
| Output Return Loss (dB) | 500 | 9.1 | 11.2 | 11.4 | 11.9 |
| | 1000 | 24.9 | 25.9 | 28.1 | 29.5 |
| | 1500 | 14.1 | 21.3 | 23.8 | 25.5 |
| | 2000 | 10.9 | 18.2 | 19.4 | 20.5 |
| | 2500 | 10.9 | 17.5 | 18.5 | 19.4 |
| Output Power at 1dB Compression (dBm) | 500 | 19.6 | 20.7 | 20.9 | 20.9 |
| | 1000 | 19.6 | 20.5 | 20.8 | 20.9 |
| | 1500 | 18.6 | 20.1 | 20.5 | 20.6 |
| | 2000 | 17.8 | 19.3 | 20.0 | 20.3 |
| | 2500 | 17.4 | 19.0 | 19.7 | 20.1 |
| Output IP3 (dBm) | 500 | - | 33.5 | 33.9 | 34.4 |
| | 1000 | - | 32.1 | 32.6 | 33.4 |
| | 1500 | - | 30.8 | 31.4 | 32.5 |
| | 2000 | - | 30.1 | 30.7 | 31.5 |
| | 2500 | - | 29.6 | 30.2 | 30.8 |
| NF (dB) | 500 | 3.3 | 3.1 | 3.1 | 3.2 |
| | 1000 | 2.9 | 2.6 | 2.7 | 2.7 |
| | 1500 | 3.0 | 2.6 | 2.6 | 2.6 |
| | 2000 | 3.1 | 2.6 | 2.6 | 2.6 |
| | 2500 | 3.2 | 2.7 | 2.7 | 2.7 |
| Directivity (Isolation - Gain) (dB) | 500 | 23.7 | 22.0 | 22.9 | 23.3 |
| | 1000 | 19.2 | 19.3 | 19.9 | 20.3 |
| | 1500 | 15.9 | 16.0 | 16.3 | 16.5 |
| | 2000 | 15.6 | 14.2 | 14.7 | 15.1 |
| | 2500 | 16.4 | 14.1 | 14.7 | 15.0 |
| DC Current (mA) | DC | 86.0 | 87.4 | 96.7 | 100.7 |

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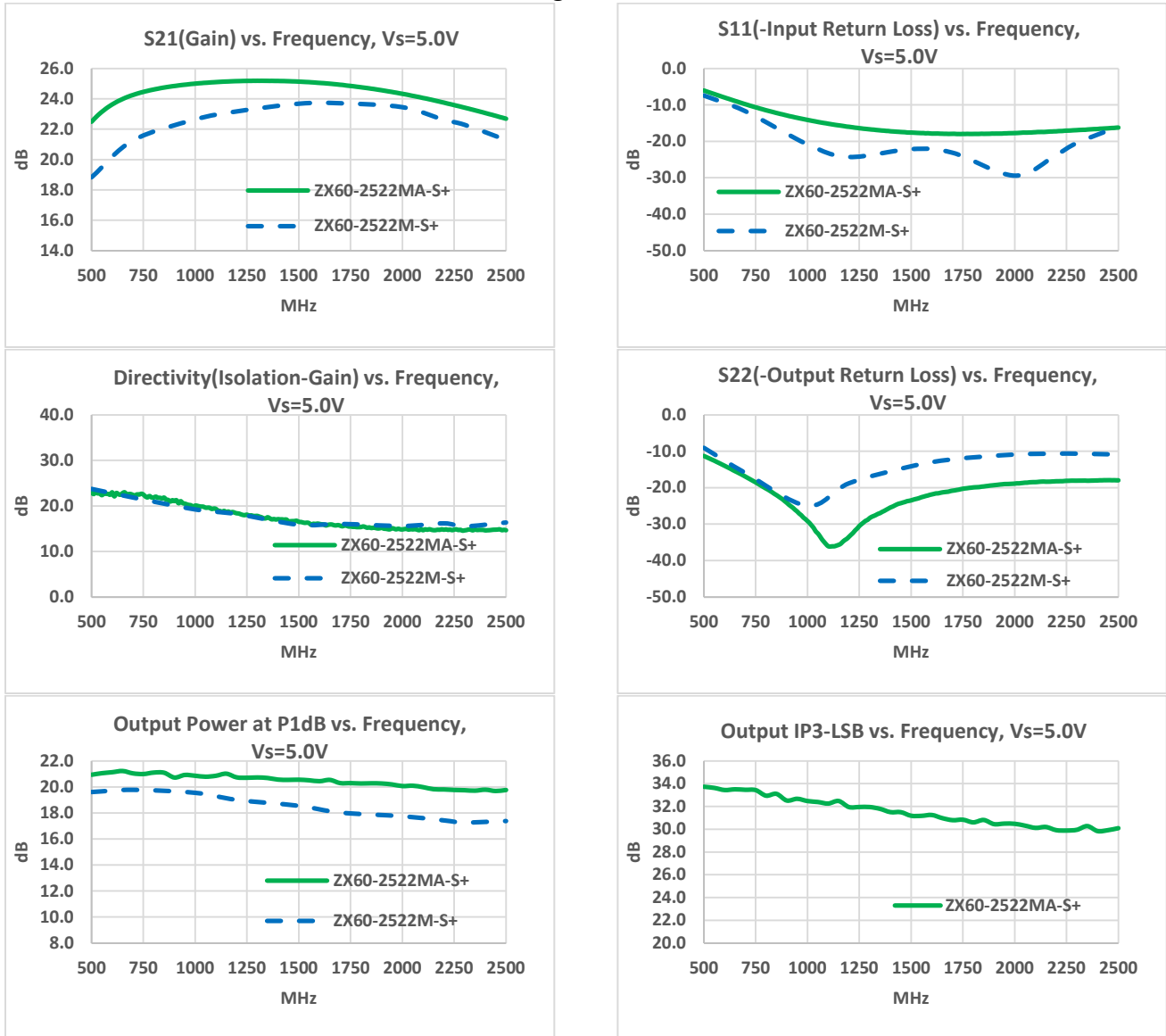
3) PERFORMANCE COMPARISON_a (TYPICAL), DC Voltage=2.8V:

| Parameter | Freq. MHz | ZX60-2522M-S+ Original part Data of one unit | ZX60-2522MA-S+ Replacement part Data of 10 units | | |
|---------------------------------------|-----------|--|--|---------|------|
| | | | Min | Average | Max |
| Gain (dB) | 500 | 17.4 | 20.6 | 20.8 | 21.5 |
| | 1000 | 20.4 | 22.3 | 22.6 | 23.1 |
| | 1500 | 20.9 | 22.0 | 22.3 | 22.8 |
| | 2000 | 20.8 | 21.1 | 21.4 | 21.8 |
| | 2500 | 19.4 | 19.8 | 20.0 | 20.4 |
| Input Return Loss (dB) | 500 | 7.1 | 6.5 | 6.6 | 6.7 |
| | 1000 | 16.8 | 13.9 | 14.1 | 14.6 |
| | 1500 | 24.9 | 16.3 | 17.0 | 18.4 |
| | 2000 | 28.3 | 16.6 | 17.3 | 19.2 |
| | 2500 | 15.7 | 15.4 | 15.9 | 17.5 |
| Output Return Loss (dB) | 500 | 8.9 | 10.2 | 10.4 | 11.1 |
| | 1000 | 14.7 | 16.0 | 16.5 | 18.6 |
| | 1500 | 10.5 | 16.1 | 16.5 | 17.8 |
| | 2000 | 8.8 | 15.5 | 15.8 | 16.3 |
| | 2500 | 8.3 | 15.5 | 15.9 | 16.3 |
| Output Power at 1dB Compression (dBm) | 500 | 14.9 | 11.7 | 12.3 | 13.4 |
| | 1000 | 15.5 | 12.4 | 12.9 | 13.8 |
| | 1500 | 15.1 | 12.5 | 13.1 | 13.8 |
| | 2000 | 14.7 | 12.9 | 13.4 | 14.1 |
| | 2500 | 15.0 | 13.3 | 13.7 | 14.2 |
| Output IP3 (dBm) | 500 | - | 23.2 | 23.9 | 25.1 |
| | 1000 | - | 23.6 | 24.2 | 24.9 |
| | 1500 | - | 23.8 | 24.2 | 24.8 |
| | 2000 | - | 24.2 | 24.6 | 25.0 |
| | 2500 | - | 24.7 | 25.0 | 25.3 |
| NF (dB) | 500 | 3.4 | 3.1 | 3.2 | 3.3 |
| | 1000 | 2.9 | 2.7 | 2.7 | 2.8 |
| | 1500 | 3.0 | 2.7 | 2.7 | 2.7 |
| | 2000 | 3.2 | 2.7 | 2.7 | 2.8 |
| | 2500 | 3.3 | 2.8 | 2.8 | 2.8 |
| Directivity (Isolation - Gain) (dB) | 500 | 27.1 | 25.2 | 25.8 | 26.2 |
| | 1000 | 20.2 | 20.0 | 20.3 | 20.6 |
| | 1500 | 17.0 | 16.5 | 16.8 | 17.2 |
| | 2000 | 15.5 | 14.9 | 15.1 | 15.4 |
| | 2500 | 15.5 | 14.4 | 14.6 | 14.9 |
| DC Current (mA) | DC | 80.0 | 81.9 | 90.3 | 93.6 |

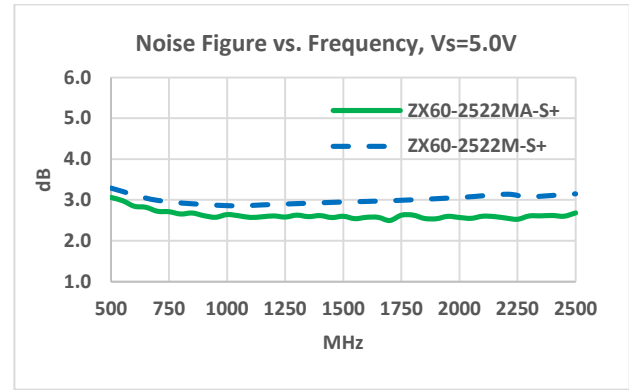
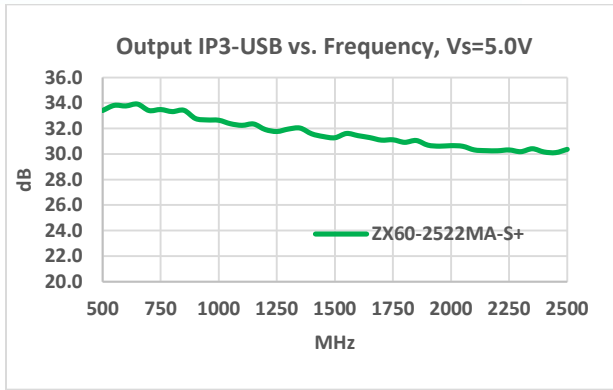
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4) PERFORMANCE COMPARISON CURVES^a (TYPICAL), DC Supply=5V:

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

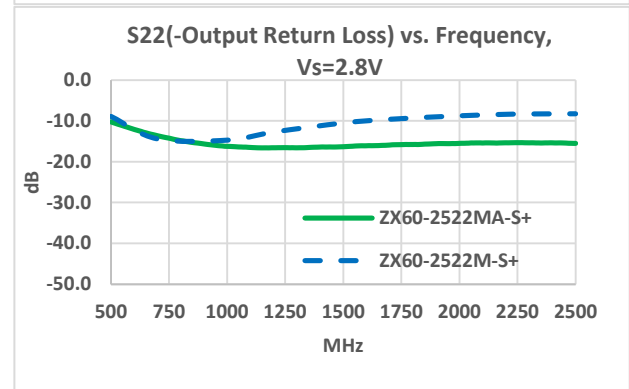
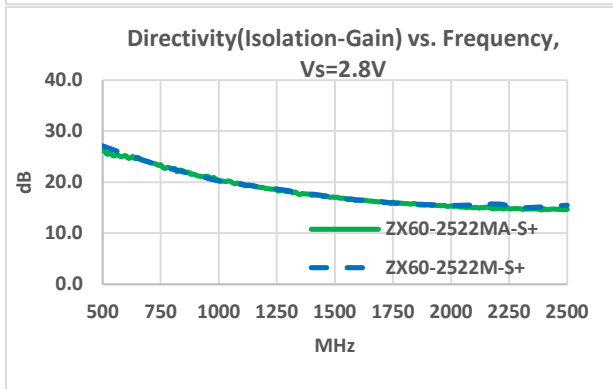
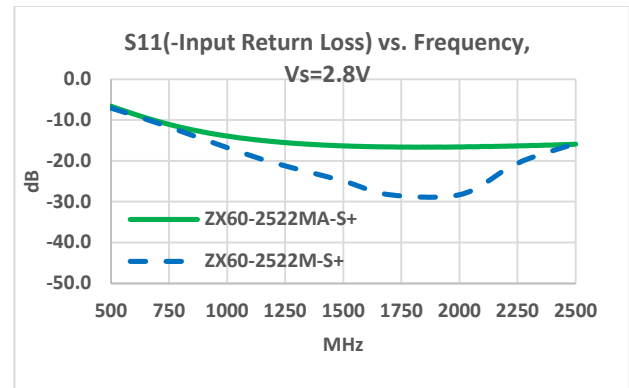
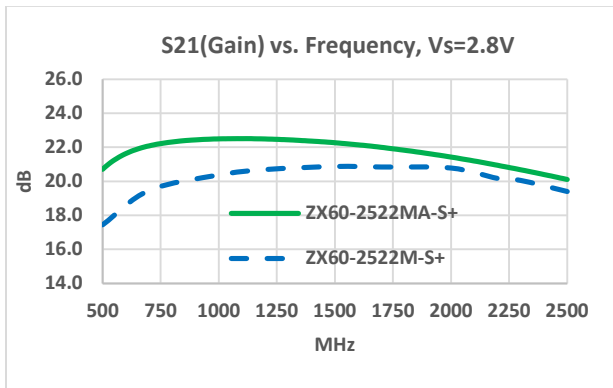


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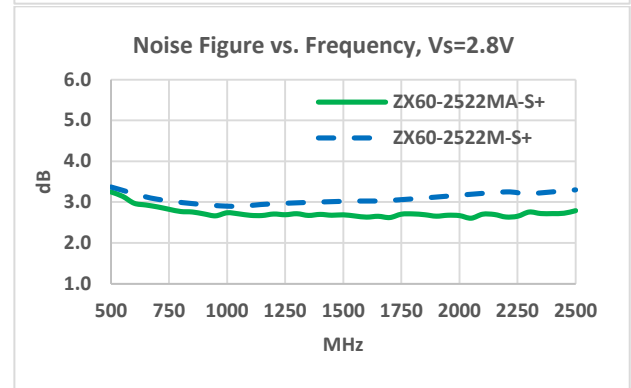
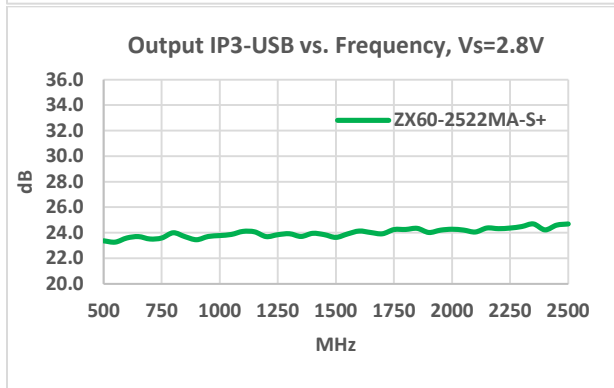
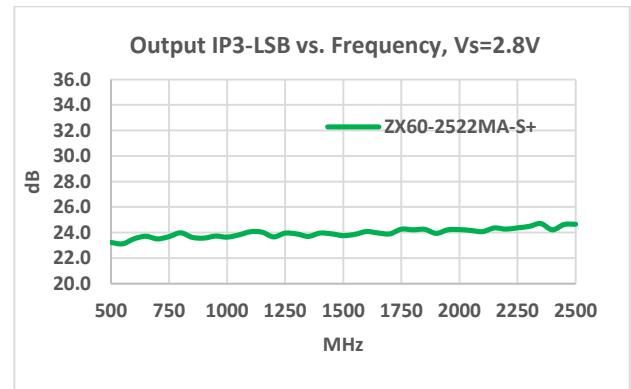
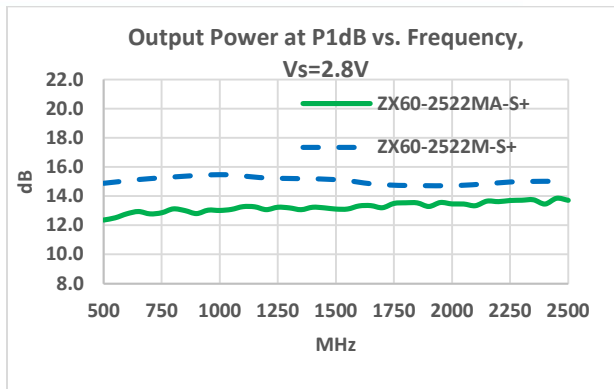


5) PERFORMANCE COMPARISON CURVES^a (TYPICAL), DC Supply=2.8V:

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



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