

**PART NUMBER, VSWA2-63DR+:**

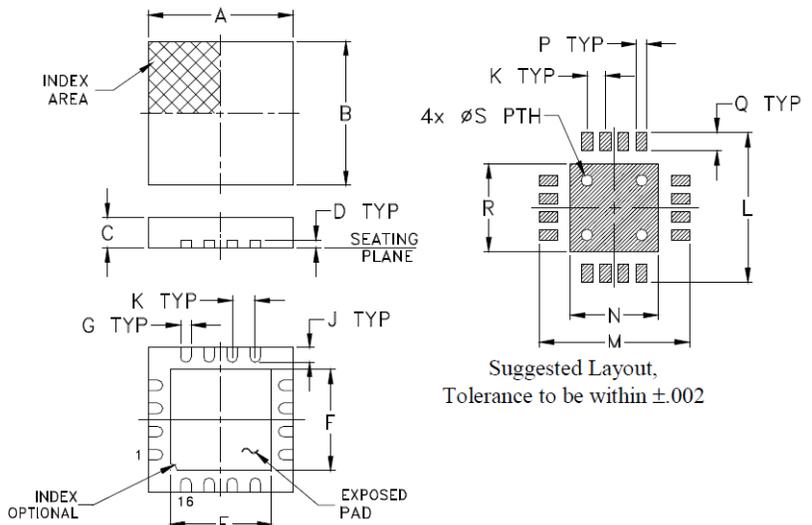
**AN-80-010**



Due to obsolescence of the dice used in Current part (Current Fab), a new set of dice in a nearly identical package (Future Fab/Replacement Fab) has been qualified and has replaced the current part.

Performance of Part with Replacement Die set has been judged by Mini-Circuits Engineering as a close alternative to current part<sup>a</sup>

**MECHANICAL DIMENSIONS & PCB LAND PATTERN**

CURRENT FAB:	FUTURE FAB:																		
<b>Case Style:</b> DG1235	<b>Case Style:</b> DG1235-1 (minor dimensional changes as below)																		
<b>MECHANICAL DRAWING &amp; PCB LAND PATTERN</b>																			
																			
<p><b>Inches (mm)</b></p> <table border="1"> <thead> <tr> <th>E &amp; F</th> <th>J</th> <th>Q</th> </tr> </thead> <tbody> <tr> <td>0.085</td> <td>0.022</td> <td>0.035</td> </tr> <tr> <td>(2.16)</td> <td>(0.56)</td> <td>(0.89)</td> </tr> </tbody> </table>	E & F	J	Q	0.085	0.022	0.035	(2.16)	(0.56)	(0.89)	<p><b>Inches (mm)</b></p> <table border="1"> <thead> <tr> <th>E &amp; F</th> <th>J</th> <th>Q</th> </tr> </thead> <tbody> <tr> <td>0.106</td> <td>0.016</td> <td>0.031</td> </tr> <tr> <td>(2.70)</td> <td>(0.40)</td> <td>(0.79)</td> </tr> </tbody> </table> <p>Note:</p> <ol style="list-style-type: none"> <li>1) Dimensions not shown are the same as in DG1235</li> <li>2) Mini-Circuits experiment shows part can fit into existing PCB Land pattern</li> </ol>	E & F	J	Q	0.106	0.016	0.031	(2.70)	(0.40)	(0.79)
E & F	J	Q																	
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Notes:

- Suitability for model with new die 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:**

Following are summary of changes:

FORM: No change.

FIT: Mechanical Dimensions of Device and customer PCB Land Pattern as noted in previous page.

FUNCTION: Following are the changes

Parameter	CURRENT FAB	REPLACEMENT PART
Control Voltage: High V <sub>DD</sub> = + 4 to +5V	2.7V min & V <sub>DD</sub> max	3.5V min to V <sub>DD</sub> max
Supply Current	12μA Typ.	50uA Typ.

Typical performance differences, see paragraphs 2 to 4.

Replacement part is qualified to the current part as a close alternative <sup>a</sup>.

Notes:

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2) PERFORMANCE COMPARISON, TYPICAL AT VDD=+5V at 25°C<sub>a</sub>

Parameter	MHz		Future Fab	Current Fab
	From	To	Average	Average
Insertion Loss	0.3	500	0.74	0.83
RF-COM to RF1	500	2000	0.77	0.87
	2000	3000	0.83	0.89
	3000	4000	0.90	0.97
	4000	6000	1.04	1.10
Insertion Loss	0.3	500	0.70	0.75
RF-COM to RF2	500	2000	0.72	0.78
	2000	3000	0.77	0.80
	3000	4000	0.83	0.89
	4000	6000	1.01	1.03
Isolation	0.3	500	76.9	70.5
RF-COM to RF1	500	2000	70.4	69.5
	2000	3000	66.7	75.1
	3000	4000	58.6	67.3
	4000	6000	55.6	65.8
Isolation	0.3	500	69.7	82.3
RF-COM to RF2	500	2000	62.9	68.2
	2000	3000	61.9	60.4
	3000	4000	57.6	56.7
	4000	6000	52.6	55.8
Isolation	0.3	500	70.9	71.1
RF1 ro RF2 (RF1 ON)	500	1000	59.6	58.3
	1000	2000	56.0	52.6
	2000	3000	52.2	48.3
	3000	4000	49.8	45.8
	4000	6000	46.4	44.0
Isolation	0.3	500	78.1	80.6
RF1 ro RF2 (RF2 ON)	500	1000	61.2	59.1
	1000	2000	56.8	53.4
	2000	3000	52.3	48.8
	3000	4000	49.6	45.6
	4000	6000	45.9	42.5
Return Loss	0.3	500	23.6	23.5
RF COM (RF1 ON)	500	2000	23.7	24.1
	2000	3000	22.4	25.4
	3000	4000	18.7	17.3
	4000	6000	19.0	18.6
Return Loss	0.3	500	23.4	23.2
RF COM (RF2 ON)	500	2000	23.3	24.1
	2000	3000	23.0	22.0
	3000	4000	18.9	15.7
	4000	6000	20.2	17.8
Return Loss	0.3	500	23.6	23.6
RF1 ON	500	2000	22.6	25.1
	2000	3000	21.2	24.1
	3000	4000	22.8	25.7
	4000	6000	20.3	25.0
Return Loss	0.3	500	23.3	23.1
RF2 ON	500	2000	22.5	22.3
	2000	3000	22.2	22.1
	3000	4000	26.3	22.5
	4000	6000	21.2	22.8
Return Loss	500	2000	23.8	15.7
RF1 OFF	2000	3000	33.1	16.4
	3000	4000	22.4	20.3
	4000	6000	23.0	21.2
Return Loss	500	2000	23.0	15.1
RF2 OFF	2000	3000	34.4	16.4
	3000	4000	24.8	20.8
	4000	6000	26.5	27.4

Notes:

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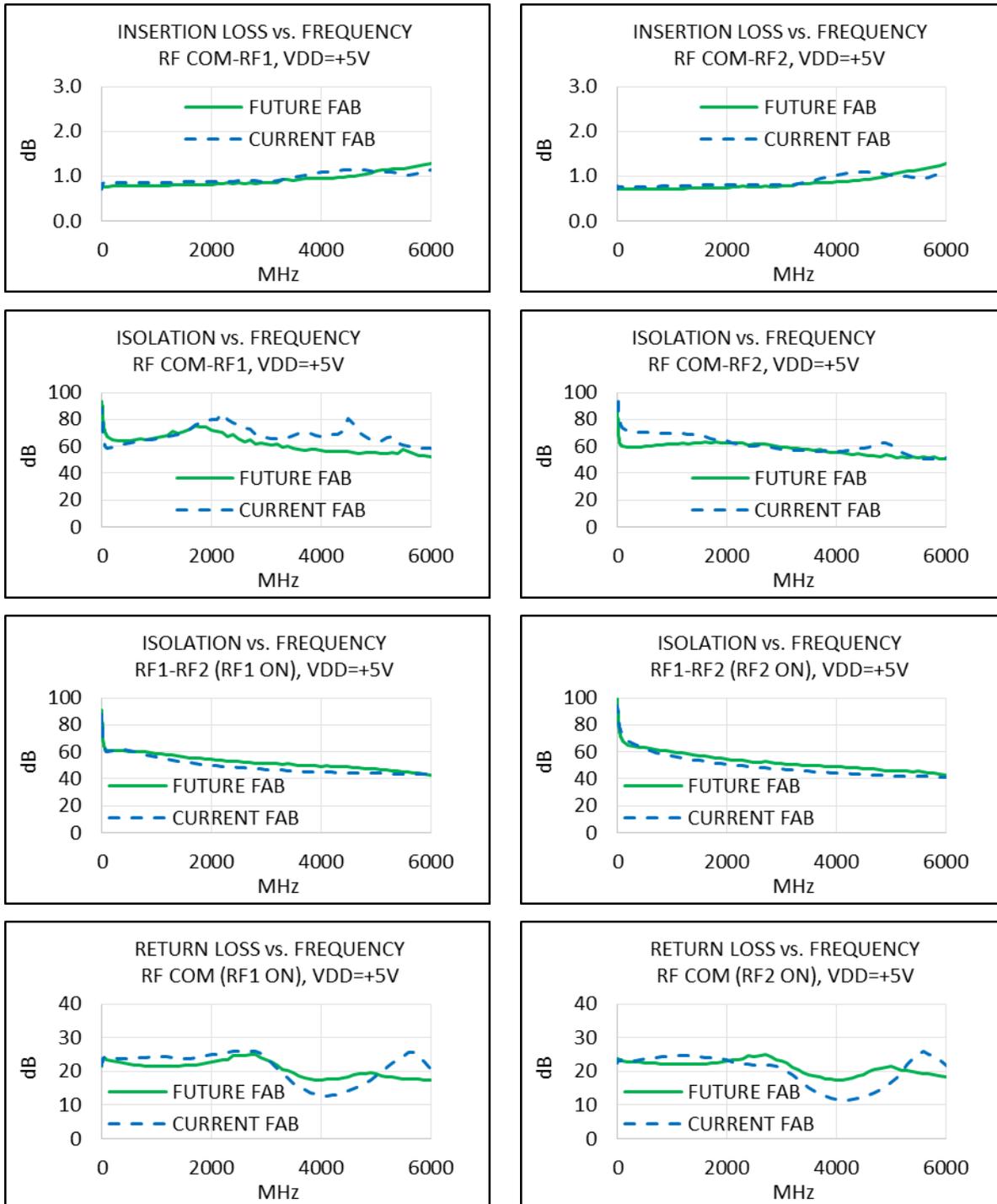
3) PERFORMANCE COMPARISON, TYPICAL AT  $V_{DD}=+3V$  at  $25^{\circ}C_a$

Parameter	MHz		Future Fab	Current Fab
	From	To	Average	Average
Insertion Loss	0.3	500	0.73	0.82
RF-COM to RF1	500	2000	0.76	0.86
	2000	3000	0.82	0.88
	3000	4000	0.89	0.99
	4000	6000	1.05	1.14
Insertion Loss	0.3	500	0.67	0.74
RF-COM to RF2	500	2000	0.70	0.77
	2000	3000	0.75	0.79
	3000	4000	0.81	0.91
	4000	6000	1.01	1.07
Isolation	0.3	500	76.6	80.2
RF-COM to RF1	500	2000	69.6	67.8
	2000	3000	67.1	60.6
	3000	4000	59.1	57.0
	4000	6000	54.7	55.8
Isolation	0.3	500	69.4	69.4
RF-COM to RF2	500	2000	62.7	69.3
	2000	3000	62.1	77.0
	3000	4000	57.7	68.2
	4000	6000	52.9	65.2
Isolation	0.3	500	70.3	71.1
RF1 ro RF2 (RF1 ON)	500	1000	59.5	58.3
	1000	2000	56.0	52.6
	2000	3000	52.3	48.3
	3000	4000	49.9	45.9
4000	6000	46.3	44.3	
Isolation	0.3	500	76.9	79.2
RF1 ro RF2 (RF2 ON)	500	1000	61.0	59.1
	1000	2000	56.7	53.3
	2000	3000	52.5	48.8
	3000	4000	49.9	45.7
4000	6000	46.0	42.8	
Return Loss	0.3	500	23.7	23.7
RF COM (RF1 ON)	500	2000	24.1	24.4
	2000	3000	23.0	25.7
	3000	4000	18.8	16.4
	4000	6000	19.2	17.5
Return Loss	0.3	500	23.8	23.4
RF COM (RF2 ON)	500	2000	23.8	24.5
	2000	3000	23.4	22.5
	3000	4000	18.9	15.1
	4000	6000	20.3	16.2
Return Loss	0.3	500	23.6	23.8
RF1 ON	500	2000	23.2	26.0
	2000	3000	22.2	26.3
	3000	4000	23.8	25.7
	4000	6000	21.2	25.9
Return Loss	0.3	500	23.7	23.3
RF2 ON	500	2000	23.1	22.9
	2000	3000	23.2	24.1
	3000	4000	28.0	22.4
	4000	6000	22.4	21.2
Return Loss	500	2000	23.7	16.0
RF1 OFF	2000	3000	32.0	16.9
	3000	4000	22.0	21.8
	4000	6000	22.5	22.8
Return Loss	500	2000	22.7	15.4
RF2 OFF	2000	3000	33.4	17.0
	3000	4000	24.5	22.2
	4000	6000	26.0	27.4

Notes:

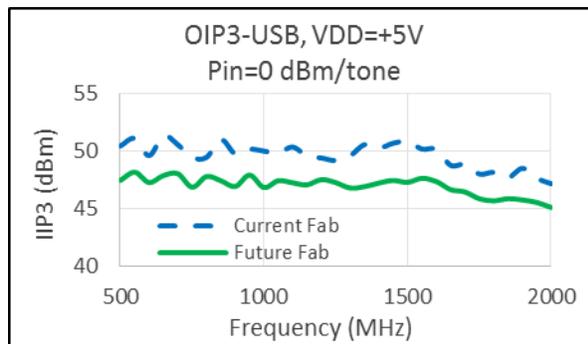
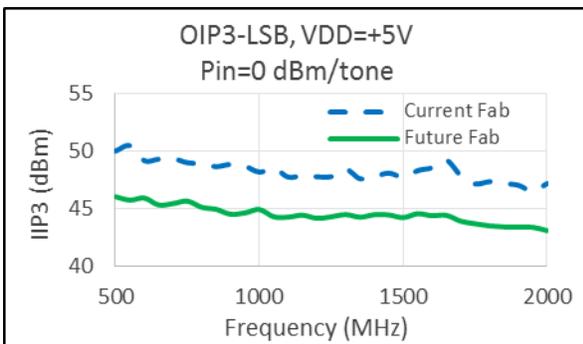
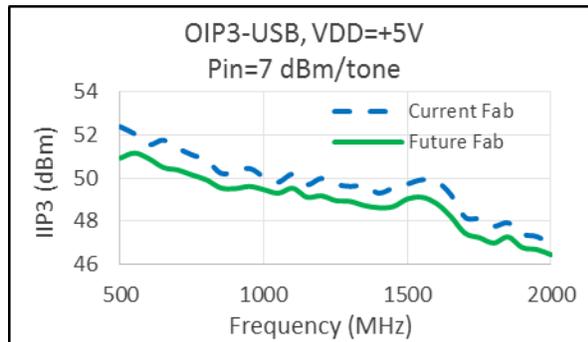
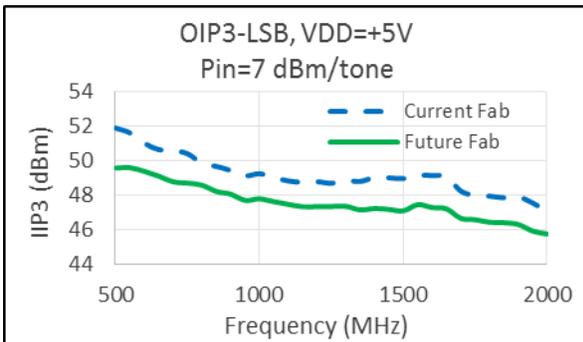
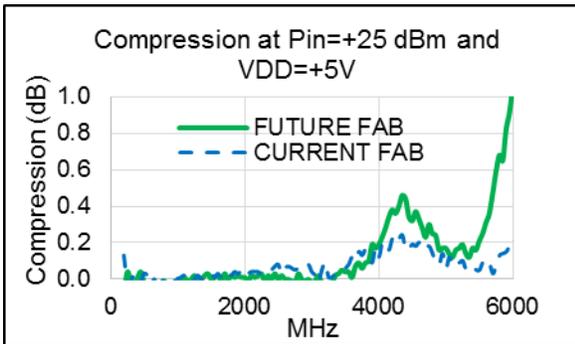
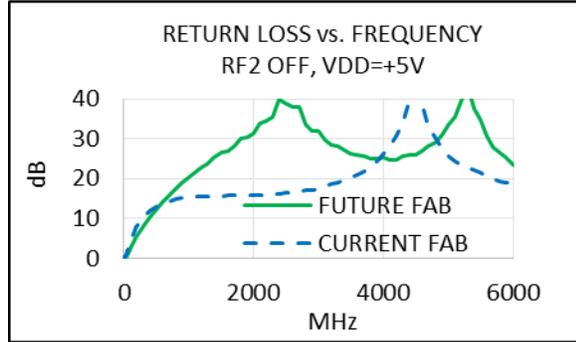
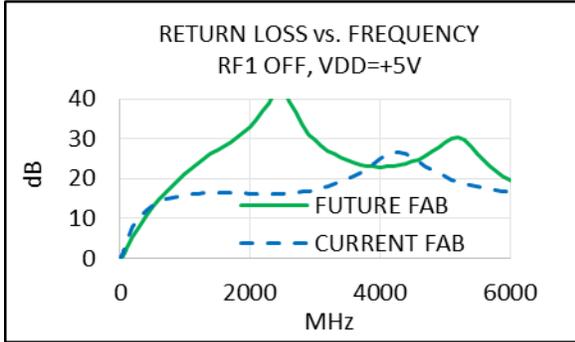
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4) PERFORMANCE COMPARISON CURVES <sub>a</sub>, CURRENT FAB vs. FUTURE FAB: **VDD=+5V**



Notes:

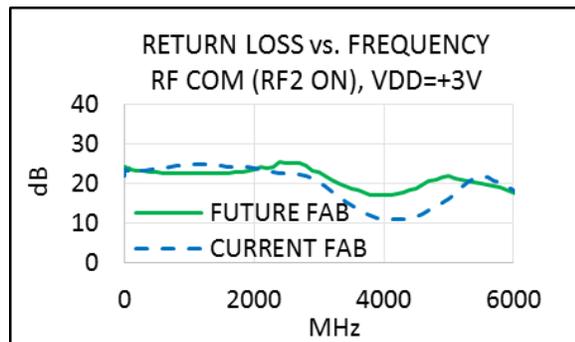
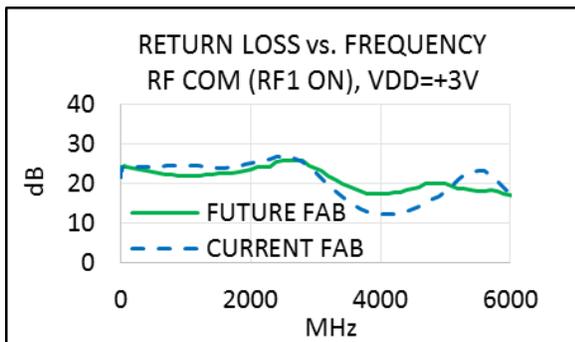
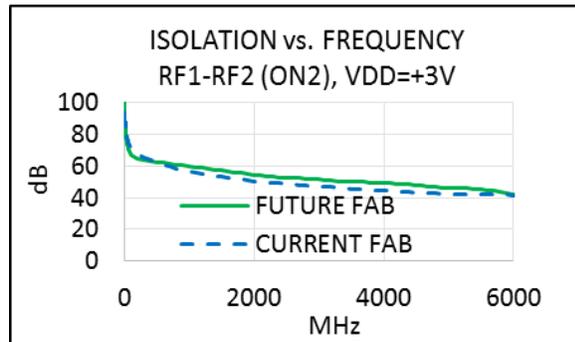
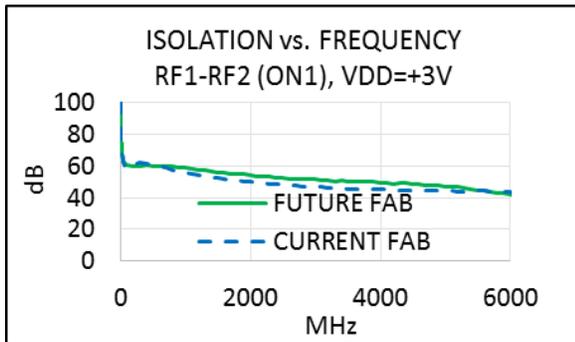
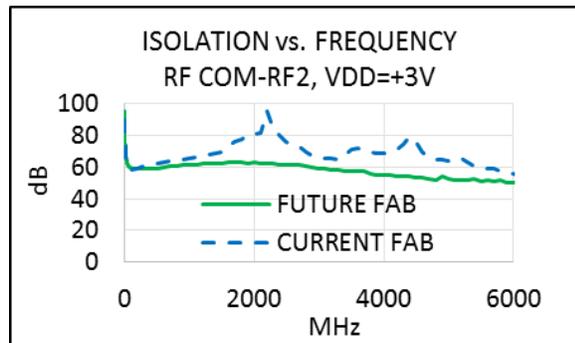
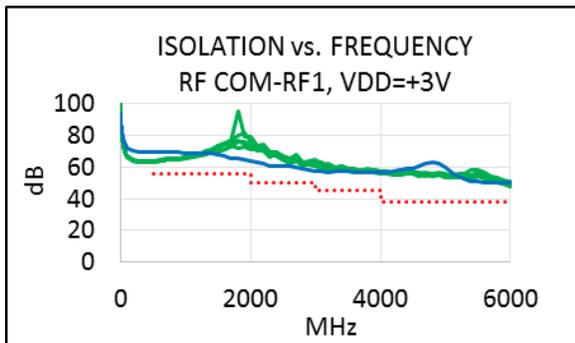
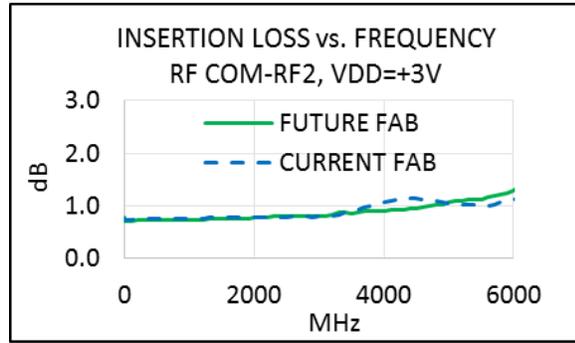
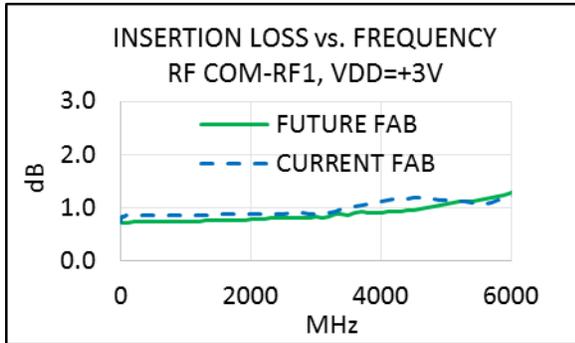
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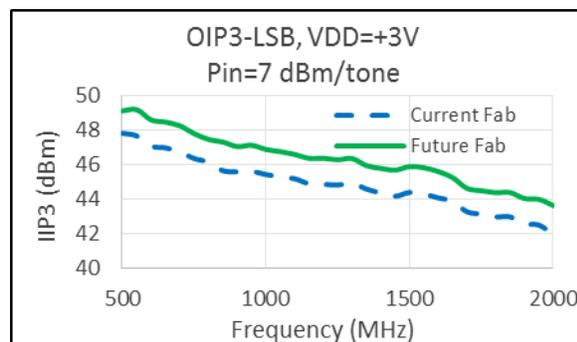
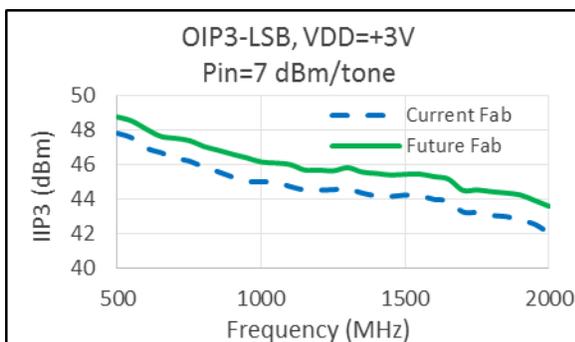
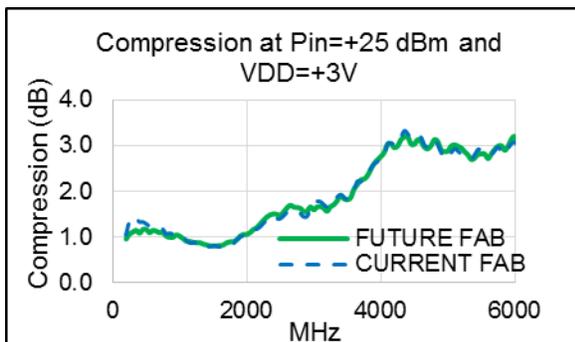
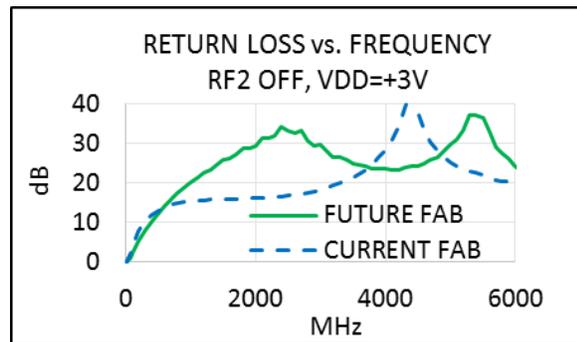
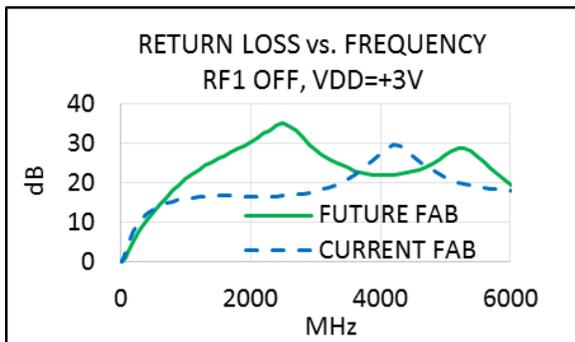
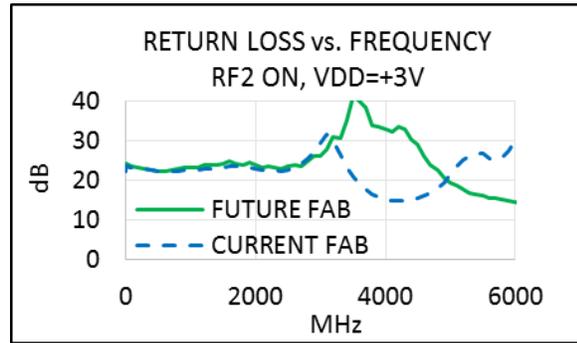
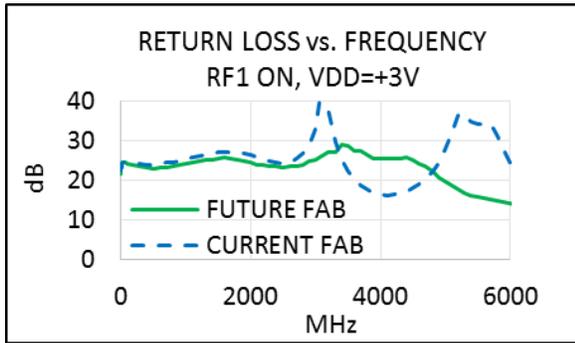
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5) PERFORMANCE COMPARISON CURVES<sub>a</sub>, CURRENT FAB vs. FUTURE FAB: VDD=+3V



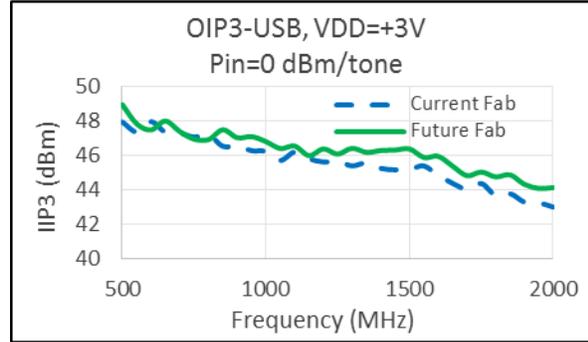
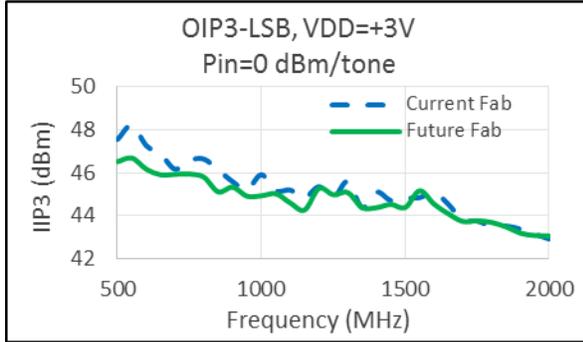
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