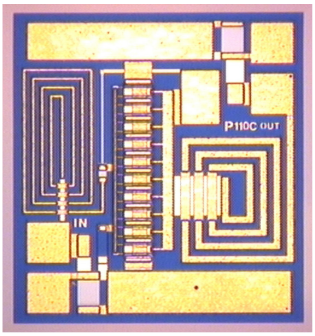
EMA110

0.5 – 3.0 GHz High Linearity Power MMIC

FEATURES

- **0.5 – 3.0 GHz BANDWIDTH**
- **27.0dBm TYPICAL OUTPUT POWER**
- **-45dBc OIMD3 @ 17dBm EACH TONE Pout**
- **11.0 dB TYPICAL POWER GAIN**
- **SINGLE BIAS SUPPLY**
- **100% DC TESTED**



Dimension: 760um X 700um

ELECTRICAL CHARACTERISTICS (T_b = 25°C)

Caution! ESD sensitive device.

SYMBOL	PARAMETER/TEST CONDITIONS[1]	MIN	TYP	MAX	UNITS
F	Operating Frequency Range	0.5		3.0	GHz
P_{1dB}	Power at 1dB Compression V_{DD} = 8.0V, F = 2.4G	26.0	27.0		dBm
Gss	Small Signal Gain V_{DD} = 8.0V, F = 2.4G	10.0	11.0		dB
IMD3	Output 3rd Order Intermodulation Distortion @Δf=10MHz, Each Tone Pout 16dBm V_{DD} = 8.0V, F = 2.4G		-45	-42	dBc
RL_{IN}	Input Return Loss V_{DD} = 8.0V		-12	-8	dB
RL_{OUT}	Output Return Loss V_{DD} = 8.0V		-12	-8	dB
I_{DD}	Drain Current	170	240	270	mA
R_{TH}	Thermal Resistance[1]		35		°C/W

Note: 1. Overall Rth depends on die attach.

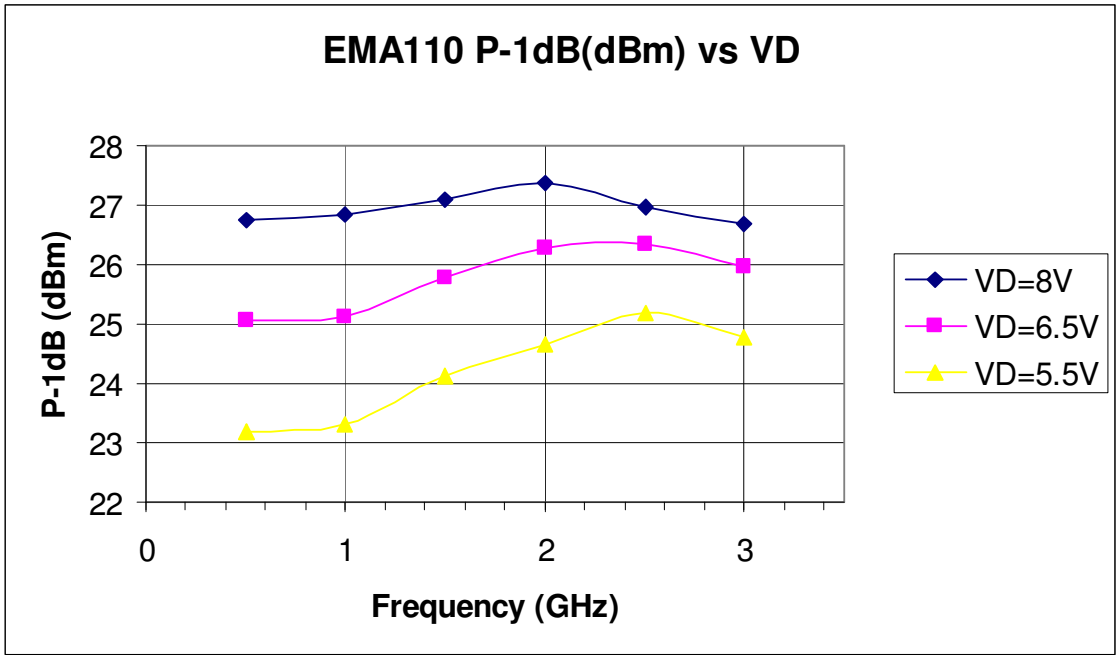
MAXIMUM RATING (T_b = 25 °C)

Symbol	Characteristic	ABSOLUTE[1]	OPERATING[2]
V_{DD}	Drain-Source Voltage	8.5 V	8 V
V_{GG}	Gate-Source Voltage	-4 V	-3 V
I_{DD}	Drain Current	Idss	Idss
I_{GSF}	Forward Gate Current	67 mA	10 mA
P_{IN}	Input Power	@ 3dB compression	@ 3dB compression
T_{CH}	Channel Temperature	175 °C	150 °C
T_{STG}	Storage Temperature	-65 °C to +175 °C	-65 °C to +175 °C
P_T	Total Power Dissipation	3.3 W	2.8 W

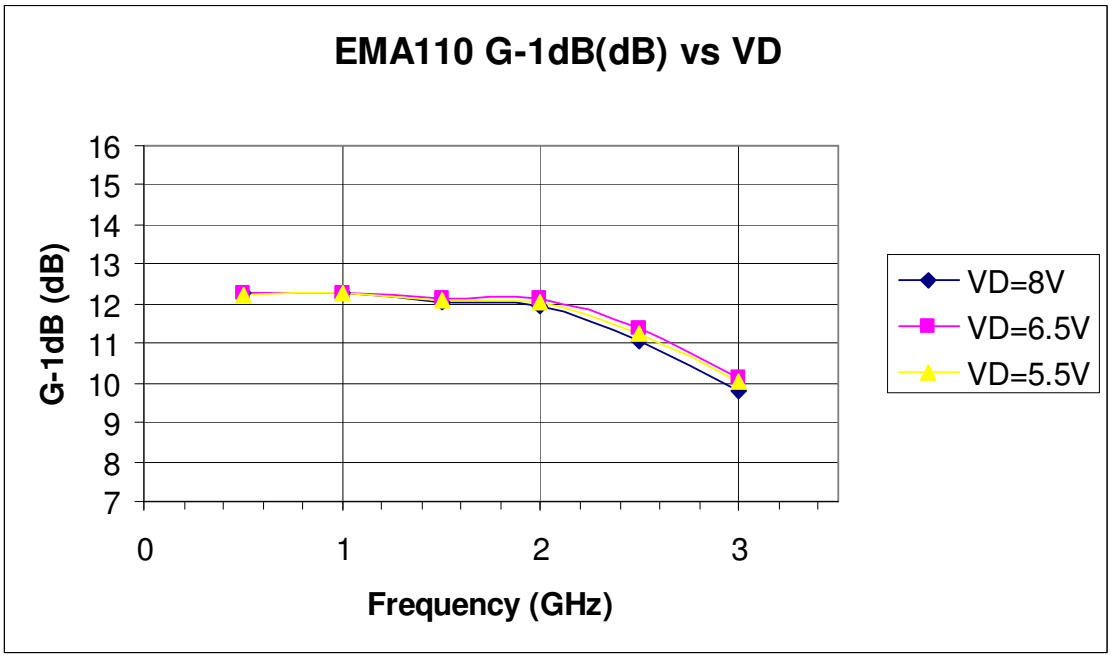
Note: 1. Exceeding any of the above ratings may result in permanent damage.
2. Exceeding any of the above ratings may reduce MTTF below design goals.

Typical Performance:

1. **P-1 VS VD**

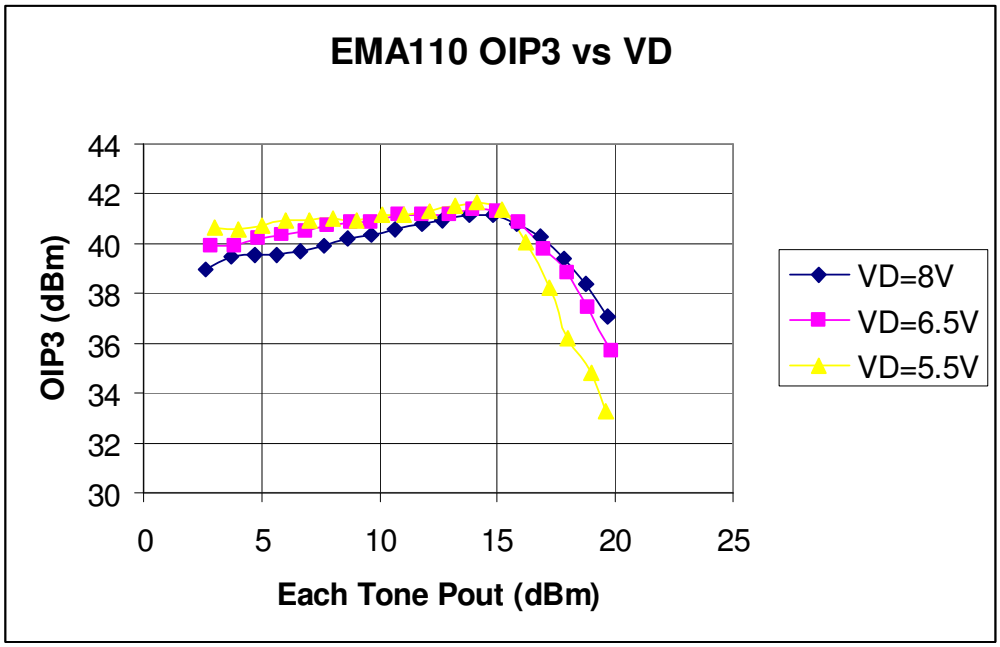


2. **G-1 VS VD**

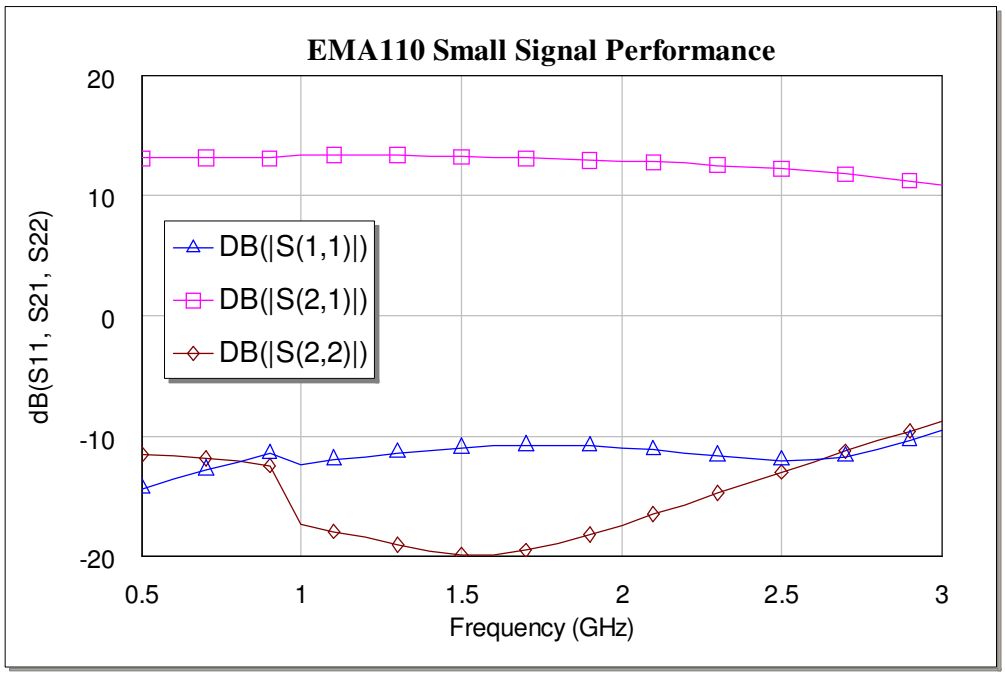


Typical Performance:

3. OIP3 VS VD



4. Small Signal Performance



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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.