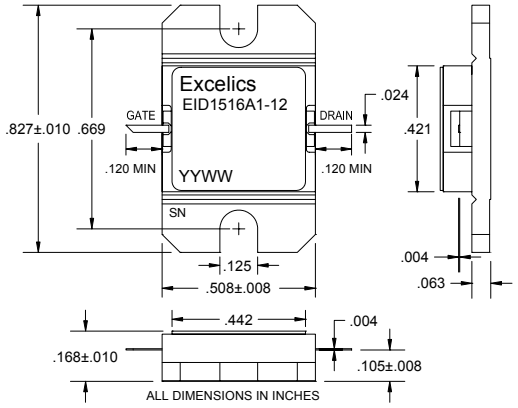
EID1516A1-12

UPDATED: 07/12/2007

15.7-16.3 GHz 12-Watt Internally Matched Power FET

FEATURES

- **15.7-16.3 GHz Bandwidth**
- **Input/Output Impedance Matched to 50 Ohms**
- **+41.0 dBm Output Power at 1dB Compression**
- **5.5 dB Power Gain at 1dB Compression**
- **24% Power Added Efficiency**
- **Hermetic Metal Flange Package**
- **100% Tested for DC, RF, and R_{TH}**



Caution! ESD sensitive device.

ELECTRICAL CHARACTERISTICS (T_a = 25°C)

SYMBOL	PARAMETERS/TEST CONDITIONS[1]	MIN	TYP	MAX	UNITS
P_{1dB}	Output Power at 1dB Compression f = 15.7-16.3GHz V_{DS} = 10 V, I_{DSQ} ≈ 3200mA	40.0	41.0		dBm
G_{1dB}	Gain at 1dB Compression f = 15.7-16.3GHz V_{DS} = 10 V, I_{DSQ} ≈ 3200mA	4.5	5.5		dB
ΔG	Gain Flatness f = 15.7-16.3GHz V_{DS} = 10 V, I_{DSQ} ≈ 3200mA			±0.6	dB
PAE	Power Added Efficiency at 1dB Compression V_{DS} = 10 V, I_{DSQ} ≈ 3200mA f = 15.7-16.3GHz		24		%
Id_{1dB}	Drain Current at 1dB Compression f = 15.7-16.3GHz		3800	4300	mA
I_{DSS}	Saturated Drain Current V_{DS} = 3 V, V_{GS} = 0 V		6400	8000	mA
V_P	Pinch-off Voltage V_{DS} = 3 V, I_{DS} = 64 mA		-1.2	-2.5	V
R_{TH}	Thermal Resistance[2]		2.5	2.9	°C/W

Notes:
1. Tested with 50 Ohm gate resistor.
2. Overall Rth depends on case mounting.

ABSOLUTE MAXIMUM RATING[1,2]

SYMBOL	CHARACTERISTIC	VALUE
V_{DS}	Drain to Source Voltage	10 V
V_{GS}	Gate to Source Voltage	-4.5 V
I_{DS}	Drain Current	IDSS
I_{GSF}	Forward Gate Current	220 mA
P_{IN}	Input Power	@ 3dB compression
P_T	Total Power Dissipation	52 W
T_{CH}	Channel Temperature	175°C
T_{STG}	Storage Temperature	-65/+175°C

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.

UPDATED: 07/12/2007

15.7-16.3 GHz 12-Watt Internally Matched Power FET

DISCLAIMER

EXCELICS SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. EXCELICS DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN.

LIFE SUPPORT POLICY

EXCELICS SEMICONDUCTOR PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF EXCELICS SEMICONDUCTOR, INC. AS HERE IN:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
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