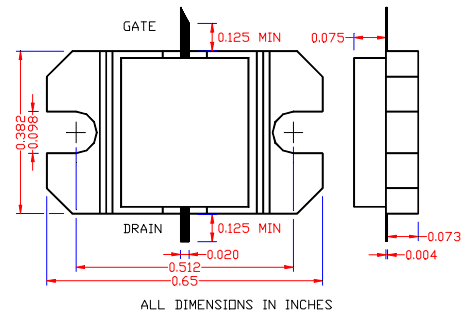


Not recommended for new designs. Contact factory. Effective 03/2003
18.7-19.7GHz, 1W Internally Matched Power FET

- 18.7-19.7GHz BANDWIDTH AND INPUT/OUTPUT IMPEDANCE MATCHED TO 50 OHM
- EIA FEATURES HIGH PAE(25% TYPICAL)
- EIB FEATURES HIGH IP3(43dBm TYPICAL)
- +30.0/+29.5dBm TYPICAL P_{1dB} OUTPUT POWER FOR EIA/EIB
- 6.5/5.5dB TYPICAL G_{1dB} POWER GAIN FOR EIA/EIB
- NON-HERMETIC METAL FLANGE PACKAGE



ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

SYMBOLS	PARAMETERS/TEST CONDITIONS	EIA1819-1P			EIB1819-1P			UNIT
		MIN	TYP	MAX	MIN	TYP	MAX	
P_{1dB}	Output Power at 1dB Compression $f=18.7-19.7\text{GHz}$ $V_{ds}=8\text{V}$, $I_{dsq}=0.5 I_{dss}(\text{EIA})$, $0.6 I_{dss}(\text{EIB})$	29	30.0		29.0	29.5		dBm
G_{1dB}	Gain at 1dB Compression $f=18.7-19.7\text{GHz}$ $V_{ds}=8\text{V}$, $I_{dsq}=0.5 I_{dss}(\text{EIA})$, $0.6 I_{dss}(\text{EIB})$	6.0	6.5		5.0	5.5		dB
PAE	Power Added Efficiency at 1dB compression $f=18.7-19.7\text{GHz}$ $V_{ds}=8\text{V}$, $I_{dsq}=0.5 I_{dss}(\text{EIA})$, $0.6 I_{dss}(\text{EIB})$		25			20		%
I_{d1dB}	Drain Current at 1dB Compression		440			425		mA
IP3	Output 3 rd Order Intercept Point $f=18.7-19.7\text{GHz}$ $V_{ds}=8\text{V}$, $I_{dsq}=0.5 I_{dss}(\text{EIA})$, $0.6 I_{dss}(\text{EIB})$		37			43*		dBm
I_{dss}	Saturated Drain Current $V_{ds}=3\text{V}$, $V_{gs}=0\text{V}$	550	720	850	550	720	850	mA
G_m	Transconductance $V_{ds}=3\text{V}$, $V_{gs}=0\text{V}$		760			360		mS
V_p	Pinch-off Voltage $V_{ds}=3\text{V}$, $I_{ds}=6\text{mA}$		-1.0	-2.5		-2.0	-3.5	V
BV_{gd}	Drain Breakdown Voltage $I_{gd}=2.4\text{mA}$	-13	-15			-15		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		16			16		$^\circ\text{C/W}$

*Typical -45dBc IM3 at $P_{out}=20\text{dBm/Tone}$

MAXIMUM RATINGS AT 25°C

SYMBOLS	PARAMETERS	ABSOLUTE ¹	CONTINUOUS ²
V_{ds}	Drain-Source Voltage	12V	8V
V_{gs}	Gate-Source Voltage	-8V	-3V
I_{ds}	Drain Current	I_{dss}	I_{dss}
I_{gsf}	Forward Gate Current	90mA	15mA
P_{in}	Input Power	32dBm	@ 3dB Compression
T_{ch}	Channel Temperature	175 $^\circ\text{C}$	150 $^\circ\text{C}$
T_{stg}	Storage Temperature	-65/175 $^\circ\text{C}$	-65/150 $^\circ\text{C}$
P_t	Total Power Dissipation	8.5W	7.1W

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.

Excelics Semiconductor, Inc., 310 De Guine Drive, Sunnyvale, CA 94085

Phone: (408) 737-1711 Fax: (408) 737-1868 Web Site: www.excelics.com