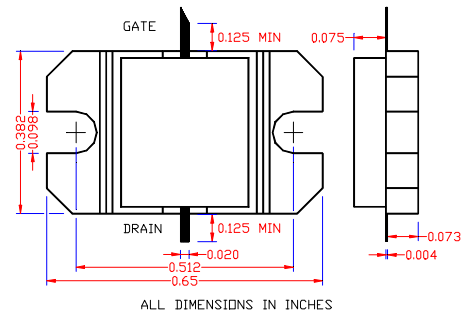


**Not recommended for new designs. Contact factory. Effective 03/2003**  
**18.7-19.7GHz, 1W Internally Matched Power FET**

- 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 $f=18.7-19.7\text{GHz}$ $V_{ds}=8\text{V}$ , $I_{dsq}=0.5 I_{dss}$ (EIA), $0.6 I_{dss}$ (EIB)	29	30.0		29.0	29.5		dBm
$G_{1dB}$	Gain at 1dB Compression $f=18.7-19.7\text{GHz}$ $V_{ds}=8\text{V}$ , $I_{dsq}=0.5 I_{dss}$ (EIA), $0.6 I_{dss}$ (EIB)	6.0	6.5		5.0	5.5		dB
PAE	Power Added Efficiency at 1dB compression $f=18.7-19.7\text{GHz}$ $V_{ds}=8\text{V}$ , $I_{dsq}=0.5 I_{dss}$ (EIA), $0.6 I_{dss}$ (EIB)		25			20		%
$I_{d1dB}$	Drain Current at 1dB Compression		440			425		mA
IP3	Output 3 <sup>rd</sup> Order Intercept Point $f=18.7-19.7\text{GHz}$ $V_{ds}=8\text{V}$ , $I_{dsq}=0.5 I_{dss}$ (EIA), $0.6 I_{dss}$ (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  $25^\circ\text{C}$** 

SYMBOLS	PARAMETERS	ABSOLUTE <sup>1</sup>	CONTINUOUS <sup>2</sup>
$V_{ds}$	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.

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