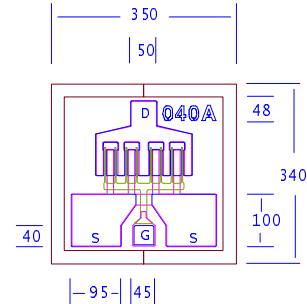


DATA SHEET
Low Distortion GaAs Power FET

- +23.0dBm TYPICAL OUTPUT POWER
- 10.5 dB TYPICAL POWER GAIN AT 12GHz
- 0.3 X 400 MICRON RECESSED “MUSHROOM” GATE
- Si₃N₄ PASSIVATION
- ADVANCED EPITAXIAL DOPING PROFILE PROVIDES HIGH POWER EFFICIENCY, LINEARITY AND RELIABILITY
- Idss SORTED IN 10mA PER BIN RANGE



Chip Thickness: 75 ± 13 microns
All Dimensions In Microns

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

SYMBOLS	PARAMETERS/TEST CONDITIONS	MIN	TYP	MAX	UNIT
P_{1dB}	Output Power at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz f=18GHz	21.0	23.0 23.0		dBm
G_{1dB}	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz f=18GHz	9.0	10.5 8.0		dB
PAE	Gain at 1dB Compression V _{ds} =8V, I _{ds} =50% I _{dss} f=12GHz		35		%
I_{dss}	Saturated Drain Current V _{ds} =3V, V _{gs} =0V	60	105	160	mA
G_m	Transconductance V _{ds} =3V, V _{gs} =0V	45	60		mS
V_p	Pinch-off Voltage V _{ds} =3V, I _{ds} =1.0 mA		-2.0	-3.5	V
BV_{gd}	Drain Breakdown Voltage I _{gd} =1.0mA	-12	-15		V
BV_{gs}	Source Breakdown Voltage I _{gs} =1.0mA	-7	-14		V
R_{th}	Thermal Resistance (Au-Sn Eutectic Attach)		105		°C/W

MAXIMUM RATINGS AT 25°C

SYMBOLS	PARAMETERS	ABSOLUTE ¹	CONTINUOUS ²
V_{ds}	Drain-Source Voltage	12V	8V
V_{gs}	Gate-Source Voltage	-8V	-4V
I_{ds}	Drain Current	I _{dss}	135mA
I_{gsf}	Forward Gate Current	10mA	2mA
P_{in}	Input Power	22dBm	@ 3dB Compression
T_{ch}	Channel Temperature	175°C	150°C
T_{stg}	Storage Temperature	-65/175°C	-65/150°C
P_t	Total Power Dissipation	1.3W	1.1W

Note: 1. Exceeding any of the above ratings may result in permanent damage.

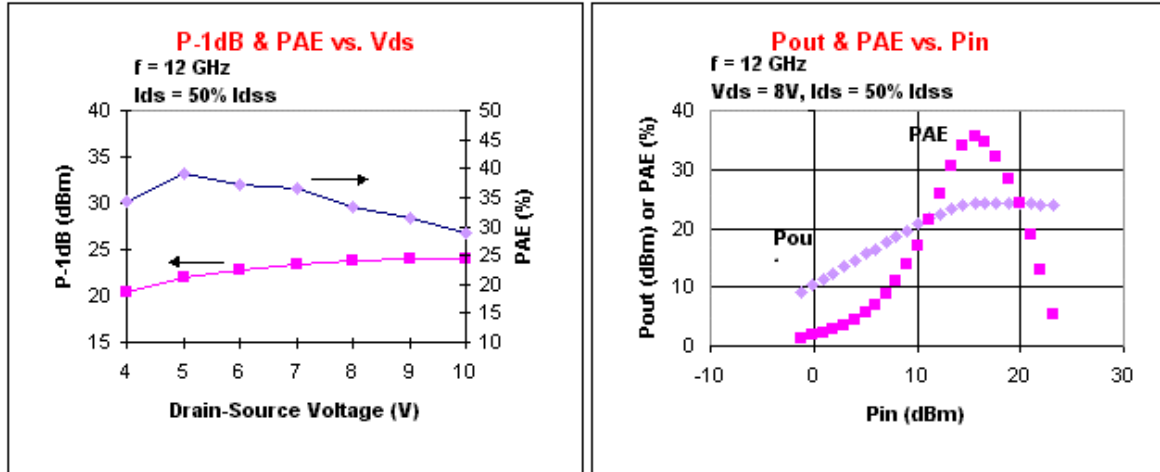
2. Exceeding any of the above ratings may reduce MTTF below design goals.

Excelics Semiconductor, Inc., 2908 Scott Blvd., Santa Clara, CA 95054

Phone: (408) 970-8664 Fax: (408) 970-8998 Web Site: www.excelics.com

DATA SHEET

Low Distortion GaAs Power FET



S-PARAMETERS

8V, 1/2 Idss

FREQ (GHz)	--- S11 ---		--- S21 ---		--- S12 ---		--- S22 ---	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	0.989	-21.4	4.677	163.5	0.019	78.1	0.665	-7.4
2.0	0.970	-41.5	4.457	149.3	0.036	67.0	0.646	-15.3
3.0	0.942	-60.3	4.164	135.7	0.049	56.3	0.615	-22.4
4.0	0.915	-77.6	3.845	123.2	0.060	47.3	0.584	-29.1
5.0	0.888	-94.0	3.529	111.1	0.068	38.6	0.550	-36.2
6.0	0.870	-107.0	3.204	100.9	0.072	32.1	0.526	-42.3
7.0	0.856	-118.1	2.914	91.6	0.075	27.0	0.508	-48.4
8.0	0.846	-127.2	2.663	83.2	0.077	21.2	0.496	-54.3
9.0	0.840	-135.1	2.442	75.5	0.078	16.6	0.487	-60.1
10.0	0.834	-142.0	2.258	68.4	0.077	13.1	0.482	-65.4
11.0	0.833	-148.6	2.115	61.5	0.078	10.0	0.478	-70.9
12.0	0.829	-154.2	1.985	54.8	0.078	6.9	0.476	-76.3
13.0	0.828	-160.2	1.880	48.1	0.078	3.7	0.471	-81.7
14.0	0.826	-166.5	1.799	41.4	0.079	1.1	0.465	-86.7
15.0	0.823	-173.0	1.721	34.6	0.079	-1.5	0.457	-92.5
16.0	0.824	180.0	1.652	27.4	0.080	-4.8	0.446	-98.7
17.0	0.823	172.7	1.583	19.9	0.082	-7.8	0.434	-106.0
18.0	0.822	165.6	1.510	12.5	0.082	-10.9	0.422	-114.2
19.0	0.824	159.0	1.436	5.0	0.082	-13.6	0.412	-123.8
20.0	0.827	153.0	1.358	-2.3	0.083	-16.4	0.409	-134.1
21.0	0.845	151.3	1.218	-8.6	0.078	-18.8	0.445	-148.8
22.0	0.853	148.1	1.144	-14.9	0.076	-20.1	0.467	-158.9
23.0	0.859	145.0	1.073	-20.7	0.076	-19.7	0.496	-166.3
24.0	0.862	143.0	1.012	-26.4	0.073	-20.1	0.533	-173.2
25.0	0.870	141.1	0.965	-31.9	0.074	-18.3	0.565	-179.5
26.0	0.866	139.5	0.915	-36.9	0.074	-17.5	0.595	176.0

Note: The data included 0.7 mils diameter Au bonding wires:
 1 gate wires, 15 mils each; 1 drain wires, 20 mils each; 4 source wires, 7 mils each.