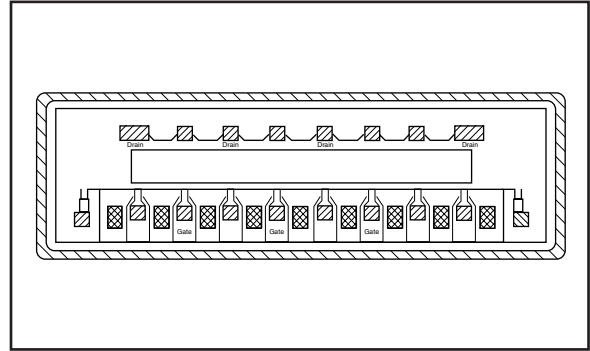


FEATURES

- High Output Power: $P_{1dB} = 33.5dBm(Typ.)$
- High Gain: $G_{1dB} = 7.5dB(Typ.)$
- High PAE: $\eta_{add} = 31%(Typ.)$
- Proven Reliability

DESCRIPTION

The FLX257XV chip is a power GaAs FET that is designed for general purpose applications in the X-Band frequency range as it provides superior power, gain, and efficiency.



Eudyna's stringent Quality Assurance Program assures the highest reliability and consistent performance.

ABSOLUTE MAXIMUM RATING (Ambient Temperature $T_a=25^\circ C$)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	P_{tot}	$T_c = 25^\circ C$	15.0	W
Storage Temperature	T_{stg}		-65 to +175	$^\circ C$
Channel Temperature	T_{ch}		175	$^\circ C$

Eudyna recommends the following conditions for the reliable operation of GaAs FETs:

1. The drain-source operating voltage (V_{DS}) should not exceed 10 volts.
2. The forward and reverse gate currents should not exceed 17.8 and -1.2 mA respectively with gate resistance of 200 Ω .
3. The operating channel temperature (T_{ch}) should not exceed 145 $^\circ C$.

ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ C$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5V, V_{GS} = 0V$	-	1000	1500	mA
Transconductance	g_m	$V_{DS} = 5V, I_{DS} = 600mA$	-	600	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5V, I_{DS} = 50mA$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -50\mu A$	-5	-	-	V
Output Power at 1dB Gain Compression Point	P_{1dB}	$V_{DS} = 10V$ $I_{DS} \approx 0.6I_{DSS}$ $f = 10GHz$	32.5	33.5	-	dBm
Power Gain at 1dB Gain Compression Point	G_{1dB}		6.5	7.5	-	dB
Power-added Efficiency	η_{add}		-	31	-	%
Thermal Resistance	R_{th}	Channel to Case	-	8	10	$^\circ C/W$

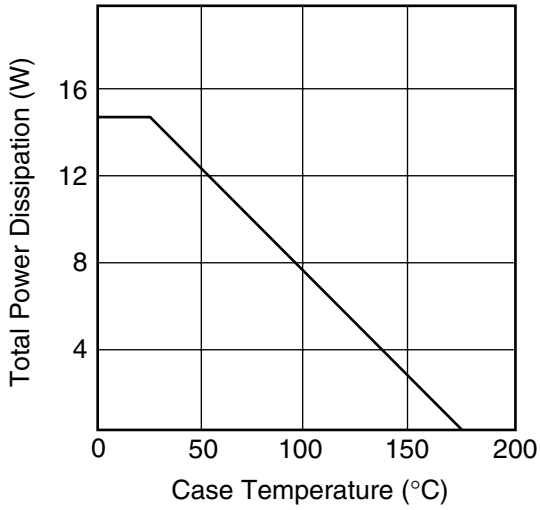
Note: RF parameter sample size 10pcs. criteria (accept/reject)=(2/3)

The chip must be enclosed in a hermetically sealed environment for optimum performance and reliability.

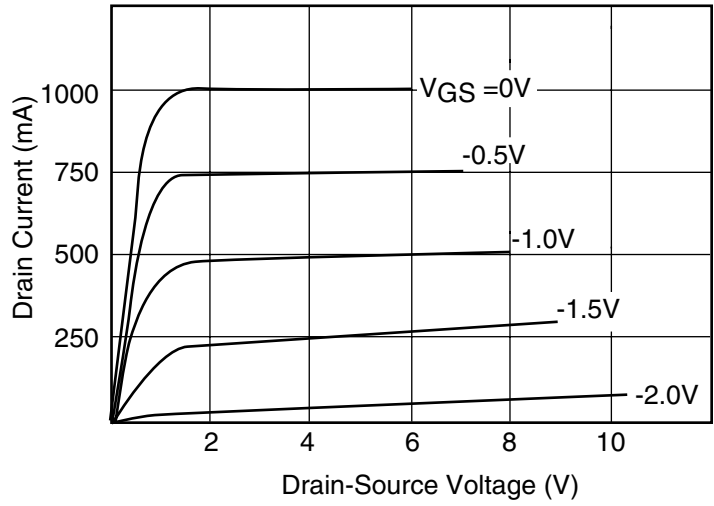
FLX257XV

GaAs FET & HEMT Chips

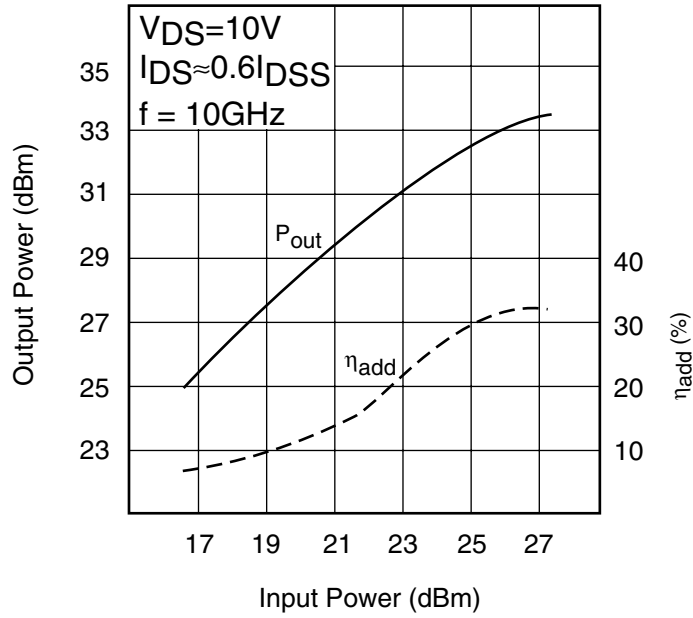
POWER DERATING CURVE



DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE



OUTPUT POWER vs. INPUT POWER



S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 600mA$

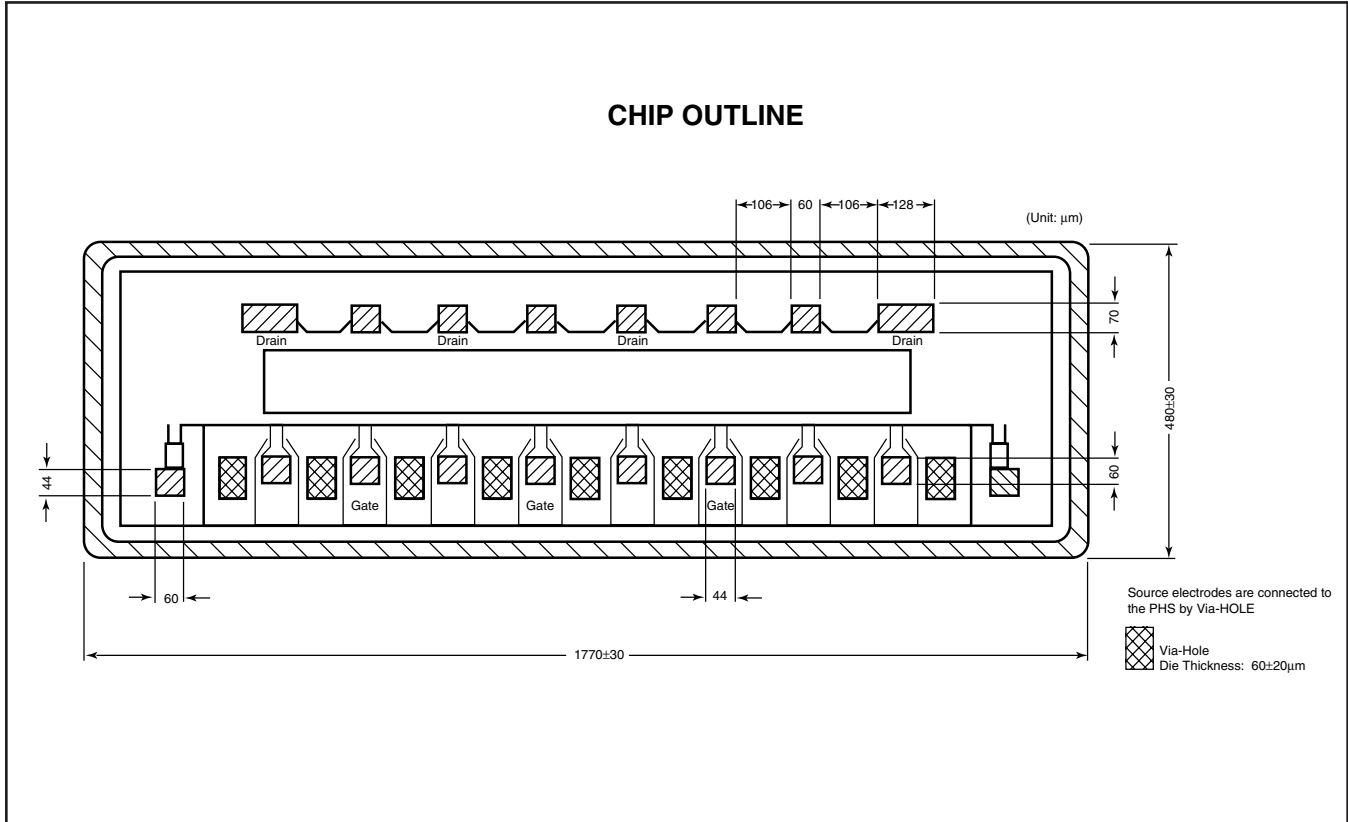
FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	.995	-35.2	14.385	161.0	.007	72.1	.390	-171.2
500	.963	-115.7	7.909	117.0	.020	32.2	.516	-168.2
1000	.953	-145.3	4.423	98.0	.022	18.4	.552	-170.1
2000	.951	-162.8	2.259	80.7	.022	11.8	.579	-169.1
3000	.951	-169.0	1.487	69.1	.022	11.3	.607	-167.1
4000	.953	-172.4	1.089	59.4	.021	13.3	.638	-165.5
5000	.955	-174.6	.846	50.6	.020	16.9	.671	-164.6
6000	.957	-176.3	.681	42.7	.019	22.1	.704	-164.2
7000	.959	-177.6	.562	35.5	.019	28.3	.735	-164.2
8000	.961	-178.8	.472	28.9	.019	35.2	.763	-164.5
9000	.963	-179.8	.402	22.9	.020	42.0	.789	-165.0
10000	.964	179.3	.345	17.5	.021	48.3	.811	-165.7
11000	.966	178.4	.300	12.6	.023	53.8	.831	-166.4
12000	.967	177.6	.262	8.3	.025	58.4	.849	-167.2
13000	.968	176.8	.230	4.4	.027	62.1	.864	-168.0
14000	.969	176.1	.202	1.0	.029	65.1	.878	-168.8
15000	.970	175.4	.179	-1.9	.032	67.5	.889	-169.6
16000	.971	174.7	.158	-4.4	.034	69.3	.900	-170.3
17000	.972	174.0	.140	-6.4	.037	70.8	.909	-171.0
18000	.972	173.3	.124	-7.8	.039	72.0	.916	-171.7

NOTE:* The data includes bonding wires.

n: number of wires Gate n=8 (0.2mm length, 25µm Dia Au wire)
 Drain n=8 (0.2mm length, 25µm Dia Au wire)

FLX257XV

GaAs FET & HEMT Chips



For further information please contact:

Eudyna Devices USA Inc.

2355 Zanker Rd.
San Jose, CA 95131-1138, U.S.A.
TEL: (408) 232-9500
FAX: (408) 428-9111
www.us.eudyna.com

Eudyna Devices Europe Ltd.

Network House
Norreys Drive
Maidenhead, Berkshire SL6 4FJ
United Kingdom
TEL: +44 (0) 1628 504800
FAX: +44 (0) 1628 504888

Eudyna Devices Asia Pte Ltd.

Hong Kong Branch
Rm. 1101, Ocean Centre, 5 Canton Rd.
Tsim Sha Tsui, Kowloon, Hong Kong
TEL: +852-2377-0227
FAX: +852-2377-3921

Eudyna Devices Inc.

Sales Division
1, Kanai-cho, Sakae-ku
Yokohama, 244-0845, Japan
TEL: +81-45-853-8156
FAX: +81-45-853-8170

CAUTION

Eudyna Devices Inc. products contain **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- Do not put this product into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.

Eudyna Devices Inc. reserves the right to change products and specifications without notice. The information does not convey any license under rights of Eudyna Devices Inc. or others.

© 2004 Eudyna Devices USA Inc.
Printed in U.S.A.