

XU0760V GaN TRANSISTOR

Document Number: XU0760V
Preliminary Datasheet V1.0

Gallium Nitride 50V 600W, RF Power Transistor

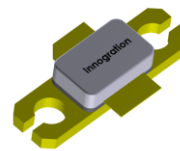
Description

The XU0760V is a 600W single ended GaN HEMT, designed for multiple applications with frequencies up to 700MHz. **It offers much smaller and simpler matching circuit than traditional push-pull matching circuit ,as key benefit to customers.**

It is recommended to use this part for pulsed CW application only.

There is no guarantee of performance when this part is used in applications designed Outside of these frequencies.

XU0760V



- Typical performance (on Innogy narrow band production fixture with device soldered)

$V_{gs} = -3.46V$, $V_{ds} = 50V$, $I_{dq} = 200mA$, Pulse condition: 100us, 10%

Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	IDS(A)	Gain(dB)	Eff(%)	2 nd	3 rd
350	36.61	57.95	623.73	1.75	21.34	71.28	-19.80	-25.20
360	35.92	58.22	663.74	1.85	22.3	71.76	-18.40	-26.20
370	36.55	58.4	691.83	1.9	21.85	72.82	-16.90	-27.30
380	35.97	58.44	698.23	1.9	22.47	73.50	-15.20	-28.30
390	35.98	58.32	679.20	1.84	22.34	73.83	-13.90	-29.00
400	35.59	58.06	639.73	1.71	22.47	74.82	-12.00	-29.00

Applications and Features

- Suitable for wireless communication infrastructure, wideband amplifier, EMC testing, ISM etc.
- High Efficiency and Linear Gain Operations
- Thermally Enhanced Industry Standard Package
- High Reliability Metallization Process
- Excellent thermal Stability and Excellent Ruggedness
- Compliant to Restriction of Hazardous Substances (RoHS) Directive 2002/95/EC

Important Note: Proper Biasing Sequence for GaN HEMT Transistors

Turning the device ON

1. Set VGS to the pinch--off (VP) voltage, typically -5 V
2. Turn on VDS to nominal supply voltage (50V)
3. Increase VGS until IDS current is attained
4. Apply RF input power to desired level

Turning the device OFF

1. Turn RF power off
2. Reduce VGS down to VP, typically -5 V
3. Reduce VDS down to 0 V
4. Turn off VGS

Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
Drain--Source Voltage	V_{DS}	+150	Vdc
Gate--Source Voltage	V_{GS}	-8 to 0	Vdc
Operating Voltage	V_{DD}	0 to 55	Vdc
Maximum forward gate current	I_{gf}	80	mA
Storage Temperature Range	T_{stg}	-65 to +150	C
Case Operating Temperature	T_c	-55 to +150	C
Operating Junction Temperature	T_j	+225	C

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Table 2. Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Case $T_C = 85^\circ\text{C}$, DC Power Dissipation, FEA	$R_{\theta JC}$	0.4	C/W

Table 3. Electrical Characteristics ($T_C = 25^\circ\text{C}$ unless otherwise noted)

DC Characteristics

Characteristic	Conditions	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS} = -8\text{V}$; $I_{DS} = 80\text{mA}$	V_{DSS}		150		V
Gate Threshold Voltage	$V_{DS} = 50\text{V}$, $I_D = 80\text{mA}$	$V_{GS(th)}$		-3.4		V
Gate Quiescent Voltage	$V_{DS} = 50\text{V}$, $I_{DS} = 200\text{mA}$, Measured in Functional Test	$V_{GS(Q)}$		-3.4		V

Reference Circuit of Test Fixture Assembly Diagram

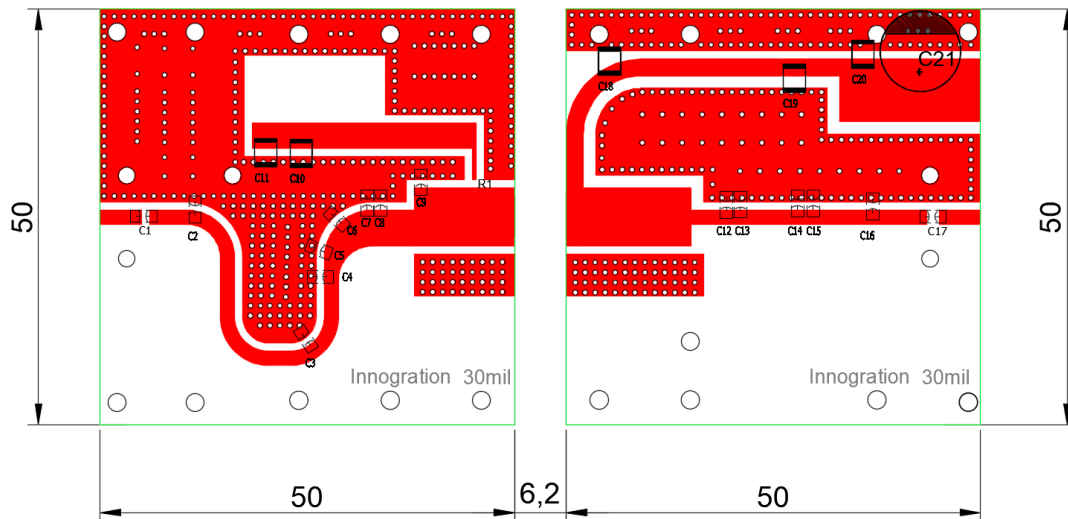


Figure 1. Test Circuit Component Layout (350-400MHz) RO4350B 30mils

Table 4. Test Circuit Component Designations and Values

Component	Description	Suggested Manufacturer
C1	100pF/MQ300805	
C2, C12	6.8pF/MQ300805	
C21	470uF	
C11,C20	10uF	
C10, C19	10nF	
C3, C5, C6, C7, C14	10pF/MQ300805	
C4, C8, C9, C16,	8.2pF/ MQ300805	
C13	15pF/ MQ300805	
C15	5.6pF/ MQ300805	
C17	390pF/ MQ301111	
C18	150pF/ MQ301111	
R1	10ohm/0805	Chip Resistor
PCB	30Mil Rogers4350	

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Package Outline

Flanged ceramic package; 2 leads

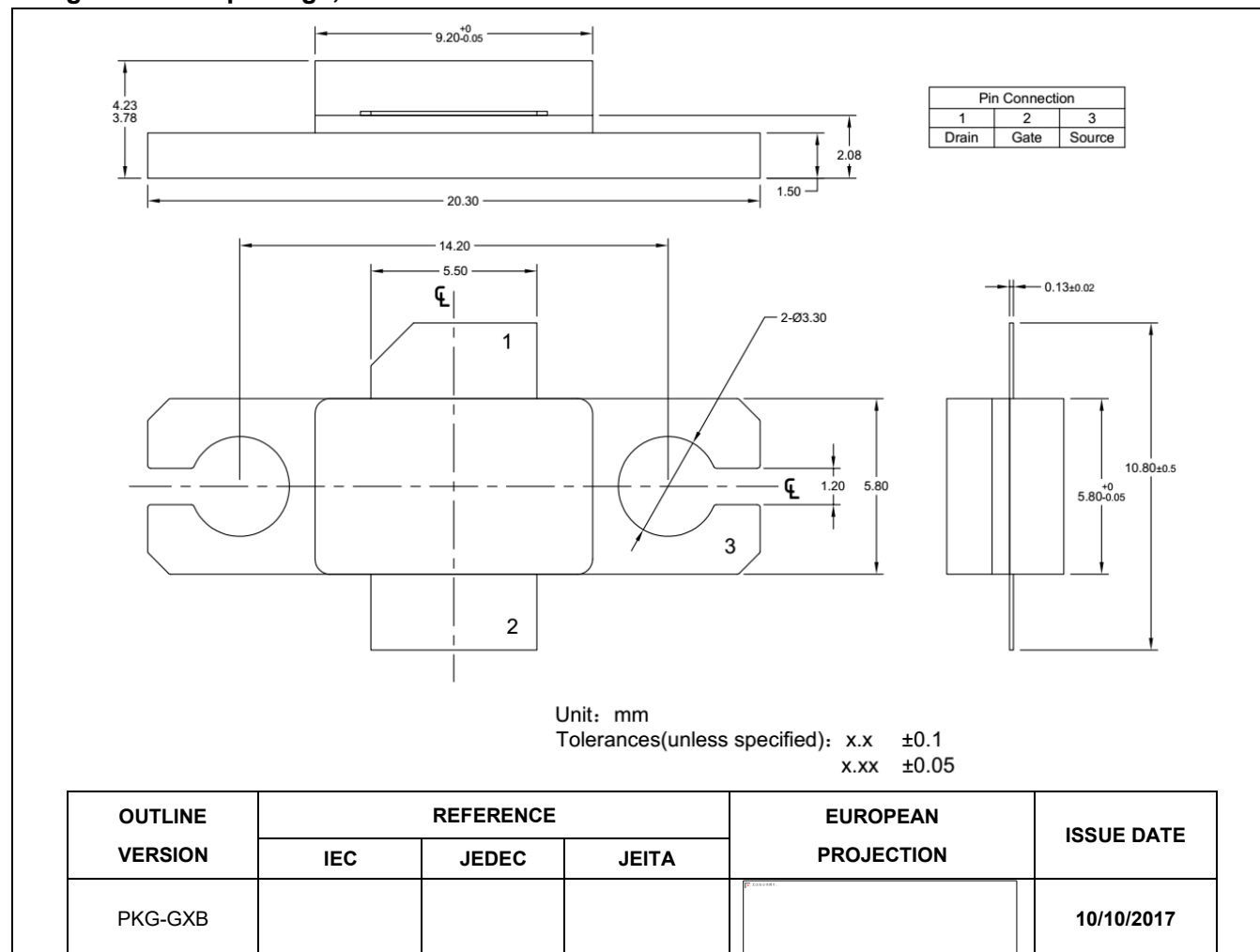


Figure 1. Package Outline PKG-G2E

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Revision history

Table 4. Document revision history

Date	Revision	Datasheet Status
2026/8/3	V1.0	Preliminary Datasheet

Application data based on YHG-26-29

Notice

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