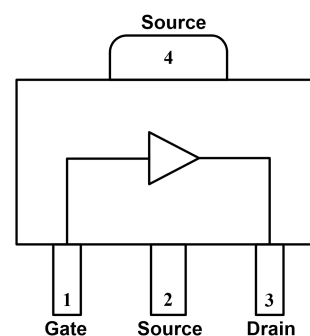


Description

Innnotation's YP601241T is a 15-watt, unmatched gallium nitride (GaN) high electron mobility transistor (HEMT) designed specifically with high efficiency, high gain and wide bandwidth capabilities with frequency up to 6000MHz.

The transistor is supplied in a plastic SOT-89 package.



Package: SOT89-3

Mark: YP601241T

Typical Performance ($T_c=25^\circ\text{C}$) of Demonstration Amplifier

Bias: $V_{DD}=28\text{V}$, $V_{GS}=-2.6\text{V}$, $IDQ=106\text{mA}$

	Psat(dBm)	Eff(%)	Gain(dB)@Pin=0dBm
DC-3GHz	42.5	69	15
3-5GHz	42.3	65	13.5
5-6GHz	42.0	60	12

Features

- High Efficiency and Linear Gain Operation
- Negative Gate Voltage and Bias Sequencing Required
- Excellent Thermal Stability and Excellent Ruggedness
- Metal Based Package Sealed with Ceramic-Epoxy Lid
- Gold Metallization System: Chip-Wire Bond-Package

Table3. Maximum Ratings

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	+83	Vdc
Gate-Source Voltage	V_{GS}	-10 to 0	Vdc
Operating Voltage	V_{DD}	+32	Vdc
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$
Case Operating Temperature	T_C	+150	$^\circ\text{C}$
Operating Junction Temperature	T_J	+225	$^\circ\text{C}$

Table4. Electrical Characteristics

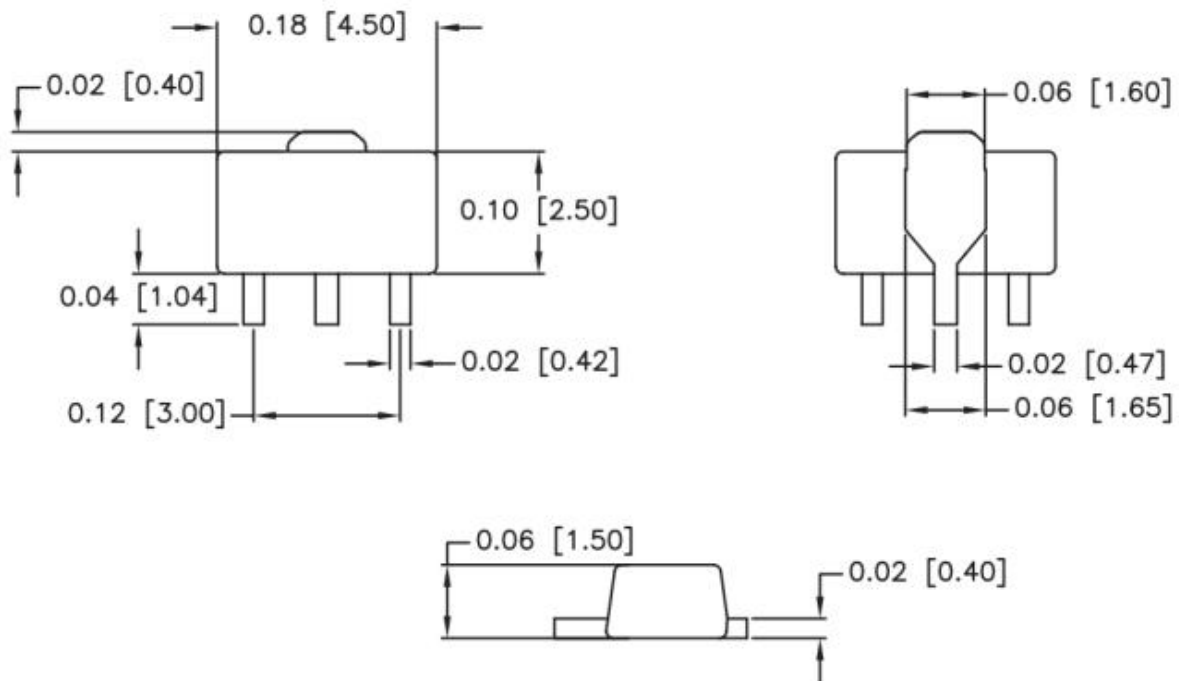
Characteristics	Symbol	Min.	Typ.	Max.	Unit	Conditions
DC Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$		-3.0		V	$V_{DS}=28V, I_D=3.5mA$
Gate Quiescent Voltage	$V_{GS(Q)}$		-2.6		V	$V_{DS}=28V, I_{DS}=106mA$
Drain-Source Breakdown Voltage	V_{BR}		65		V	$V_{GS}=-10V, I_{DS}=3.5mA$

Table5. DC BIAS SEQUENCING

DC BIAS SEQUENCING	
Turn On GaN Device	Turn Off GaN Device
1. RF Power Off 2. Set $V_{GS}=-5V$ (Negative Voltage to Pinch Off) 3. Turn on VDD Voltage 4. Slowly Increase V_{GS} Until Bias Current I_{DQ} is Set 5. Turn on RF Power	1. Turn off RF Power 2. Turn off VDD Voltage 3. After VDD is Discharged, Set $V_{GS}=-5V$ 4. Turn off V_{GS} Voltage

Packaging Diagram

(SOT-89, Units: millimeters)



PCB Land Pattern
