

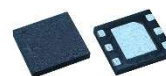
WTGPG6P20

GaN 28V 20W DC-6GHz RF Power Transistor

MECSINE 兆赫斯

FEATURES

- 1, Frequency range from DC to 6.5GHz
- 2, CW Saturated Output Power Psat:
20W@DC~3GHz; 18W@3~5.0GHz;
17W@5.2~6GHz
- 3, CW Drain Efficiency @Psat:
73%@DC~3GHz; 68%@3~5.0GHz;
63%@5.2~6GHz
- 4, 4.5mm×4mm DFN Packaging
- 5, DC power supply +28V
- 6, MSL Moisture Sensitivity Level 3

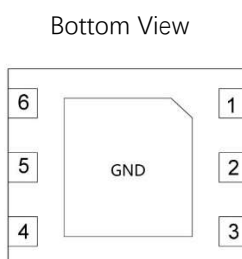
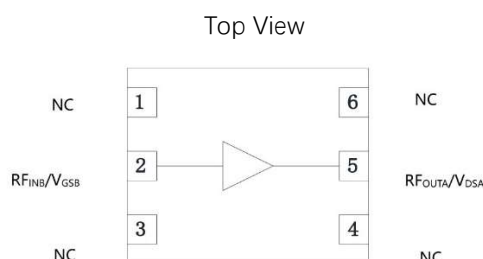


DESCRIPTION

WTGPG6P20 is a GaN power transistor device. With a supply voltage of +28V, this product can deliver a saturated output power of +43 dBm and a drain efficiency of 73% in class AB operation over the frequency range of DC to 3 GHz; a saturated output power of +42.6 dBm and a drain efficiency of 68% in class AB operation from 3 GHz to 5.0 GHz; a saturated output power of +42.3 dBm and a drain efficiency of 63% in class AB operation between 5.2 GHz and 6.0 GHz; as well as a small-signal gain of 15 dB.

This device is characterized by high efficiency and high linearity. Additionally, its port impedance has been optimized, which facilitates users in designing external matching circuits.

PORT CONFIGURATIONS



Terminal Functions	
2	RFIN / V _{GS}
1/3/4/6	NC
5	RFOUT / V _{DS}

MAXIMUM RATINGS

Parameter	Symbol	Ratings	Units
Drain-Source Voltage	V _{DSS}	0~+83	Vdc
Gate-Source Voltage	V _{GS}	-10.0~0	Vdc
Operating Voltage	V _{DD}	0~+32	Vdc
Maximum forward gate current	I _{GSMAX}	3.52	mA
Storage Temperature Range	T _{STG}	-55~+150	°C
Case Operating Temperature	T _C	-55~+150	°C
Operating Channel Temperature	T _{CH}	-55~+225	°C
Operating Junction Temperature	T _{JMAX}	275	°C
Mean Time Between Failures	MTTF	1.5*10 ⁶	h

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ELECTRICAL DISCHARGE LEVEL (ESD)

Test Mode	Level
HBM Human Body Model	1A (250V ~ 500V)
CDM Charge Device Model	C3 $\geq$ (1000V)

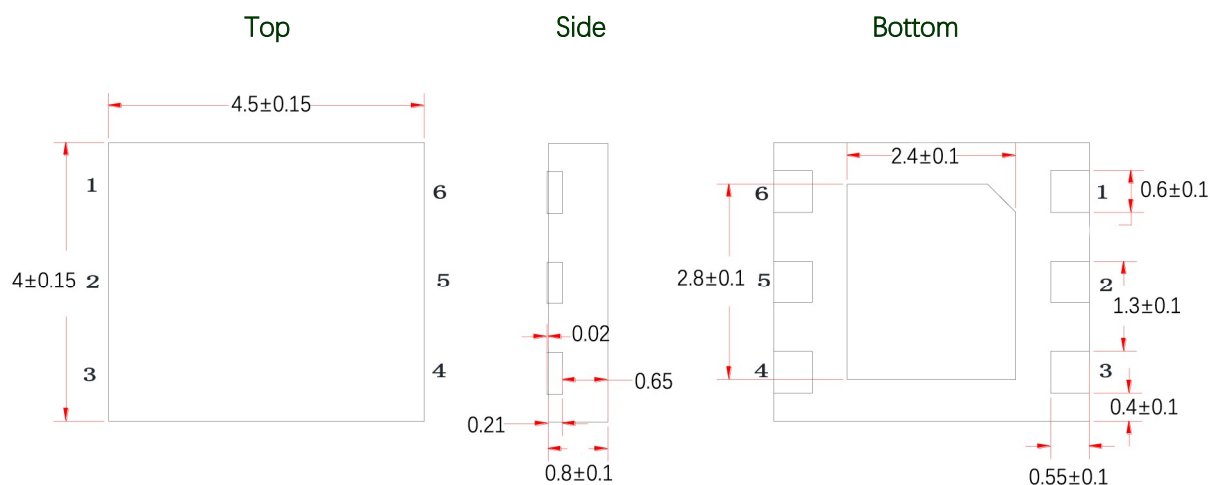
ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Units
Pinch-Off Gate Voltage	$V_{DS}=28V$, $I_D=3.52mA$	V_{OFF}	-3.51	-3.01	-2.61	V
Gate Quiescent Voltage	$V_{DS}=28V$, $I_D=106mA$	V_{GSQ}	-2.99	-2.59	-2.19	V
Source-drain leakage gate current	$V_{GS}=-6V$, $V_{DS}=+28V$	I_{GSS}	-1.7	-	-	mA

RF CHARACTERISTICS

Parameter	Symbol	Min.	Typ.	Max.	Units
Frequency Range	f	DC-	-	6	GHz
Saturated Output Power	P_{sat}	-	43@DC~3GHz 42.6@3~5.0GHz 42.3@5.2~6GHz	-	dBm
Efficiency @ P_{sat}	η_{PE}	-	73@DC~3GHz 68@3~5.0GHz 63@5.2~6GHz	-	%
Gain @ $P_{in}=0dBm$	Gain		15		dB

SHAPES AND DIMENSIONS



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Revison	Description	Date
Rev1.0	Preliminary	2024/6/9

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