

WTGPG6P30

GaN 28V 30W DC-6GHz RF Power Transistor

MECSINE 兆赫

FEATURES

- 1, Frequency range from DC to 6GHz
- 2, CW Saturated Output Power Psat:
39.8W(46dBm)@1.6GHz~2.9GHz, 37.1W(45.7dBm)@3.0GHz~3.9GHz;
35.5W(45.5dBm)@4.4GHz~5.0GHz, 33.9W(45.3dBm) @5.2GHz~6.0GHz;
- 3, CW Drain Efficiency @Psat:
65%@1.6GHz~2.9GHz, 63%@3.0GHz~3.9GHz;
60%@4.4GHz~5.0GHz, 58%@5.2GHz~6.0GHz;
- 4, 6.5mm×7mm DFN Packaging
- 5, DC power supply +28V
- 6, MSL Moisture Sensitivity Level 3

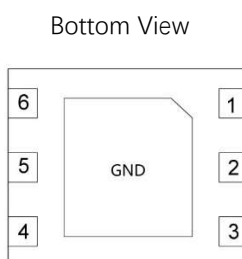
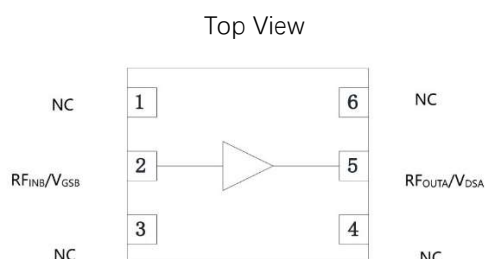


DESCRIPTION

WTGPG6P30 is a GaN power transistor device. With a supply voltage of +28V, saturated power of this device within the frequency band is as follows: 39.8W (46dBm) @ 1.6~2.9GHz; 37.1W (45.7dBm) @ 3.0~3.9GHz; 35.5W (45.5dBm) @ 4.4~5.0GHz; 33.9W (45.3dBm) @ 5.2~6.0GHz. Its saturated efficiency is 65% @ 1.6GHz~2.9GHz; 63% @ 3.0GHz~3.9GHz; 60% @ 4.4GHz~5.0GHz; 58% @ 5.2GHz~6.0GHz. Additionally, it has a small-signal gain of 14dB.

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~+125	Vdc
Gate-Source Voltage	V _{GS}	-10.0~0	Vdc
Operating Voltage	V _{DD}	0~+32	Vdc
Maximum forward gate current	I _{GSMAX}	6.3	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

All Use For RF & Microwave

WTGPG6P30

GaN 28V 30W DC-6GHz RF Power Transistor

MECSINE 兆讯

ELECTRICAL DISCHARGE LEVEL (ESD)

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

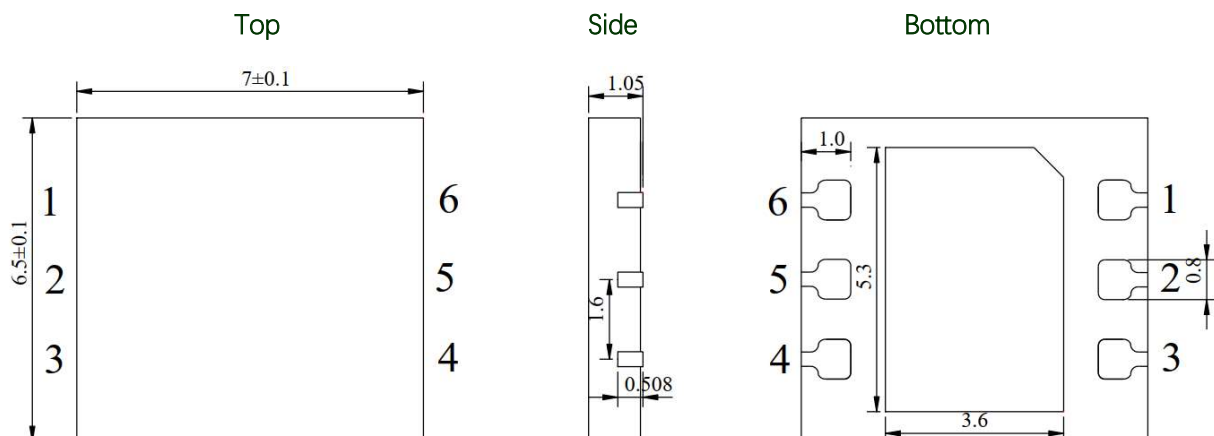
ELECTRICAL CHARACTERISTICS

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Units
Pinch-Off Gate Voltage	$V_{DS}=28V$, $I_D=6.3mA$	V_{OFF}	-3.42	-3.05	-2.62	V
Gate Quiescent Voltage	$V_{DS}=28V$, $I_D=189mA$	V_{GSQ}	-3	-2.6	-2.2	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}	-	46.0dBm@1.6~2.9GHz; 45.7dBm@3.0~3.9GHz; 45.5dBm@4.4~5.0GHz; 45.3dBm@5.2~6.0GHz;	-	dBm
Efficiency @ P_{sat}	η_{DE}	-	65%@1.6GHz~2.9GHz; 63%@3.0GHz~3.9GHz; 60%@4.4GHz~5.0GHz; 58%@5.2GHz~6.0GHz;	-	%
Gain @ $P_{in}=20dBm$	Gain		14		dB

SHAPES AND DIMENSIONS



All Use For RF & Microwave

WTGPG6P30

GaN 28V 30W DC-6GHz RF Power Transistor



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

All Use For RF & Microwave