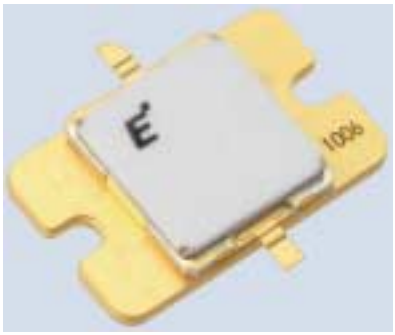
GaN-HEMT 160W

EGN21C160I2D

High Voltage - High Power GaN-HEMT



FEATURES

- High Voltage Operation : V_{DS}=50V
- High Power : 52.5dBm (typ.) @ Psat
- High Efficiency: 68%(typ.) @ Psat
- Power Gain : 18dB(typ.) @ f=2.14GHz
- Proven Reliability

DESCRIPTION

SEDI's GaN-HEMT offers high efficiency, ease of matching, greater consistency and broad bandwidth for high power L-band amplifiers with 50V operation, and gives you higher gain.
This new product is ideally suited for use from 1.8GHz to 2.2GHz W-CDMA & LTE design requirements as it offers high gain, long term reliability and ease of use.

ABSOLUTE MAXIMUM RATINGS (Case Temperature Tc=25°C)

Item	Symbol	Condition	Rating	Unit
Operating-Voltage	V_{DS}		55	V
Drain-Source Voltage	V_{DS}	V_{GS}=-8V	160	V
Gate-Source Voltage	V_{GS}		-15	V
Total Power Dissipation	P_t		132	W
Storage Temperature	T_{stg}		-65 to +175	°C
Channel Temperature	T_{ch}		250	°C

RECOMMENDED OPERATING CONDITION

Item	Symbol	Condition	Limit	Unit
DC Input Voltage	V_{DS}		≤ 55	V
Forward Gate Current	I_{GF}	R_G=5Ω	≤ 153	mA
Reverse Gate Current	I_{GR}	R_G=5Ω	≥ -5.8	mA
Channel Temperature	T_{ch}		≤ 180	°C
Average Output Power	Pave.		≤ 49.5	dBm

ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25°C)

Item	Symbol	Condition	Limit			Unit
			min.	Typ.	Max.	
Pinch-Off Voltage	V_p	V_{DS}=50V I_{DS}=40.8mA	-1.0	-1.5	-2.0	V
Saturated Power	Psat *1	V_{DS}=50V	51.7	52.5	-	dBm
Drain Efficiency	η_d *2	$I_{DS(DC)}$=600mA	28	32	-	%
Power Gain	Gp *2		17.0	18.0	-	dB
3rd Order Inter-modulation Distortion	IM3 *2		-28	-32	-	dBc
Thermal Resistance	R_{th}	Channel to Case at 78W P_{DC}	-	1.4	1.6	°C/W

*1 : 10%-duty RF pulse (DC supply constant), f=2.14GHz
*2 : Pout = 44.5dBm, f0=2.135GHz, f1=2.145GHz, W-CDMA(3GPP3.4 12-00) BS-1 64ch 47.5% clipping modulation (Peak/Avg.=8.5dB@0.01% Probability on CCDF).

I2D Package Outline
Metal-Ceramic Hermetic Package