

25W, 28V RF Power GaN HEMT

NGN60025L4C



Description

The NGN60025L4C is an unmatched 25W GaN HEMT, designed for applications up to 6GHz. The transistor is packaged in a surface mounted package making it a compact and versatile product that can be used in a multitude of applications with many possible signal formats such as CW, pulsed radar or complex modulation schemes.

Applications and Features

- 5G, LTE and multi-mode wireless communication
- Radar
- Wideband amplifiers
- EMC testing, ISM

Maximum Ratings

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	120	Vdc
Gate-Source Voltage	V_{GS}	-10,+2	Vdc
Operating Voltage	V_{DD}	40	Vdc
Maximum Forward Gate Current @ TC = 25°C	I_{gmax}	6	mA
Storage Temperature Range	T_{stg}	-65 to +150	°C
Case Operating Temperature	T_C	+150	°C
Operating Junction Temperature	T_J	+225	°C
Total Device Power Dissipation	P_{diss}	33	W
Thermal Resistance, $T_C=85^\circ\text{C}$, $T_J=200^\circ\text{C}$,	$R_{\theta JC}$	5.3	°C/W

Electrical Characteristics

DC Characteristics

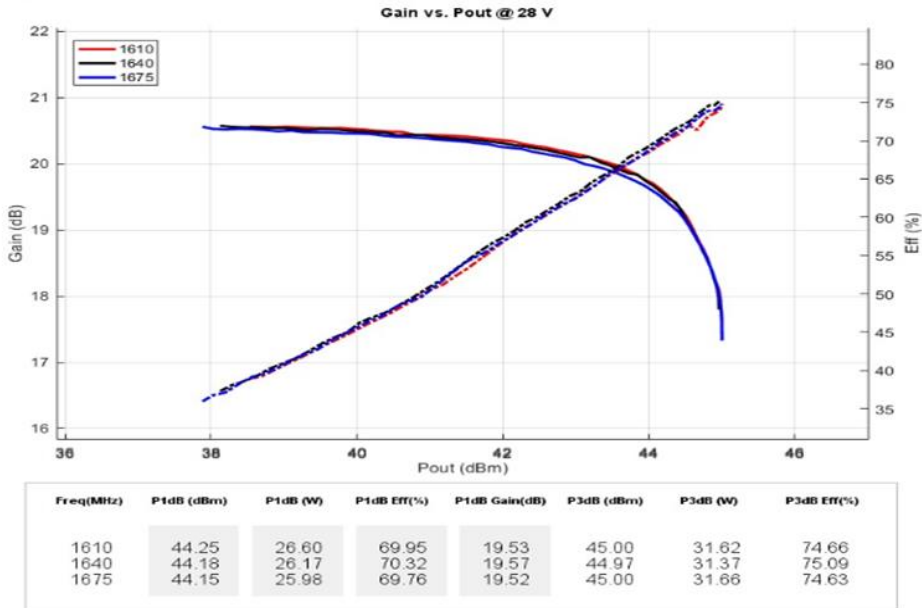
Characteristic	Conditions	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{GS}=-8\text{V}$; $I_{DS}=10\text{mA}$	V_{DSS}		160		V
Gate Threshold Voltage	$V_{DS}=28\text{V}$, $I_D=5\text{mA}$	$V_{GS(th)}$		-2.7		V
Gate Quiescent Voltage	$V_{DS}=28\text{V}$, $I_{DS}=120\text{mA}$,	$V_{GS(Q)}$		-2.35		V

RF Characteristics

As measured in standard test fixture $V_{DD}=28\text{V}$, $I_{DQ}=120\text{mA}$, $f=1.6\text{GHz}$, $P_{in}=25\text{dBm}$

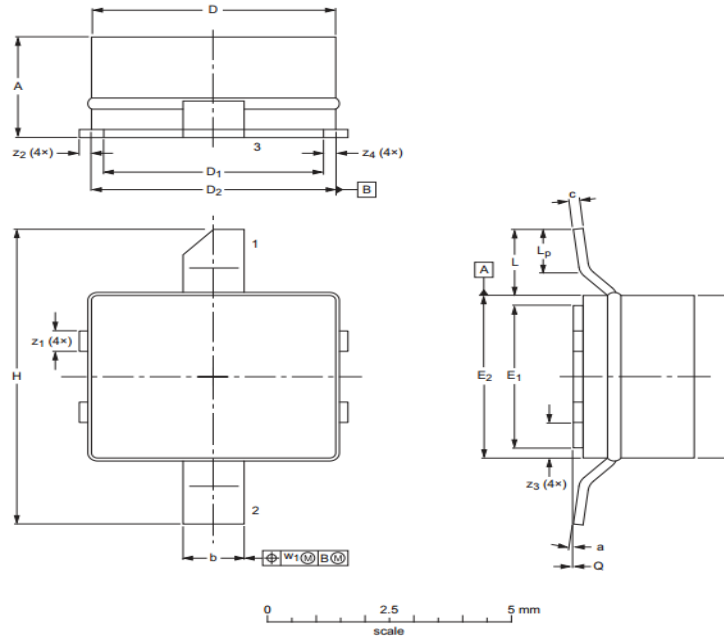
Characteristic	Symbol	Min	Typ	Max	Unit
Power Gain	G_p		19		dB
Drain Efficiency @ P_{SAT}	η		70		%
Saturated Power	P_{SAT}		25		W
Input Return Loss	IRL		-7		dB
Mismatch stress at all phases	VSWR		10:1		Ψ

Performance as measured in standard demo circuit



Package Outline

Earless Flange Ceramic Package; 2 leads (1:Drain, 2:Gate, 3-Source (Bottom base))



UNIT	A	b	c	D	D ₁	E	E ₁	E ₂	H	L	L _p	Q	W ₁	Z ₁	Z ₂	Z ₃	Z ₄	α
mm	2.34 2.13	1.35 1.19	0.23 0.18	5.16 5.00	4.65 4.50	4.14 3.99	3.63 3.48	4.14 3.99	7.49 7.24	2.03 1.27	1.02 0.51	0.1 0.0	0.25	0.58 0.43	0.25 0.18	0.97 0.81	0.51 0.00	7° 0°

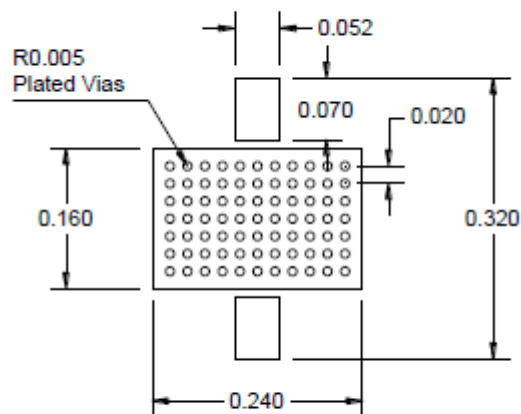
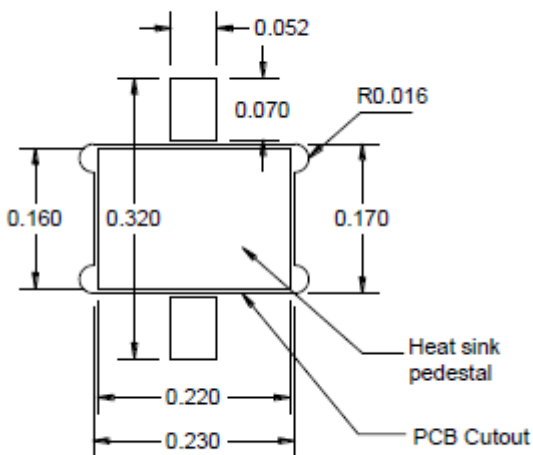
Recommendations for assembly, PCB connection layout

Option 1: Package leads straight

Device mounted on heatsink through cavity in PCB

Option 2: Package leads bent

Device mounted atop tightly stitched array of filled vias



Note: Dimensions in inches