

What's New!

弊社取り扱いメーカーInnegration社にて
下記のパッケージRFトランジスターが
リリースされました。

アプリケーション: プラズマ電源、高周波電源
及びマイクロウェーブヒーティング

ISM band(MHz)	Transistor	Technology	Voltage(V)	Typical Pout(W)	Test condition	Typical Eff (%)
6/13/27/40/64/128	VTSU01900	VDMOS	100	600	CW	70
	VTSU011K2*2	VDMOS	100	2400	Pulse	65
	MQ051K2V	LDMOS	50	1000	CW	80
325/433	ITCH04200B2	LDMOS	28	200	CW	82
	MK0560V	LDMOS	50	600	CW	75
	MQ051K2V	LDMOS	50	1000	CW	70
915	MQ1060V	LDMOS	50	700	CW	60
	ITCH13200B4*2	LDMOS	32	450	CW	70
1300	ITCH13200B4*2	LDMOS	32	500	CW	65
2450	ITCH24015E2	LDMOS	32	15	CW	64
	ITCH24025E2	LDMOS	32	30	CW	63
	ITCH24180B2	LDMOS	32	200	CW	58
	NW2513	GaN	50	130	CW	72
	NW2513*2	GaN	50	250	CW	70
	NW2513*3	GaN	60	400	CW	69

新製品情報

【NW2509】(Pg2以降にデータシート添付)

・90W CW ・効率75%(業界最高率)

・90Wを標準とし2、3個コンバインして180W/270Wの製品にするなどの対応も可能。

【i モジュール】

GMAV25130 130W GaN i-モジュール

Eff: 72% (2450MHz 50V CW)

ベアチップをマイクロストリップ基盤に直接ダイアタッチし、
トランジスターパッケージを使用しない事により、低価格化を実現しました。

且、スペース制限が無くなり、高調波抑制チューニングが可能となり高い効率が
得られます。

2個を平行で使用した場合下記の出力が得られます。

200W - 2 of it at 45V

250W - 2 of it at 50V

300W - 2 of it at 55V

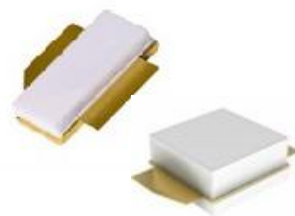
【GaN ベアチップ、Mos Cap】

NW2513 130W GaN

パッケージトランジスターに使われている、GaNベアチップ及びモスクャパシターの販売を
始めました。

GaNベアチップ サンプル価格 95US\$ (50個時)

MosCap サンプル価格 8US\$ (50個時)



データシート・その他お問合せは各営業担当 もしくは nyoshimoto@takitek.com までお願いいたします。

【各種コネクタ】

同軸コネクタ、D-subコネクタ、
防水コネクタ、丸形コネクタ
等

【高周波部品】

カプラー、ディバイダー、トランス
フォーマー、アンプ、アッテネータ
等

【ケーブル・ケーブルASSY】

低損失セミフレキシブル、
セミリジッドケーブル、測定用ケー
ブル 等

【測定機器】

PIMDアナライザー、
ネットワークアナライザー 等

【各種アンテナ】

ホーンアンテナ、スパイラルアンテ
ナ、
全方向アンテナ、パッチアンテナ、
ダイポールアンテナ、マストアンテ

【フィルター】

携帯電話基地局向けフィルター
防衛・放送向けフィルター 等



NW2509 GaN TRANSISTOR

Document Number: NW2509
Preliminary Datasheet V1.0

Gallium Nitride 50V, 90W, RF Power Transistor

Description

The NW2509 is a 90-watt, internally matched GaN HEMT, designed for multiple applications with frequencies for 2.4-2.5GHz.

The performance is guaranteed for applications operating in the mentioned frequencies

There is no guarantee of performance when this part is used in applications designed outside of these frequencies.

•Typical Performance (On Innogration Fixture): $V_{DD} = 50$ Volts, $V_{GS} = -3.3V$, CW

Freq (MHz)	Pout (W)	Eff (%)	Gain (dB)
2450	90	75	15

Applications and Features

- Suitable for 2.4GHz RF heating, Microwave cooking, industry heating application.
- High Efficiency and Linear Gain Operations
- Thermally Enhanced Industry Standard Package
- High Reliability Metallization Process
- Excellent thermal Stability and Excellent Ruggedness
- Compliant to Restriction of Hazardous Substances (RoHS) Directive 2002/95/EC

Important NOTE: Proper Biasing Sequence for GaN HEMT Transistors

Turning the device ON

1. Set VGS to the pinch--off (VP) voltage, typically -5 V
2. Turn on VDS to nominal supply voltage (50 V)
3. Increase VGS until IDS current is attained
4. Apply RF input power to desired level

Turning the device OFF

1. Turn RF power off
2. Reduce VGS down to VP, typically -5 V
3. Reduce VDS down to 0 V
4. Turn off VGS

Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
Drain--Source Voltage	V_{DSS}	+150	Vdc
Gate--Source Voltage	V_{GS}	-10 to +0.5	Vdc
Operating Voltage	V_{DD}	0 to 60	Vdc
Maximum forward gate current	Igf	28	mA
Storage Temperature Range	Tstg	-65 to +150	C
Case Operating Temperature	T_C	+150	C
Operating Junction Temperature	T_J	+200	C



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Table 2. Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Case Case Temperature 80°C, 70W Dissipation, 50 Vdc, IDQ = 100 mA	R _{θJC}	1.2	C/W

Table 3. Electrical Characteristics (TA = 25°C unless otherwise noted)

DC Characteristics

Characteristic	Conditions	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{GS} = -8V; I _{DS} = 10mA	V _{DSS}	---	150	---	V
Gate Threshold Voltage	V _{DS} = 50V, I _D = 5 mA	V _{GS(th)}	---	-2.8	---	V
Gate Quiescent Voltage	V _{DS} = 50V, I _{DS} = 100mA, Measured in Functional Test	V _{GS(Q)}	---	-2.55	---	V

Functional Tests (In Innogration Test Fixture, 50 ohm system) :V_{DD} = 50 Vdc, V_{GS} = -3.3V, f = 2.45GHz, CW.

Characteristic	Symbol	Min	Typ	Max	Unit
Power Gain	G _p	---	15	---	dB
Drain Efficiency	η _D	---	75	---	%
Power Out	P _{OUT}	---	90	---	W
Input Return Loss	IRL	---	-15	---	dB

TYPICAL CHARACTERISTICS

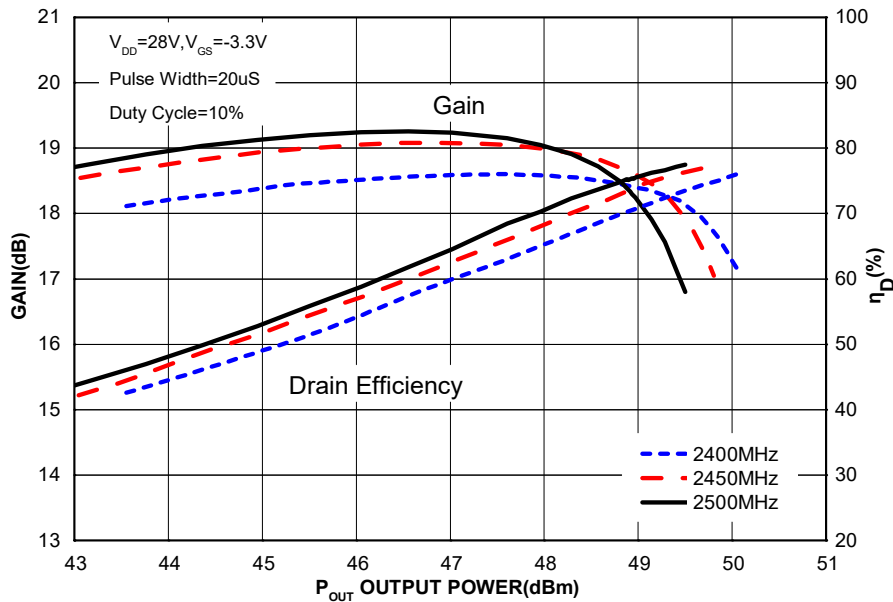


Figure 1. Power gain and drain efficiency as function of
Pulse output power (2400-2500MHz)

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Reference Circuit of Test Fixture Assembly Diagram

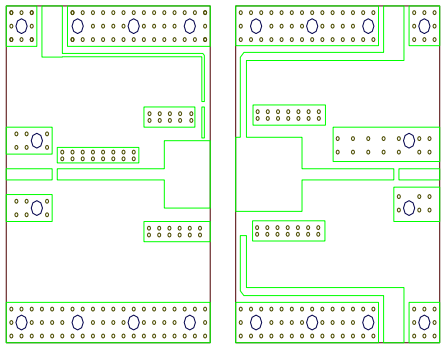


Figure 1. Test Circuit Component Layout(2400MHz~2450MHz)

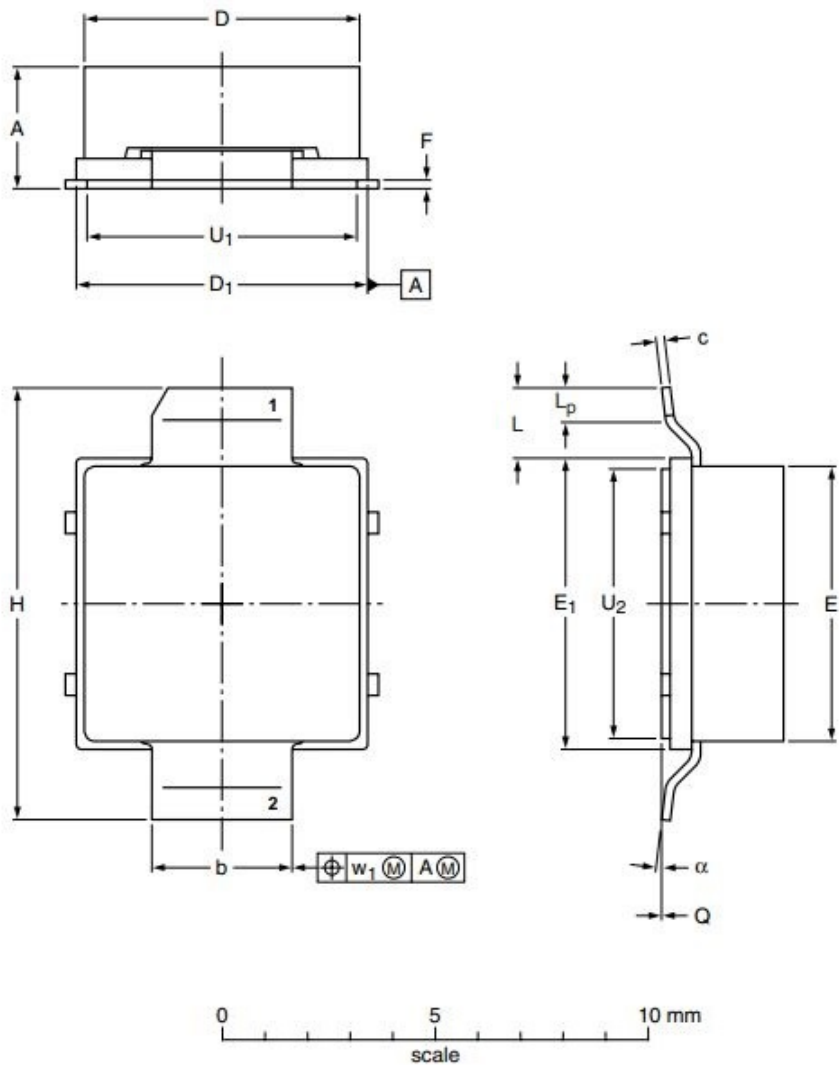
PCB	0.78mm [0.030"] thick, $\epsilon_r=3.48$, Rogers RO4350, 1 oz. copper
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Package Outline

Earless Flanged ceramic package; 2 leads(1-DRAIN,2-GATE) and Backside grounding is source



UNIT	A	b	c	D	D ₁	E	E ₁	F	H	L	L _p	Q	U ₁	U ₂	w ₁	α
mm	3.63	3.38	0.23	6.55	6.93	6.55	6.93	0.23	10.29	1.65	1.02	+0.05	6.43	6.43	0.51	7°
	3.05	3.23	0.18	6.40	6.78	6.40	6.78	0.18	10.03							
inches	0.143	0.133	0.009	0.258	0.273	0.258	0.273	0.009	0.405	0.065	0.040	+0.002	0.253	0.253	0.02	7°
	0.120	0.127	0.007	0.252	0.267	0.252	0.267	0.007	0.395							

OUTLINE VERSION	REFERENCE				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
PKG-E-2A						10/22/2013

Revision history

Table 5. Document revision history

Date	Revision	Datasheet Status
2017/01/12	V1.0	Preliminary Datasheet Creation

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