

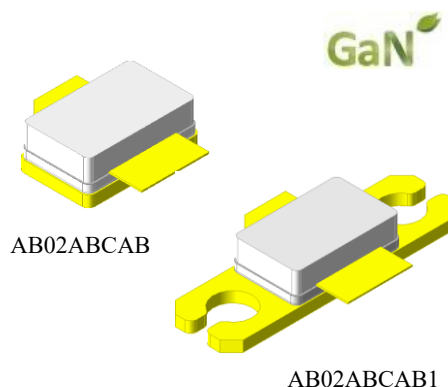
AB02ABCAB / AB02ABCAB1

Product Features

- 50~3000 MHz
- 120 W Saturated Power @ 28V, 3 GHz
- 67% Drain Efficiency @ Psat, 3 GHz
- Small Signal Gain: 20 dB @ 3GHz
- Lead Free Air Cavity Ceramic Package

Applications

- Weather Radar System
- Marine Radar System
- L, S-Band Radar System
- Military Communications
- Electronic Warfare
- General Amplification
- Avionics (DME, IFF, TACAN)
- ISM



Description

The AB02ABCAB / AB02ABCAB1 is an integrated GaN power amplifier designed for applications in L, S-Band military and commercial Radar Systems covering 50~3000 MHz. The AB02ABCAB / AB02ABCAB1 uses GaN on SiC HEMT technology which provides high breakdown voltage, wide bandwidth, and high efficiency.

Available in a thermally enhanced flange package, the device offers reliable CW performance and helps system designers achieve improved SWaP-C in next-generation applications.

Typical Performance @ $V_{DS} = +28V$, $T_c = 25^\circ C$, 50Ω

Frequency [MHz]	Signal Type	Input Power [dBm]	Output Power [dBm]	Large Signal Gain [dB]	Drain Efficiency [%]
50	CW	36	48.8	12.8	70
500			48.8	12.8	70
1000			48.2	12.2	52
1500			48.6	12.6	63
2000			48.4	12.4	63
2500			49.8	13.8	59
3000			50.0	14.0	67

Note

*1 Measured on the AB02ABCAB / AB02ABCAB1 test board, under continuous-wave (CW) conditions.

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GaN Power Transistors



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Absolute Maximum Ratings

Rating	Symbol	Value	Unit	Condition
Drain to Source Voltage	V_{DSS}	84	V	$T_c=25^{\circ}\text{C}$
Gate to Source Voltage	V_{GS}	-10, +2	V	$T_c=25^{\circ}\text{C}$
Operating Voltage	V_{DD}	30	V_{DC}	
Maximum Forward Gate Current	I_{GMAX}	28	mA	$T_c=25^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55, +150	$^{\circ}\text{C}$	
Case Operating Temperature	T_C	-40, +85	$^{\circ}\text{C}$	30 seconds
Operating Junction Temperature ^{*1}	T_J	225	$^{\circ}\text{C}$	
Soldering Temperature ^{*2}	T_S	245	$^{\circ}\text{C}$	

Note

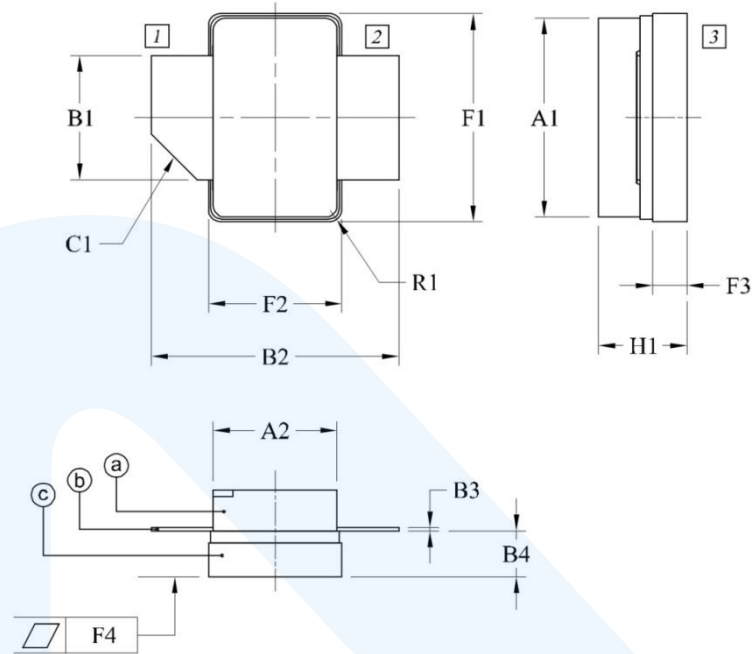
*1 Continuous use at maximum temperature will affect MTTF.

*2 Refer to the Application Note (AN-002) on soldering - "Solder Condition for RFHIC's GaN Device"

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Package Dimensions AB02ABCAB (Type: NS-BS01)

* Unit: mm[inch] | Tolerance ± 0.15 [.006]



Pin Description	
Pin No	Function
1	Gate
2	Drain
3	Source

Dim.	INCH			MILLIMETER		
	MIN	TYP	MAX	MIN	TYP	MAX
A1	.343	.346	.352	8.70	8.80	8.95
A2	.209	.213	.219	5.30	5.40	5.55
B1	.211	.217	.222	5.37	5.50	5.63
B2	.406	.425	.445	10.30	10.80	11.30
B3	.004	.005	.007	0.10	0.13	0.18
B4	.080	.085	.090	2.03	2.15	2.28
C1 (Chamfer)	.075	.079	.083	1.90	2.00	2.10
F1	.357	.362	.367	9.07	9.20	9.32
F2	.223	.228	.233	5.67	5.80	5.93
F3	.054	.059	.064	1.37	1.50	1.63
F4	-	.001	-	-	0.03	-
H1	.144	.156	.163	3.65	3.95	4.15
R1 (Radius)	.016	.020	.024	0.40	0.50	0.60

- (a)- Lid
- (b)- Lead Frame
- (c)- Flange

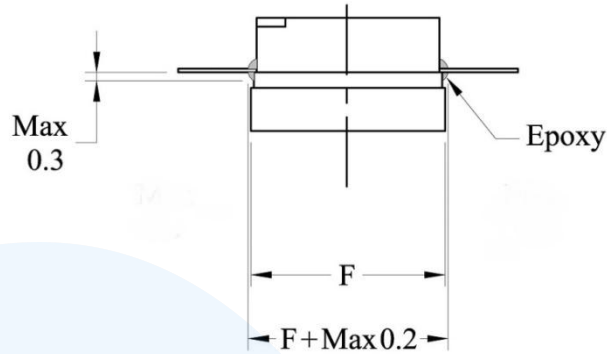
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Sealing Epoxy Tolerance AB02ABCAB (Type: NS-BS01)



Note

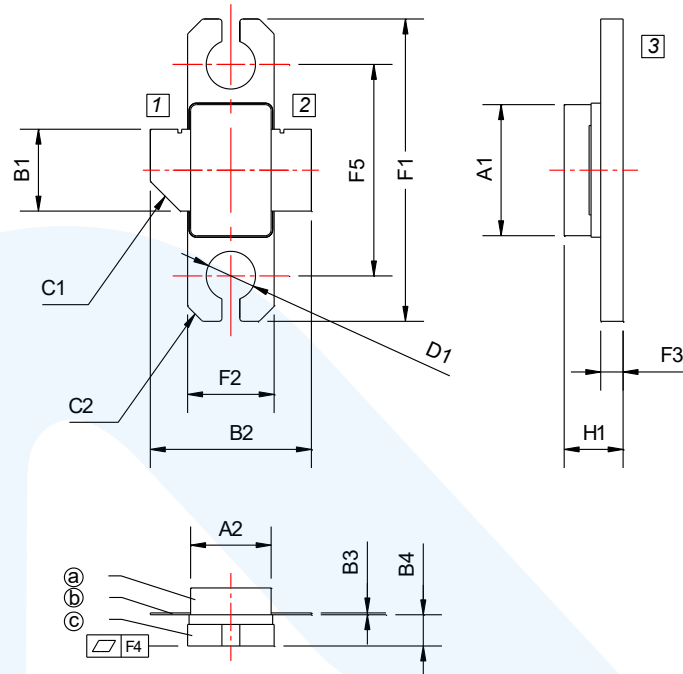
* Unit: mm

* F is maximum size of flange

AB02ABCAB / AB02ABCAB1

Package Dimensions AB02ABCAB1 (Type: NS-BS01P1)

* Unit: mm[inch] | Tolerance ± 0.15 [.006]



Pin Description	
Pin No	Function
1	Gate
2	Drain
3	Source

Dim.	INCH			MILLIMETER		
	MIN	TYP	MAX	MIN	TYP	MAX
A1	.343	.346	.352	8.70	8.80	8.95
A2	.209	.213	.219	5.30	5.40	5.55
B1	.211	.217	.222	5.37	5.50	5.63
B2	.406	.425	.445	10.30	10.80	11.30
B3	.004	.005	.007	0.10	0.13	0.18
B4	.080	.085	.090	2.03	2.15	2.28
C1 (Chamfer)	.075	.079	.083	1.90	2.00	2.10
C2 (Chamfer)	.033	.039	.045	0.85	1.00	1.15
F1	.794	.799	.804	20.17	20.30	20.43
F2	.223	.228	.233	5.67	5.80	5.93
F3	.054	.059	.064	1.37	1.50	1.63
F4	-	.002	-	-	0.05	-
F5	.554	.559	.564	14.07	14.20	14.33
H1	.144	.156	.163	3.65	3.95	4.15
D1	.124	.130	.136	3.15	3.30	3.45

- ①- Lid
- ②- Lead Frame
- ③- Flange

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AB02ABCAB / AB02ABCAB1

Revision History

Part Number	Release Date	Version	Description	Data Sheet Status
AB02ABCAB, AB02ABCAB1	Sep. 2026	0.1	Initial release of datasheet	Preliminary



Certification

This product is manufactured by a company that is certified for the AS9100D quality management system.

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