

AH720...AH741/AH750...AH771

GaAs IMPATT

POWER GENERATION DIODES

FEATURES

Operating frequency range : 10, 14, 16GHz
Case style: W4

Emitting power : 2 to 5Watts

APPLICATIONS

The IMPATT diodes are suitable for use as transmitter in active seekers. They comply with high microwave power requirements in C.W.

and pulsed conditions with high microwave efficiencies.

DESCRIPTION

By use of a low-high-low profile in the epitaxial layer, the efficiency of the GaAs IMPATT

diodes is increased to greater than 18% in the case of high output CW devices (> 3 Watts).

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	MIN.	MAX.	UNIT
Storage temperature	T_{stg}	-55	+175	°C
Operating temperature	T_{op}	-40	+85	°C

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ELECTRICAL CHARACTERISTICS ($T = +25^{\circ}\text{C}$)**C.W. DEVICES**

ELECTRICAL CHARACTERISTICS $TC = +25^{\circ}\text{C}$										
TYPE	F (GHz)	CASE	VBR(1) (V) TYP.	CJO (pF) TYP.	VOP (V) TYP.	IOP (mA) TYP.	PO (2) (W) MIN.	η (%) TYP.	RTH ($^{\circ}\text{C}/\text{W}$) TYP.	TJ(3) ($^{\circ}\text{C}$) TYP.
AH720	10	W4	40	25	50	375	3	20	10-12	190
AH721	10	W4	40	35	50	400	4	20	10-12	200
AH722	10	W4	40	45	50	500	5	20	10-12	245
AH730	14	W4	30	20	38	300	2	18	10-12	130
AH731	14	W4	30	30	38	425	3	18	10-12	170
AH732	14	W4	30	40	38	550	4	18	10-12	215
AH740	16	W4	25	20	35	350	2	16	10-12	140
AH741	16	W4	25	30	35	500	3	16	10-12	190

PULSED OPERATING PERFORMANCES $\tau = 1\mu\text{s}$; $\tau / T = 25\%$

ELECTRICAL CHARACTERISTICS $TC = +25^{\circ}\text{C}$										
TYPE	F (GHz)	CASE	VBR(1) (V) TYP.	CJO (pF) TYP.	VOP(2) (V) TYP.	IOP(2) (mA) TYP.	PO (2) (W) MIN.	η (%) TYP.	RTH ($^{\circ}\text{C}/\text{W}$) TYP.	TJ (3) ($^{\circ}\text{C}$) TYP.
AH750	10	W4	42	40	52	950	10	20	7-10	110
AH751	10	W4	42	50	52	1100	12	20	7-10	125
AH752	10	W4	42	60	52	1450	15	20	7-10	150
AH760	14	W4	32	40	40	1100	8	18	7-10	100
AH761	14	W4	32	50	40	1400	10	18	7-10	125
AH762	14	W4	32	60	40	1600	12	18	7-10	140
AH770	16	W4	27	40	37	1300	8	16	7-10	110
AH771	16	W4	27	50	37	1700	10	16	7-10	140

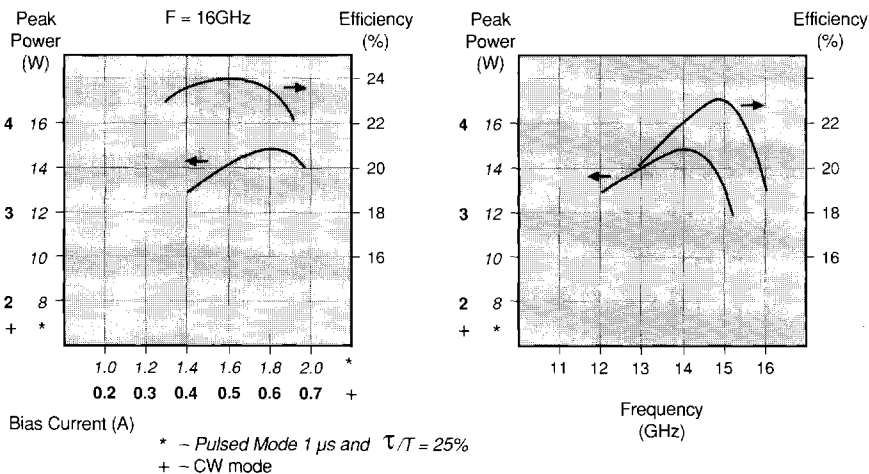
- (1) Measured at $I_R = 100\text{ mA}$
 (2) Peak values
 (3) Mean values

TECHNICAL DATA

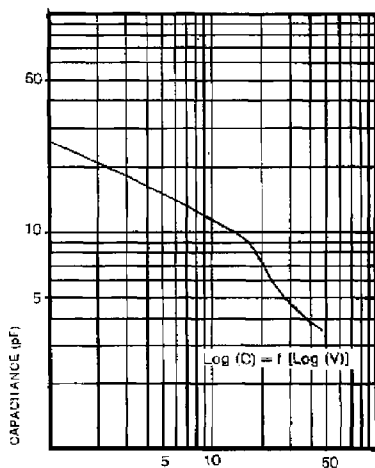
Since all IMPATT devices are susceptible to tuning induced failures (burn-out), it is always necessary to reduce the bias voltage before tuning for maximum power.

Caution : A severe load mismatch should be avoided to minimize RF burn out. The power supply should be carefully regulated to minimize voltage transients.

TYPICAL PERFORMANCE CURVES



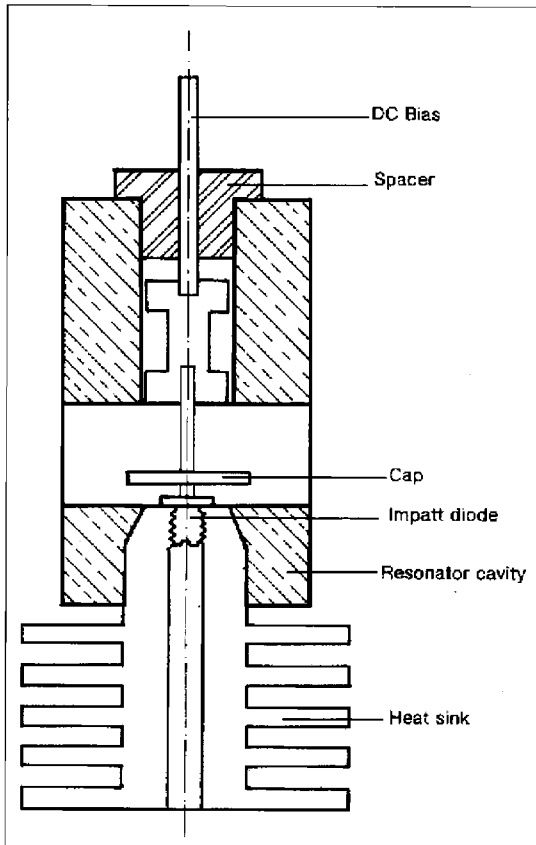
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PACKAGE AND DIODE MOUNTING PROCEDURE

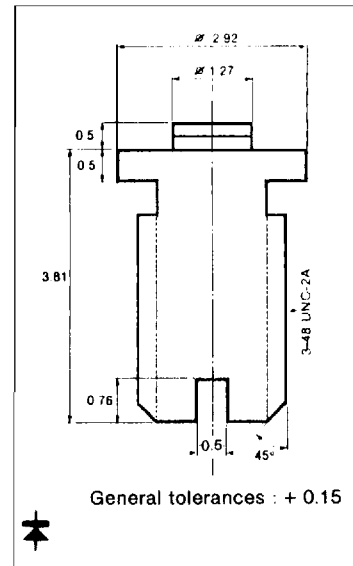
Diodes in style W4 package should be securely tightened into a clean sharply tapered 3-48 UNC-2A threaded hole in copper diode holders or heat sinks.

RADIAL RESONATOR CAVITY



PACKAGE

W4



All dimensions are in millimeter