

**Magnetron, Water Cooled 2M130
(GaSonics p/n 60-2025)**

APPROVALS			REVISIONS			
	INITIALS	DATE	REV	DESCRIPTION	DATE	APPR
Drawn	JFG	03FEB04	A	Production Release	09FEB04	JFG
Engineering			B	Revised filament lead length	12JUL07	JFG
Manufacturing			C	Filament lead length was 1.75"	07DEC07	JFG
Marketing						

1.0 General Description

This document describes a water cooled version of the Hitachi 2M130 magnetron that is specially designed for installation in semiconductor wafer fab tools manufactured by GaSonics (Novellus). The GAE version of this magnetron is a fully compatible replacement of GaSonics part number 60-2025 (Richardson Electronics p/n NL10250-17) and provides the same performance and life.

Two assembly configurations are available. Part number 911513 is the basic magnetron with Swagelok water connection fittings for installation into new equipment. Part number 911513-1 is the basic magnetron without water connection fittings and is intended for field replacement.

2.0 Reference Documents

911513 Assembly Drawing, Water-Cooled 2M130 Magnetron

3.0 Specifications**3.1 Absolute Maximum Ratings:**

ITEM	SYM	MIN	MAX	UNITS
Filament surge current	-	-	100	Aac
Filament voltage, Stand-by	Ef	4.4	5.0	Vac
Filament voltage, Ib = 725 mAdc	Ef	3.1	3.5	Vac
Filament warm-up	Tk	5	-	Sec
Anode voltage, peak	Ebm	-	4.3	kV
Anode current, peak	Ibm	-	2.1	A
Anode current, average	Ib	-	750	mAdc
Anode input power	Pi	-	2.6	kW
Load VSWR	ϕL	-	4	-
Anode core temperature	Tp	-	180	°C
Case temperature	Tcase	-	120	°C
Storage temperature	-	-30	60	°C

3.2 Test Conditions for Electrical Characteristics:

Power Supply Type	Single-phase, full-wave bridge rectifier without filter
Filament voltage	Ef = 4.6 Vac (stand-by), 3.3 Vac (Ib = 725 mAdc)
Average anode current	Ib = 725 mAdc
Load VSWR	$\phi L < 1.1$

3.3 Limits and Characteristics:

ITEM	CONDITION	SYM	BOGIE	MIN	MAX	UNITS
Filament current, stand-by	Tk=120sec min.	If	20	18.5	21.5	Aac
Anode voltage, peak		Ebm	4.00	3.85	4.20	kVp
Output power, average		Po	1930	1750	-	W
Frequency		fe	2455	2440	2470	MHz
Stability	$\phi L < 3$	ST	-	700	-	mAdc
Breakdown voltage		Et	-	10	-	kVdc

3.4 Mechanical:

Mounting studs:	M5
Cooling water connections	p/n 911513: 1/4" Swagelok® tube fittings p/n 911513-1: 7/16-20 SAE/MS straight thread boss for 1/4" Swagelok® positionable elbow
Cooling water flow	0.5 gpm min. @ 35 °C max. input temperature

4.0 Ordering Information

<u>Part Number</u>	<u>Description</u>
911513	Magnetron Assembly, Water-Cooled 2M130 (with Swagelok® fittings)
911513-1	Magnetron Assembly, Water-Cooled 2M130 (without Swagelok® fittings)

5.0 Outline Drawing

