

21B13
INERT GAS FILLED THYRATRON
TENTATIVE

GENERAL

The 21B13 is a xenon filled thyatron suitable for welding, motor control and other power applications. It has an indirectly heated oxide-coated cathode.

RATING

Heater voltage	V_h	5.0	V
Heater current	I_h	21	A
Maximum peak forward anode voltage		1.2	kV
Maximum peak inverse anode voltage	P.I.V.(max)	1.2	kV
Maximum mean cathode current (max averaging time 15 sec)	$I_k(av)_{max}$	10*	A
Maximum peak cathode current	$I_k(pk)_{max}$	100	A
Maximum surge cathode current (max duration 0.1 sec)		2000	A
Maximum anode voltage drop		18	V
Maximum anode voltage for conduction		70	V
Maximum negative grid voltage before conduction		-200	V
Maximum negative grid voltage after conduction		-10	V
Maximum grid resistance	$R_g(max)$	50	k Ω
Recommended minimum grid resistance	$R_g(min)$	10	k Ω
Minimum pre-heat time		120	s
Ambient temperature range		-55 to +75°C	

* The anode structure must be left free, to ensure adequate cooling by free convection.

INTER-ELECTRODE CAPACITANCES

Anode/grid	c_{a-g}	8.8	pF
Anode/cathode	c_{a-k}	0.15	pF
Grid/cathode	c_{g-k}	13.4	pF

CHARACTERISTICS

Approximate ionization time	10	μ s
Approximate recovery time ($V_g = -200V$)	50	μ s
Approximate recovery time ($V_g = -10V$)	500	μ s
Critical grid current (at $V_a = 1kV$)	<20	μ A
Control ratio	200 : 1	



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MOUNTING POSITION—Vertical, base down

DIMENSIONS

Maximum overall length	230 mm
Maximum diameter over bulb	70 mm
Maximum diameter over connectors	115 mm

CAP— $\frac{3}{16}$ " diameter

BASE—Special

CONNECTIONS

Anode—Cap

Grid—Flexible lead from body of valve

Heater—Copper strip on base with 2BA slot

Heater and Cathode—Copper strip on base with 0BA clearing hole