HALF-WAVE RECTIFIER

RR3-1250

Inert gas-filled half-wave rectifier for use in high voltage rectifier circuits.

This data should be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS—GAS FILLED RECTIFIERS, preceding this section of the handbook.

LIMITING VALUES (absolute ratings)

It is important that these limits are never exceeded and such variations as mains fluctuations, component tolerances and switching surges must be taken into consideration in arriving at actual valve operating conditions.

Max. peak inverse anode voltage	10	kV
Max. cathode current		
Peak	5.0	A
Average (max. averaging time 15s)	1.25	A
Surge (fault protection max. duration 0.1s)	50	A
Min. valve heating time	30	s
Max. operating frequency	150	c/s
Ambient temperature limits	−55 to +70	°C

CHARACTERISTICS

Electrical

Filament voltage	5.0	V
Average filament current at 5.0V	7.0	A
Anode voltage drop (Ia = 1.25A)	13	V

Mechanical

Type of cooling	Convection	
Mounting position	Any	
Max. net weight	8.0	oz
	220	g

FULL LOAD OPERATING CONDITIONS (for peak inverse voltage of 10kV and peak cathode current of 5.0A)

Circuit	No. of valves	Full load d.c. output (kV)	(A)	Applied a.c. volts ($kV_{r.m.s.}$)	Initial filter elements L min. (H)	C max. (μF)
Single phase full-wave	2	3.1	2.5	3.5 (per valve)	2.0	10
Single phase bridge	4	6.3	2.5	7.0 (total)	4.0	5.0
Three phase half-wave	3	4.1* (4.7)	3.75	3.5* (4.1) (per phase)	1.5	4.0
Three phase	6	9.5	3.75	4.1 (per phase)	2.0	2.5

*These figures take into account the increase in peak inverse voltage which occurs if the power supply is lightly loaded. For operation with a constant load the voltage may be increased to the value shown in brackets.

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