



ELECTRONIC TUBE REFERENCE

3R280E

Power - Triode (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TRIODE

Massive water-cooled industrial triode designed for Class C RF-heating oscillator service. Rated for 30 kW plate dissipation, with published conditions producing approximately 61-91 kW RF output at frequencies to about 10 MHz.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	8 V / 300 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Triode	
TRANSCONDUCTANCE	0.075 S
AMPLIFICATION FACTOR	24
MAXIMUM PLATE VOLTAGE	13000 V
MAXIMUM PLATE DISSIPATION	30000 W
MAXIMUM GRID DISSIPATION	1000 W
Published maximum ratings and characteristics audited; remaining values retained densely in parameter table.	

The 3R280E is a water-cooled industrial triode for high-power class-C industrial heating oscillator service.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1962 ITT

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1962 ITT

Section 1 · Triode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filament voltage [1]	8 V	Filament voltage 8 (45%) V
Filament voltage [2]	45 V	Filament voltage 8 (45%) V
Filament current, nominal (Note [1])	1 A	Filament current, nominal (Note 1) 300 A
Filament current, nominal (Note [2])	300 A	Filament current, nominal (Note 1) 300 A
NOTE [1]	1 ohm	NOTE 1.--1: is recommended that some resistance or reactance be introduced into the
NOTE [2]	-1 ohm	NOTE 1.--1: is recommended that some resistance or reactance be introduced into the
Mutual conductance	75 uS	Mutual conductance 75 mA/Y
Grid to anode	50	Grid to anode 50 pF
Grid to filanrent	110	Grid to filanrent 110 pF
Anode [1]	10	Anode 10 filament 2 pF
Anode [2]	2	Anode 10 filament 2 pF
CN	2	CN-2A Filament connector, smaller
CN	2	CN-2B Filament connector, larger
CN	2	CN-2C Grid connector
voltage plus ripple) o,	13 kV	voltage plus ripple) o, 13 kV
Maximum direct anode current	10 mA	Maximum direct anode current 10 A
Maximum direct anode dissipation (continuous)	30 kW	Maximum direct anode dissipation (continuous) 30 kw
Maximum direct grid dissipation (continuous)	1 kW	Maximum direct grid dissipation (continuous) 1 kW
Maximum negative grid bias	15	Maximum negative grid bias 15 kY

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum frequency for above ratings	10 MHz	Maximum frequency for above ratings 10 MHz
Direct anode volt;je [1]	8 kV	Direct anode volt;je 8-5 10 12 kv
Direct anode volt;je [2]	-5 kV	Direct anode volt;je 8-5 10 12 kv
Direct anode volt;je [3]	10 kV	Direct anode volt;je 8-5 10 12 kv
Direct anode volt;je [4]	12 kV	Direct anode volt;je 8-5 10 12 kv
Direct grid voltage [1]	610 V	Direct grid voltage 610 — 670 - 760 \4
Direct grid voltage [2]	670 V	Direct grid voltage 610 — 670 - 760 \4
Direct grid voltage [3]	760 V	Direct grid voltage 610 — 670 - 760 \4
Direct grid voltage [4]	4 V	Direct grid voltage 610 — 670 - 760 \4
Direct anode current [1]	10 A	Direct anode current 10 10 10 A
Direct anode current [2]	10 A	Direct anode current 10 10 10 A
Direct anode current [3]	10 A	Direct anode current 10 10 10 A
Peak r.f. grid voltage [1]	1060 V	Peak r.f. grid voltage 1060 1120 1210 \
Peak r.f. grid voltage [2]	1120 V	Peak r.f. grid voltage 1060 1120 1210 \
Peak r.f. grid voltage [3]	1210 V	Peak r.f. grid voltage 1060 1120 1210 \
Direct grid current (Note [1])	2 A	Direct grid current (Note 2) 1-4 1-37 131 A
Direct grid current (Note [2])	1 A	Direct grid current (Note 2) 1-4 1-37 131 A
Direct grid current (Note [3])	-4 A	Direct grid current (Note 2) 1-4 1-37 131 A
Direct grid current (Note [4])	1 A	Direct grid current (Note 2) 1-4 1-37 131 A
Direct grid current (Note [5])	-37 A	Direct grid current (Note 2) 1-4 1-37 131 A
Direct grid current (Note [6])	131 A	Direct grid current (Note 2) 1-4 1-37 131 A
Grid resistor [1]	435	Grid resistor 435 490 575 Q
Grid resistor [2]	490	Grid resistor 435 490 575 Q
Grid resistor [3]	575	Grid resistor 435 490 575 Q
Grid dissipation (Note [1])	2 W	Grid dissipation (Note 2) 600 600 600 W
Grid dissipation (Note [2])	600 W	Grid dissipation (Note 2) 600 600 600 W
Grid dissipation (Note [3])	600 W	Grid dissipation (Note 2) 600 600 600 W
Grid dissipation (Note [4])	600 W	Grid dissipation (Note 2) 600 600 600 W

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Anode dissipation [1]	24 kW	Anode dissipation 24 26 29 kW
Anode dissipation [2]	26 kW	Anode dissipation 24 26 29 kW
Anode dissipation [3]	29 kW	Anode dissipation 24 26 29 kW
Power input [1]	85 kW	Power input 85 100 120 kW
Power input [2]	100 kW	Power input 85 100 120 kW
Power input [3]	120 kW	Power input 85 100 120 kW
Power output {oscillator} [1]	61 kW	Power output {oscillator} . 61 74 91 kW
Power output {oscillator} [2]	74 kW	Power output {oscillator} . 61 74 91 kW
Power output {oscillator} [3]	91 kW	Power output {oscillator} . 61 74 91 kW
Power into load at [1]	85 kW	Power into load at 85%; transfer efficiency 52 63 77-5 kW
Power into load at [2]	52 kW	Power into load at 85%; transfer efficiency 52 63 77-5 kW
Power into load at [3]	63 kW	Power into load at 85%; transfer efficiency 52 63 77-5 kW
Power into load at [4]	77 kW	Power into load at 85%; transfer efficiency 52 63 77-5 kW
Power into load at [5]	-5 kW	Power into load at 85%; transfer efficiency 52 63 77-5 kW

TUBE TINKER

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