



Triode Type DET 27

(HF AMPLIFIER AND OSCILLATOR, AND AF AMPLIFIER)

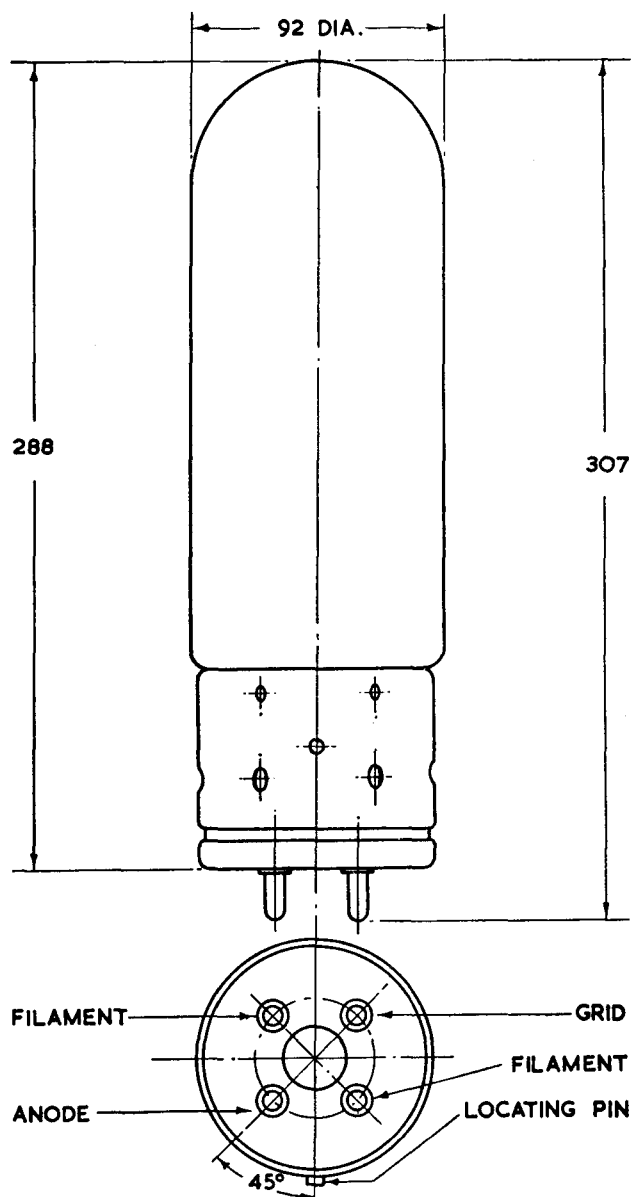
General. The DET 27 is a triode fitted with a thoriated tungsten filament. The valve is suitable for use as a power amplifier or oscillator at frequencies up to 3 Mc/s or as an audio power amplifier.

Cooling. Adequate ventilation must be provided. The temperature at the hottest part of the bulb must not exceed 250°C.

Mounting. The valve must be mounted vertically with the anode uppermost.

APPROXIMATE DATA

V_f		10	V
I_f		10	A
$V_{a(max)}$		2.7	kV
$V_{a(pk)(max)}$		6	kV
$I_{gl(rf)(max)}$		2	A
$P_{a(max)}$		250	W
$P_{gl(max)}$		20	W
$I_{k(pk)(max)}$		4	A
r_a	$\left. \begin{array}{l} \\ \\ \end{array} \right\} \text{ taken at } V_a$ I_a	700 V	$\left\{ \begin{array}{l} 2,450 \\ 22 \\ 9 \end{array} \right.$ Ω
μ		150 V	
g_m			
g_m (taken at $\frac{1}{2} I_{k(pk)}$)		21	mA/V
C_{a-f}		7.5	pF
C_{a-gl}		24	pF
C_{gl-f}		14	pF



WEIGHT 23 oz. (0.65 kg.)

DIMENSIONS IN MM. MAXIMUM.

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(1) RF POWER AMPLIFIER AND OSCILLATOR. CLASS C TELEGRAPHY

(Unmodulated, one valve, key down conditions)

Maximum Ratings

V_a	2	kV
V_{g1}	-300	V
I_a	500	mA
P_a	250	W
P_{g1}	20	W

Typical Operation

V_a	2	kV
V_{g1}	-190	V
$V_{g1(pk)}$	315	V
I_a	450	mA
I_{g1} (a)	40	mA
Z_a	2,100	Ω
P_{dr} (a)	15	W
P_a	250	W
P_{out}	650	W
P_{load} (b)	550	W

(2) RF POWER AMPLIFIER. CLASS C.

(Anode modulated, carrier conditions, one valve, 100% modulation.)

Maximum Ratings

V_a	1.6	kV
V_{g1}	-300	V
I_a	400	mA
P_a (c)	165	W
P_{g1}	20	W

Typical Operation

V_a	1.6	kV
V_{g1}	-150	V
$V_{g1(pk)}$	260	V
I_a	325	mA
I_{g1} (a)	30	mA
Z_a	2,400	Ω
P_{dr} (a)	9	W

P_a	165	W
P_{out}	355	W
P_{load} (b)	300	W

(3) AF AMPLIFIER. CLASS AB1

(Conditions per pair of valves unless otherwise stated.)

Note. The power supply impedance should not exceed 400 Ω .

$V_{a(zero-sig)}$	2.2	2.7	kV
$V_{a(max-sig)}$	2	2.5	kV
V_{g1}	-80	-115	V
$V_{in(pk)(g_1'-g_1'')}$	180	230	V
$I_a(zero-sig)$	100	120	mA
$I_a(max-sig)$	300	360	mA
$P_a(zero-sig)$ per valve	110	160	W
$P_a(max-sig)$ per valve	190	250	W
R_L	10	12	k Ω
P_{out}	250	400(d)	W
D	< 5	5	%

(4) AF AMPLIFIER. CLASS AB2

(Conditions per pair of valves unless otherwise stated.)

Note. The power supply impedance should not exceed 400 Ω .

$V_{a(zero-sig)}$	2.2	2.7	kV
$V_{a(max-sig)}$	2	2.5	kV
V_{g1}	-80	-115	V
$V_{in(pk)(g_1'-g_1'')}$	350	400	V
$I_a(zero-sig)$	100	120	mA
$I_a(max-sig)$	480	530	mA
$I_{g1(max-sig)}$	30	30	mA
$P_a(zero-sig)$ per valve	110	160	W
$P_a(max-sig)$ per valve (c)	160	210	W
R_L	10	12	k Ω
P_{out}	650	900(d)	W
D	< 6	6	%

NOTES

- Subject to wide variation.
- Assuming a circuit transfer efficiency of 85%.
- If the mean depth of modulation is low, higher values of P_a may be permissible. The value of P_a under modulated conditions, must never exceed 250 W.
- This valve may vary by $\pm 6\%$.
- $P_{a(max)}$, under class AB2 push-pull conditions, occurs at approximately half full output.

