



# Triode Type DET 3

(MF AMPLIFIER)

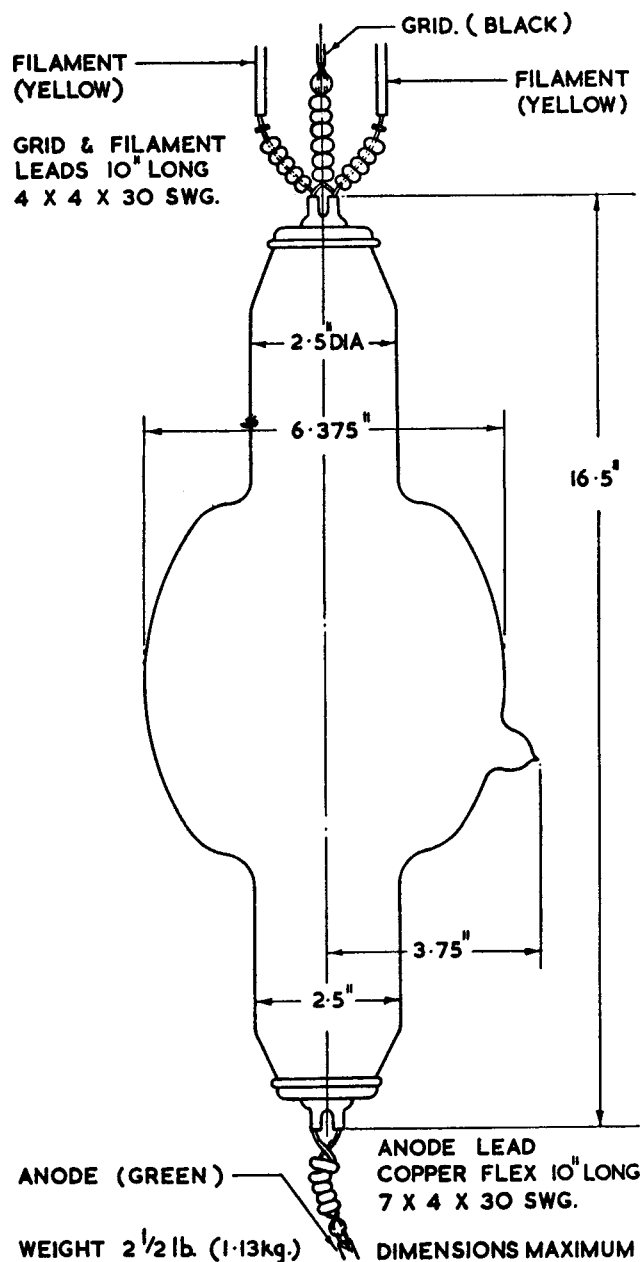
**General.** The DET 3 is a transmitting triode fitted with a thoriated tungsten filament, designed for use at frequencies up to 3 Mc/s.

**Mounting.** The valve must be mounted vertically with the anode seal either up or down.

## APPROXIMATE DATA

$V_f$	15.0	V
$I_f$	4.0	A
$V_{a(max)}$	3.0	kV
$P_{a(max)}$	250	W
$I_k (pk)$	2.5	A
$I_{gl(max)}$	50	mA
$\mu$	taken at $V_a$ 1 kV $P_a$ 200 W	{ 19 6 mA/V 9 mA/V
$g_m$		
$g_m$ *taken at $\frac{1}{2} I_k(pk)$		
$C_{a-gl}$	17	pF
$C_{a-k}$	2	pF
$C_{gl-k}$	18	pF

\*No attempt should be made to measure these figures statically.



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**Typical Operation**

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

*(Unmodulated, one valve, key down conditions)*

$V_a$	2,000	2,500	3,000	V
$V_{gl}$	-240	-270	-300	V
$v_{gl(pk)}$	430	450	480	V
$I_a$	320	320	300	A
$I_{gl}$	37	32	30	mA
$Z_a$	2,700	3,500	4,750	$\Omega$
$R_{gl}$	6,500	8,500	10,000	$\Omega$
$P_{dr}$	20	20	20	W
$p_a$	220	240	240	W
$P_{out}$	420	560	660	W

**(2) RF AMPLIFIER. CLASS C**

*(Grid modulated, one valve, carrier conditions, permissible modulation 100%)*

$V_a$	2,000	2,500	3,000	V
$V_{gl}$	-185	-220	-250	V
$v_{gl(pk)}$	250	260	270	V
$v_{mod(pk)}$	100	100	105	V
$I_a$	170	150	130	mA
$I_{gl}$ (a)	3.5	2.5	1.8	mA
$Z_a$	2,750	3,850	5,500	$\Omega$
$Z_{to\ mod}$	2,500	3,000	3,500	$\Omega$
$P_{dr}$ (a) (b)	12	10	10	W
$p_a$	225	245	245	W
$P_{mod}$ (c)	2	1.7	1.5	W
$P_{out}$	115	130	145	W

**(3) RF AMPLIFIER. CLASS C**

*(Anode modulated, one valve, permissible modulation 100%)*

$V_a$	2,000	2,400	V
$I_{gl}$	-220	-250	V
$v_{gl(pk)}$	370	400	V
$I_a$	230	230	mA
$I_{gl}$ (a)	28	28	mA
$Z_a$	4,200	5,200	$\Omega$
$Z_{to\ mod}$	8,700	10,500	$\Omega$
$P_{dr}$ (a)	15	15	W
$p_a$	135	152	W
$P_{mod}$ (c)	230	276	W
$P_{out}$	325	400	W

**(4) RF POWER AMPLIFIER. CLASS B TELEPHONY**

*(One valve, carrier conditions, permissible modulation 100%)*

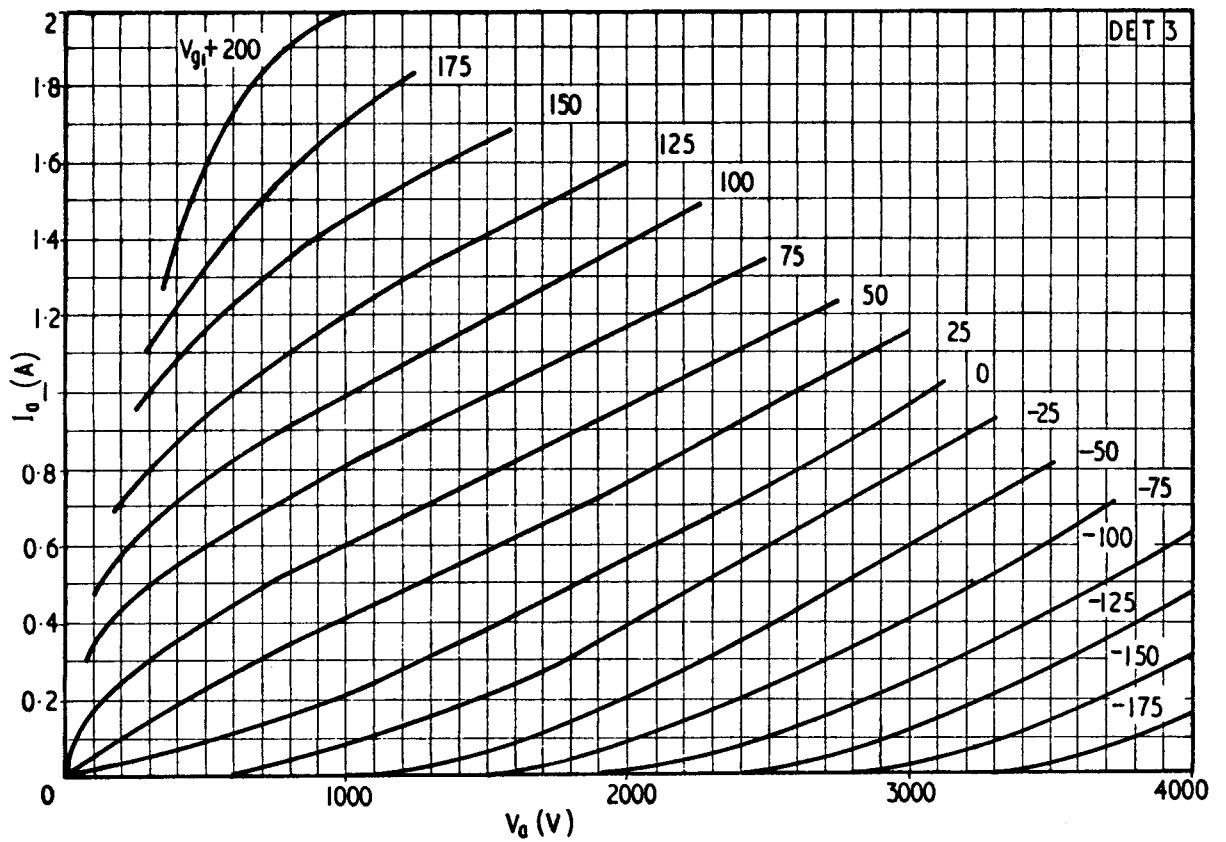
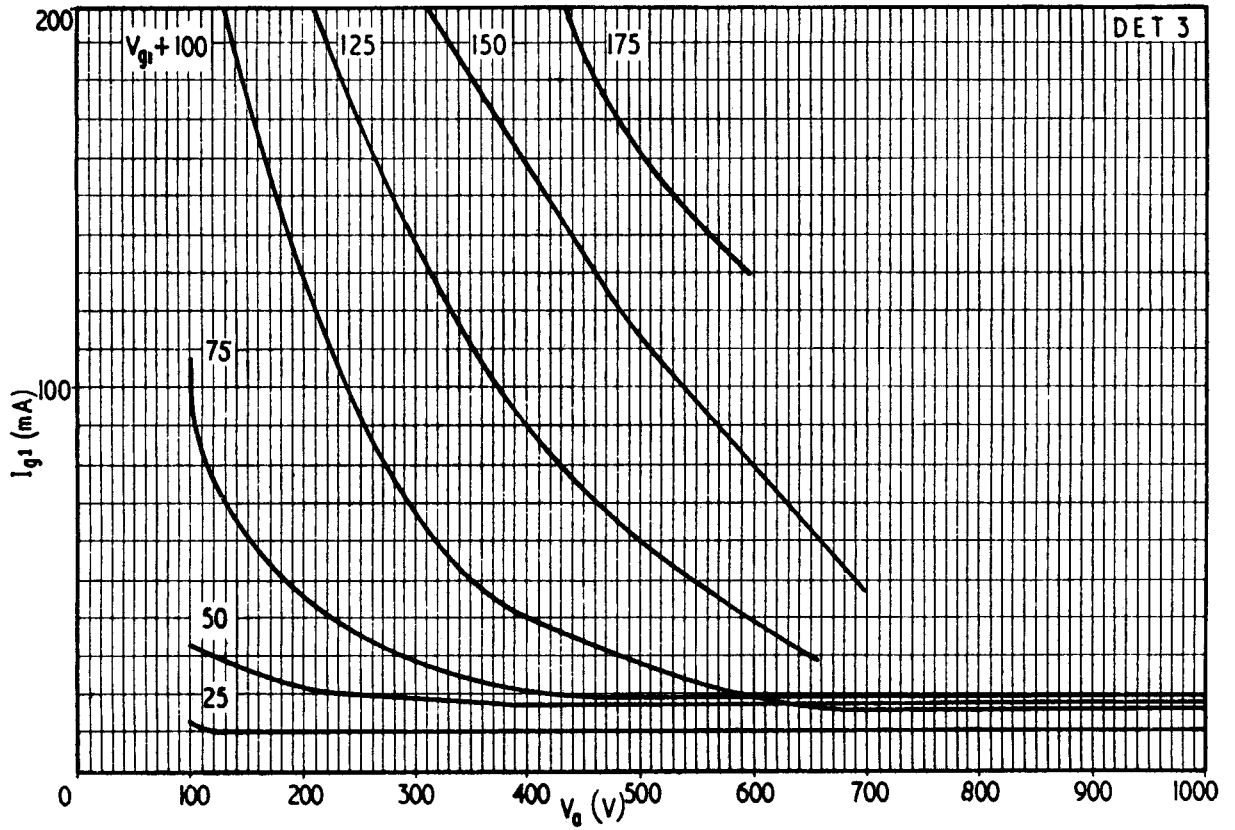
$V_a$	2,000	2,500	3,000	V
$V_{gl}$	-90	-120	-150	V
$v_{gl(pk)}$	127	132	135	V
$I_a$	175	145	120	mA
$I_{gl}$ (a)	3	1	0	mA
$Z_a$	3,000	5,000	7,000	$\Omega$
$P_{dr}$ (a) (b)	10	7.5	7.5	W
$p_a$	245	247	244	W
$P_{out}$	105	115	116	W

**NOTES**

(a) Subject to wide variation. The figures are approximate only.

(b) At crest of audio cycle with 100% modulation.

(c) 100% modulation.





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