Ordering number: EN1651B

Thick Film Hybrid IC

STK4191V

AF Power Amplifier (Split Power Supply) (50W + 50W min, THD = 0.08%)

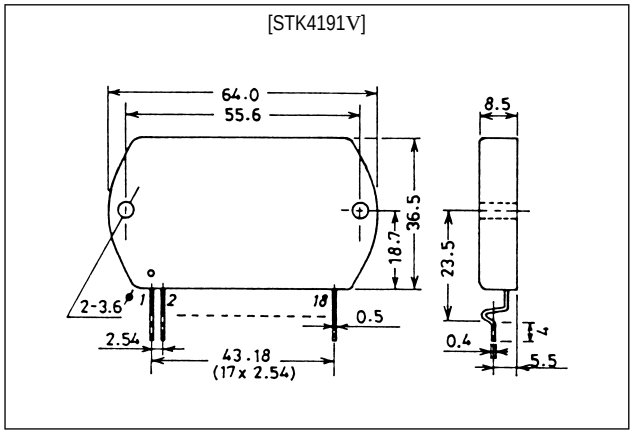
Features

- Built-in muting circuit to cut off various kinds of pop noise.
- Greatly reduced heat sink due to substrate temperature 125°C guaranteed.
- Distortion 0.08% due to current mirror circuit.
- Pin-compatible with the STK4101II series. The STK4101V series use the same package and are available for output 6W to 50W.
- Excellent cost performance.

Package Dimensions

unit: mm

4040



Specifications

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		±53	V
Thermal resistance	θj-c		1.8	°C/W
Junction temperature	Tjmax		150	°C
Operating substrate temperature	Tc		125	°C
Storage temperature	Tstg		–30 to +125	°C
Available time for load short-circuit	t_s	V_{CC} = ±35.5V, R_L = 8Ω, f = 50Hz, P_O = 50W	2	s

Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		±35.5	V
Load resistance	R_L		8	Ω

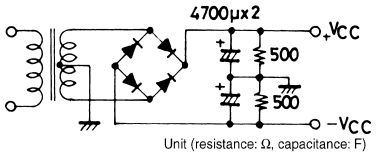
Operating Characteristics at Ta = 25°C, V_{CC} = ±35.5V, R_L = 8Ω (non-inductive), Rg = 600Ω, VG = 40 dB unless otherwise specified, at specified test circuit (based on sample application circuit)

Parameter	Symbol	Conditions	min	typ	max	Unit
Quiescent current	I_{CCO}	V_{CC} = ±42.5V	20	40	100	mA
Output power	P_O (1)	f = 20Hz to 20kHz, THD = 0.08%	50			W
	P_O (2)	V_{CC} = ±32V, f = 1kHz, THD = 0.2%, R_L = 4Ω	55			W
Total harmonic distortion	THD	f = 1kHz, Po = 1W			0.08	%
Frequency response	f_L, f_H	P_O = 1W, $^{+0}_{-3}$ dB		20 to 50k		Hz
Input impedance	r_i	f = 1kHz, P_O = 1W		55		kΩ
Output noise voltage	V_{NO}	V_{CC} = ±42.5V, Rg = 10kΩ			1.2	mVrms
Neutral voltage	V_N	V_{CC} = ±42.5V	-70	0	+70	mV
Muting voltage	V_M		-2	-5	-10	V

Note : For Power supply at the time of test, use a constant-voltage power supply unless otherwise specified.

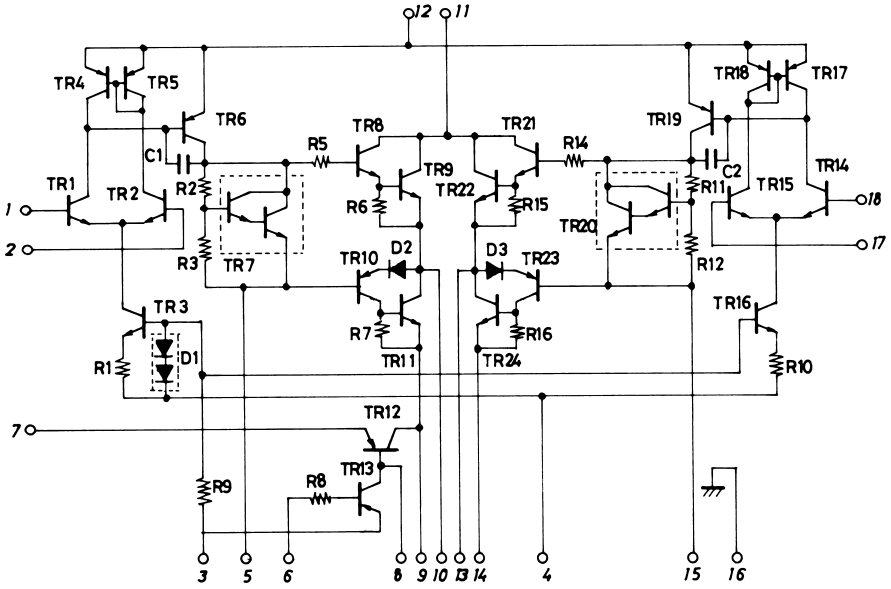
* For measurement of the available time for load short-circuit and output noise voltage, use the specified transformer power supply shown right.

** The output noise voltage is represented by the peak value on rms scale (VTVM) of average value indicating type. For AC power supply, use an AC stabilized power supply (50Hz) to eliminate the effect of flicker noise in AC primary line.

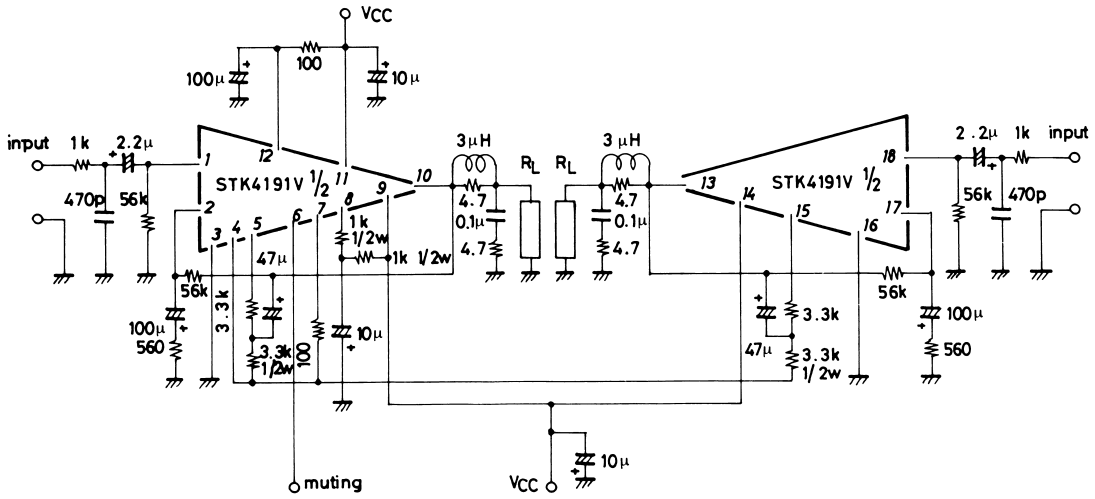


Specified transformer power supply
(Equivalent to MG-200)

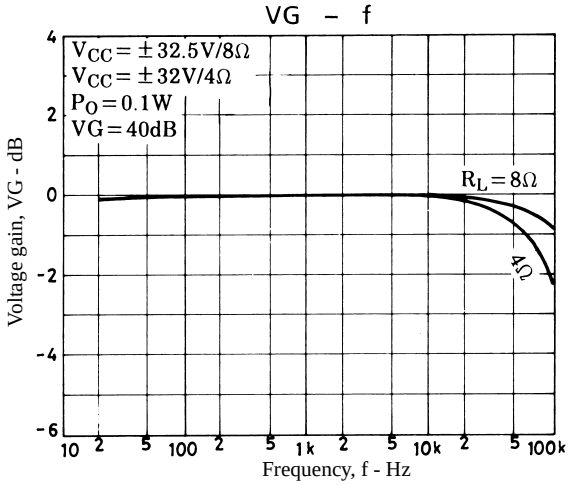
Equivalent Circuit

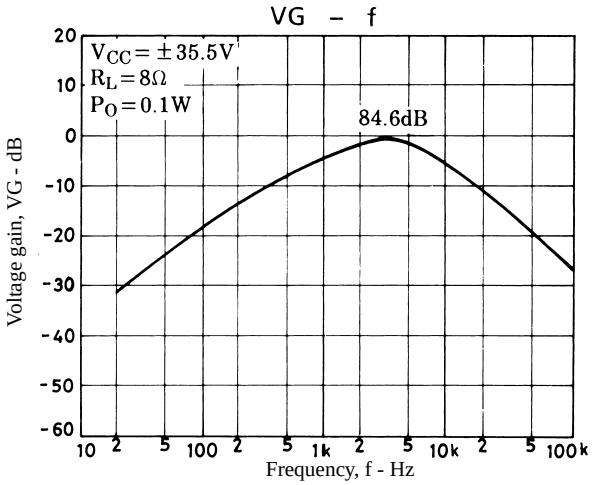


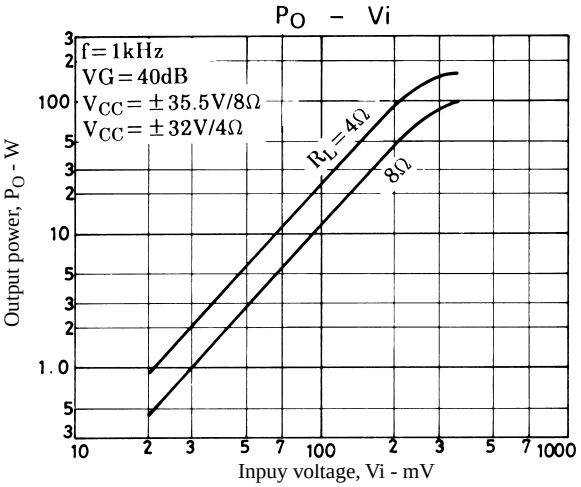
Sample Application Circuit : 50W min AF Power Amplifier (2 channels)

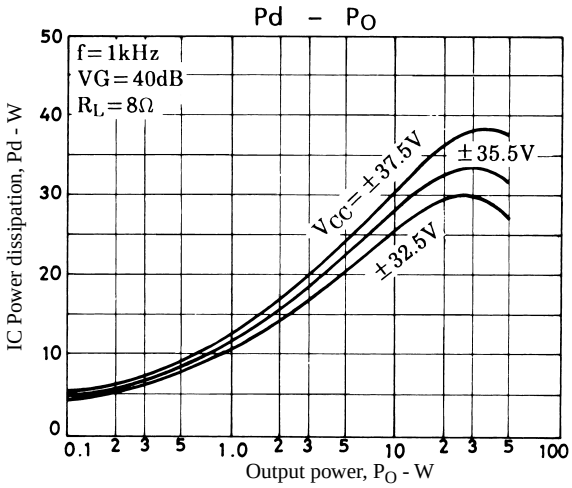


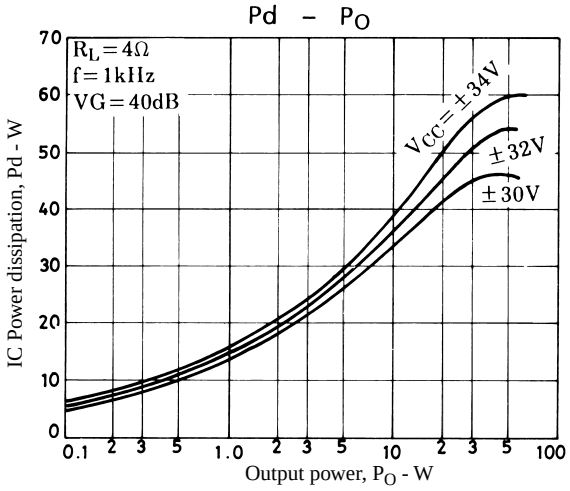
Unit (resistance: Ω, capacitance: F)

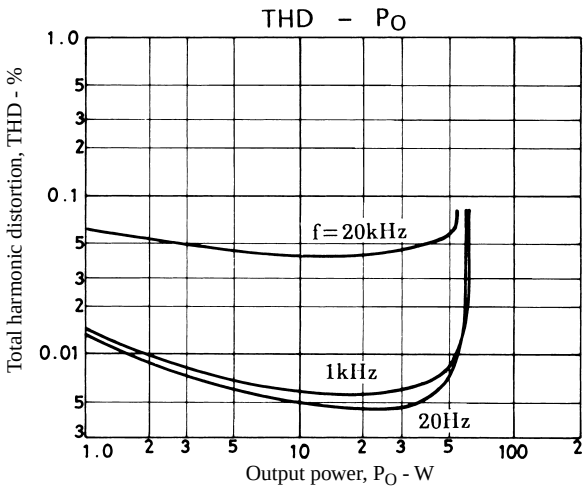


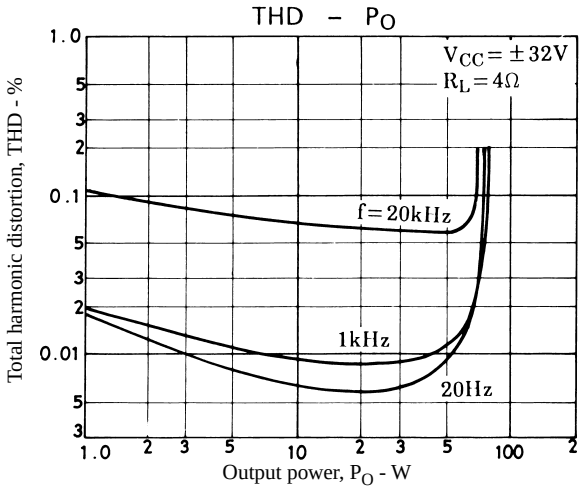


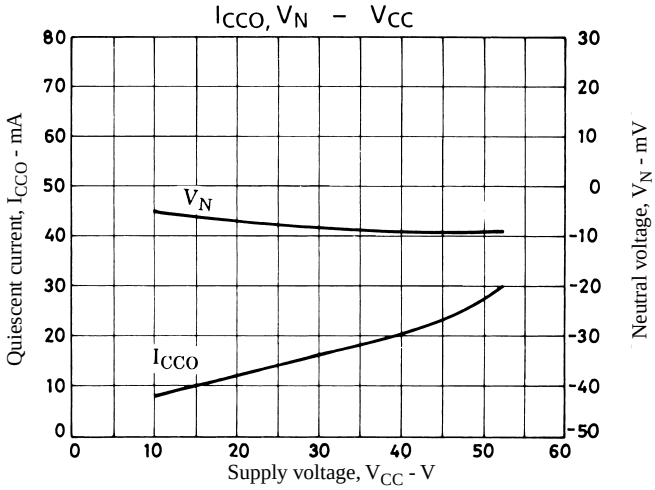


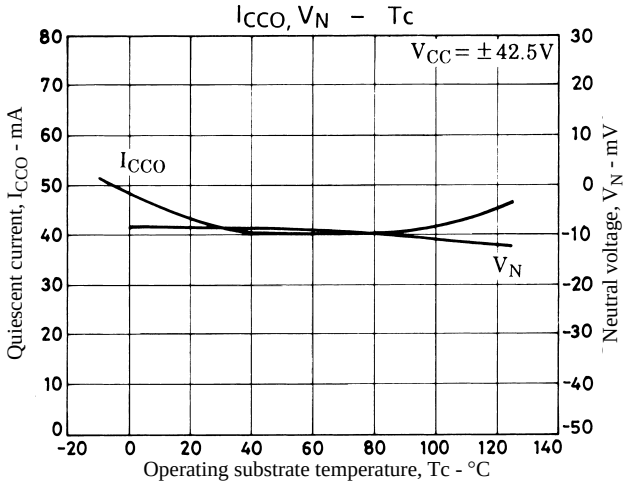


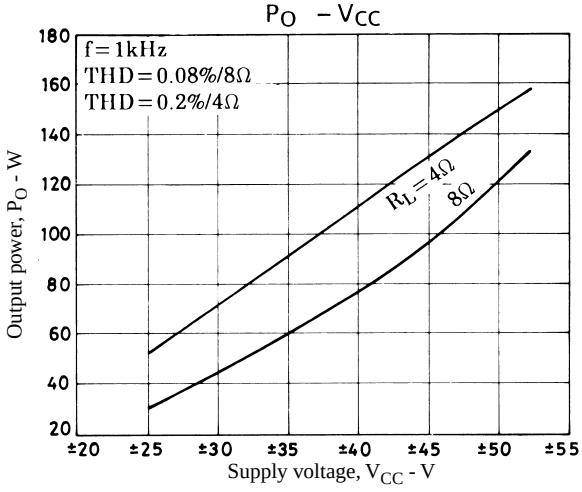

Pd – PO
RL = 4Ω
f = 1kHz
VG = 40dB
VCC = ±34V
±32V
±30V
IC Power dissipation, Pd - W
Output power, PO - W


THD – PO
f = 20kHz
1kHz
20Hz
Total harmonic distortion, THD - %
Output power, PO - W


THD – PO
VCC = ±32V
RL = 4Ω
f = 20kHz
1kHz
20Hz
Total harmonic distortion, THD - %
Output power, PO - W


ICCO, VN – VCC
VN
ICCO
Quiescent current, ICCO - mA
Neutral voltage, VN - mV
Supply voltage, VCC - V


ICCO, VN – Tc
VCC = ±42.5V
ICCO
VN
Quiescent current, ICCO - mA
Neutral voltage, VN - mV
Operating substrate temperature, Tc - °C


PO – VCC
f = 1kHz
THD = 0.08%/8Ω
THD = 0.2%/4Ω
RL = 4Ω
8Ω
Output power, PO - W
Supply voltage, VCC - V