Ordering number: EN 1649C

Thick Film Hybrid IC

STK4141V

AF Power Amplifier (Split Power Supply) (25W + 25W min, THD = 0.08%)

Features

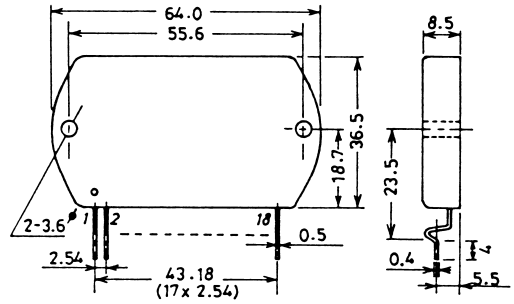
- The STK4102II series (THD=0.4%), STK4201V series (THD=0.08%) and STK4141X series (THD=0.02%) are pin-compatible. Once the PCB pattern is designed, you can easily satisfy the repuirements for new sets simply by changing the IC.
- Built-in muting circuit to cut off various kinds of pop noise.
- Greatly reduced heat sink due to substrate temperature 125°C guaranteed.
- Current mirror circuit application reduces distortion to 0.08%.

Package Dimensions

unit: mm

4040

[STK4141V]



Specifications

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		±40.5	V
Thermal resistance	θj-c		2.6	°C/W
Junction temperature	Tj		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} = ±27V, R_L = 8Ω, f = 50Hz, P_O = 25W	2	s

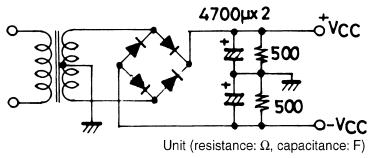
Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		±27.0	V
Load resistance	R_L		8	Ω

Operating Characteristics at Ta = 25°C, V_{CC} = ±27.0, R_L = 8Ω(non-inductive), Rg = 600Ω, VG = 40dB

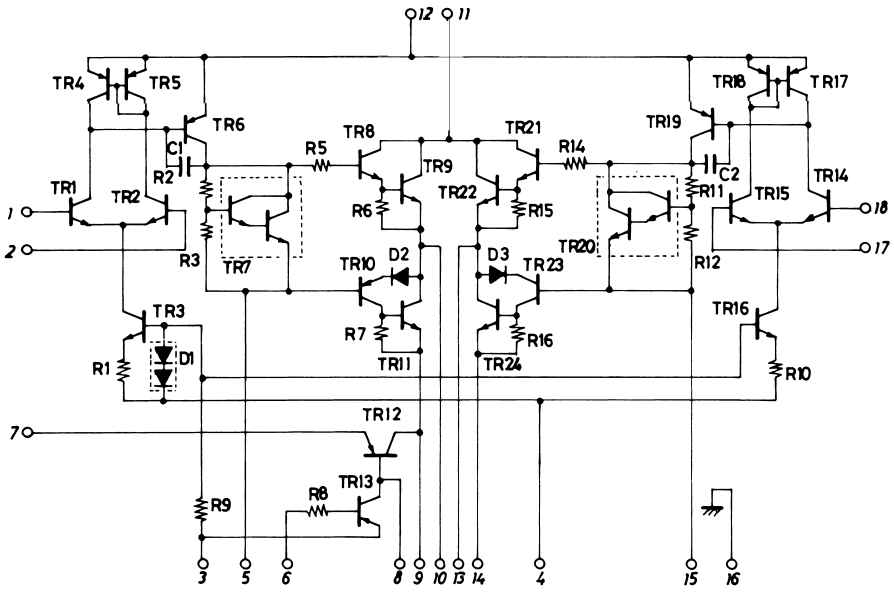
Parameter	Symbol	Conditions	min	typ	max	Unit
Quiescent current	I_{CCO}	V_{CC} = ±32.5V	20	40	100	mA
Output power	P_O1	f = 20Hz to 20kHz, THD = 0.08%	25			W
	P_O2	V_{CC} = ±24V, f = 1kHz, THD = 0.2%, R_L = 4Ω	25			W
Total harmonic distortion	THD	f = 1kHz, P_O = 1W			0.08	%
Frequency response	f_L, f_H	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} = ±32.5V, Rg = 10kΩ			1.2	mVrms
Neutral voltage	V_N	V_{CC} = ±32.5V	–70	0	+70	mV
Muting voltage	V_M		-2	-5	-10	V

Notes. 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 below.
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.

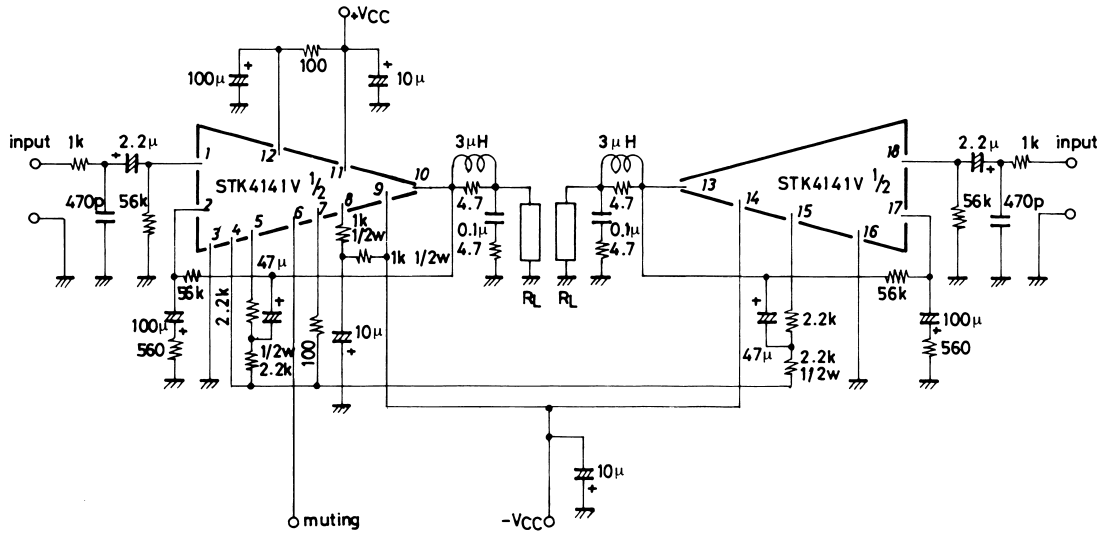


Specified Transformer Power Supply
(Equivalent to RP-25)

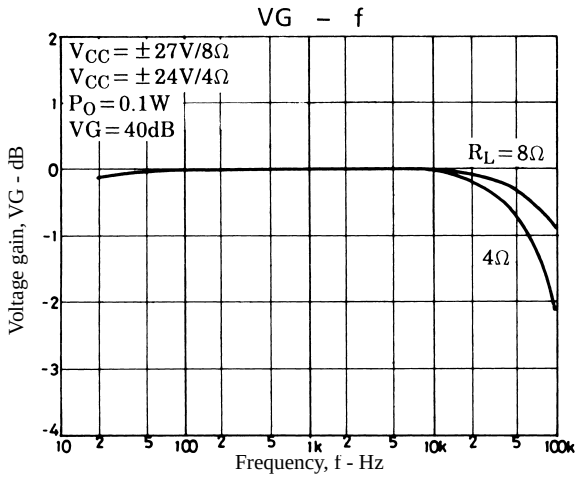
Equivalent Circuit

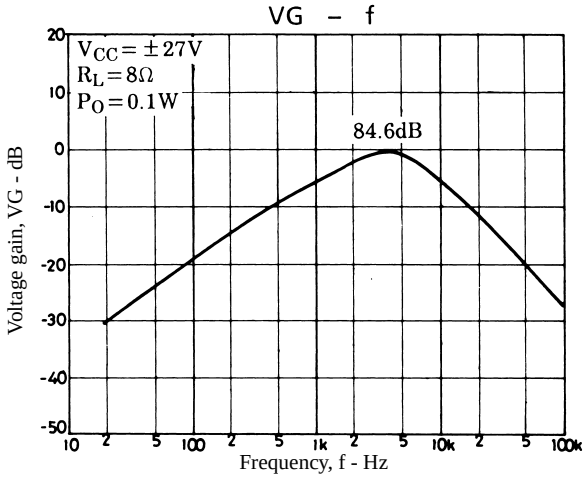


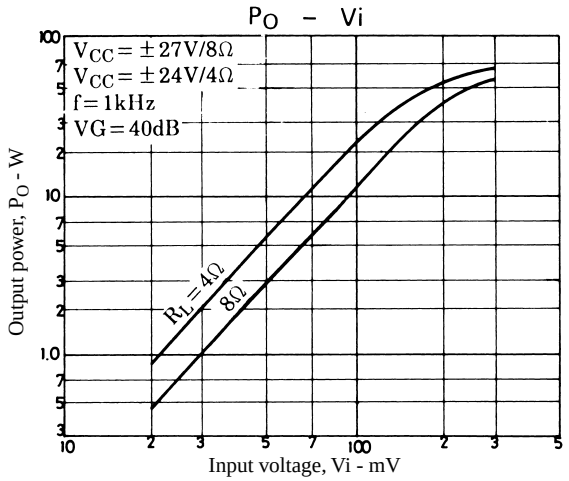
Sample Application Circuit: 25W min AF Power Amplifier (2channels)

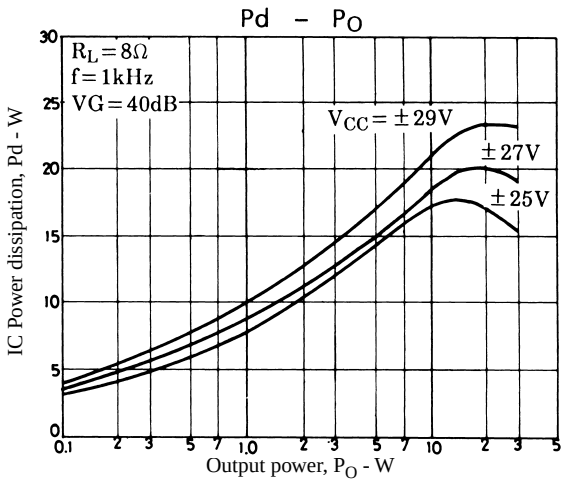


Unit (resistance: Ω, capacitance: F)

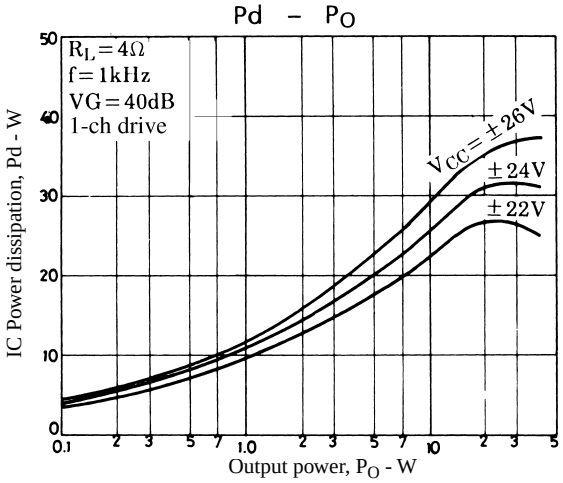




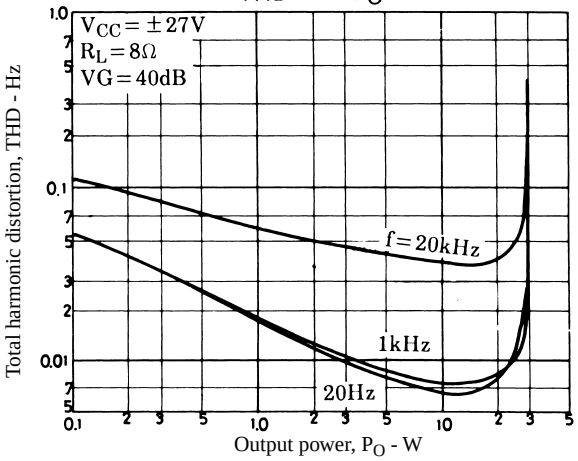




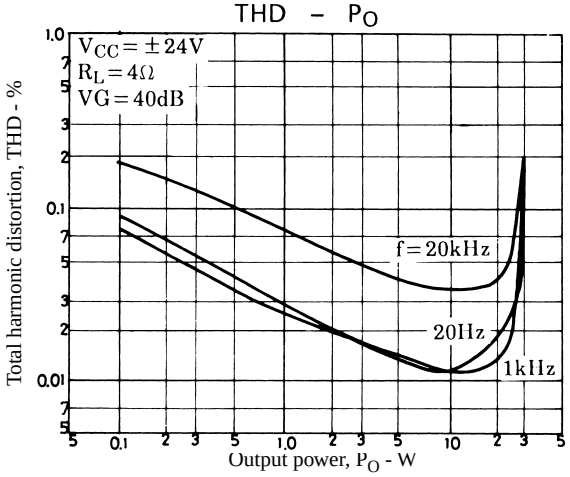
Pd – P_O



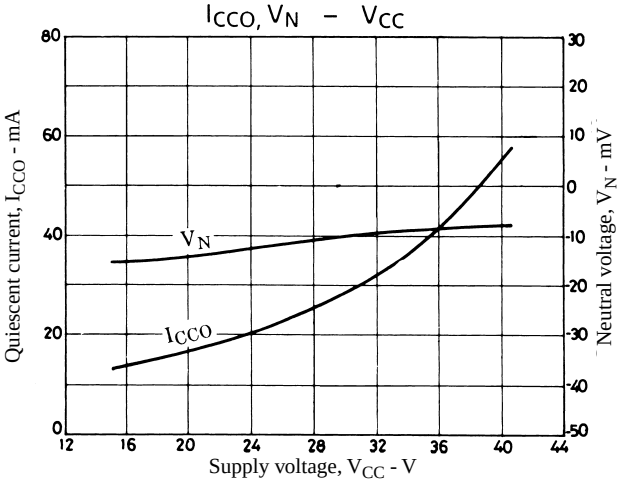
THD – P_O



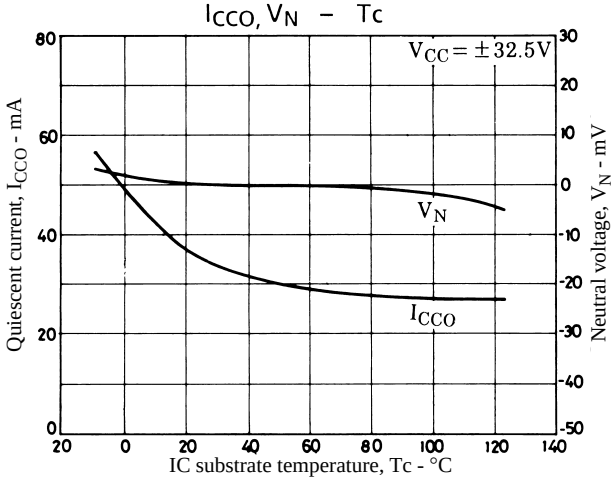
THD – P_O



I_{CCO}, V_N – V_{CC}



I_{CCO}, V_N – Tc



P_O – V_{CC}