Thick Film Hybrid IC



### Features

- Compact package for thin-type audio sets
- Member of pin-compatible series with outputs of 20 to 200W
- Easy heatsink design to disperse heat generated in thintype stereo sets
- Constant-current circuit to reduce supply switch-on and switch-off shock noise
- External supply switch-on and switch-off shock noise muting, load short-circuit protection, thermal shutdown and other circuits can be tailor-designed.

### **Package Dimensions**

unit: mm

#### 4033



## **Specifications**

## Maximum Ratings at $Ta = 25^{\circ}C$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V <sub>CC</sub> max		±52	V
Thermal resistance	Өј-с		1.8	°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 <sup>1</sup>	t <sub>s</sub>	$V_{CC} = \pm 35V, R_L = 8\Omega,$ f = 50Hz, P <sub>O</sub> = 50W	2	S

#### Recommended Operating Conditions at $Ta = 25^{\circ}C$

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V <sub>CC</sub>		±35	V
Load resistance	RL		8	Ω

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Parameter	Symbol	Conditions	min	typ	max	Unit
Quiescent current	Icco	$V_{CC} = \pm 42V$	10	20	50	mA
Output power	P <sub>O</sub> (1)	THD = 0.4%, f = 20Hz to 20kHz	50	-	-	W
	P <sub>O</sub> (2)	$V_{CC} = \pm 31V, THD = 1.0\%,$ $R_L = 4\Omega, f = 1kHz$	55	-	-	W
Total harmonic distortion	THD	P <sub>O</sub> = 1.0W, f = 1kHz	-	-	0.3	%
Frequency response	f <sub>L</sub> , f <sub>H</sub>	$P_0 = 1.0W, {}^{+0}_{-3} dB$	-	20 to 50k	-	Hz
Input impedance	r <sub>i</sub>	P <sub>O</sub> = 1.0W, f = 1kHz	-	55	-	kΩ
Output noise voltage <sup>2</sup>	V <sub>NO</sub>	$V_{CC} = \pm 42V$ , Rg = 10k $\Omega$	-	-	1.2	mVrms
Neutral voltage	V <sub>N</sub>	$V_{CC} = \pm 42V$	-70	0	+70	mV

# **Operating Characteristics** at Ta = 25°C, $V_{CC}$ = ±35V, $R_L$ = 8 $\Omega$ (noninductive load), Rg = 600 $\Omega$ , VG = 40dB

Notes.

All tests are measured using a constant-voltage supply unless otherwise specified.

1. Output noise voltage is measured using the transformer supply specified below.

2. The output noise voltage is the peak value of an average-reading meter with an rms value scale. The noise voltage waveform does not inlcude any pulse noise.

#### Specified Transformer Supply (MG-200 or Equivalent)



# **Equivalent Circuit**





#### Sample Application Circuit (50W min AF Power Amplifier)

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