Ripple filter for portable CD players
BA3990F

The BA3990F is a ripple filter for portable CD players that operate off two batteries.

●Applications
Portable CD players and headphone stereos

●Features
1) Facilitates ripple filter design.
2) Low current consumption.

●Absolute maximum ratings (Ta = 25°C)

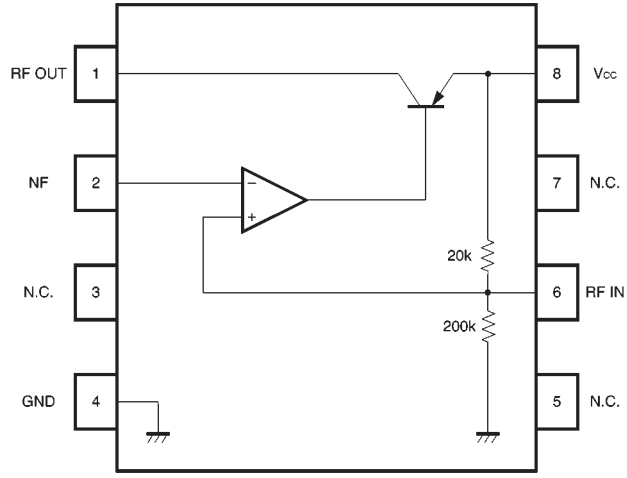
Parameter	Symbol	Limits	Unit
Power supply voltage	V	6.0	V
Power dissipation	Pd	450*	mW
Operating temperature	Topr	−15～+50	℃
Storage temperature	Tstg	−55～+125	℃

* Reduced by 4.5mW for each increase in Ta of 1℃ over 25℃.

●Recommended operating conditions (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	V_{CC}	2.5	−	4.5	V
Output current	I_O	0	−	18	mA

●Block diagram



●Electrical characteristics (unless otherwise noted, Ta = 25°C and V_{CC} = 3.5V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	
Output voltage	V_{RF1}	3.12	3.22	3.32	V	I_O=0mA	
	V_{RF2}	3.00	3.10	3.20	V	I_O=15mA	
Ripple rejection	RR1	44	47	—	dB	I_O=0mA	V_R=100mV_{P-P} f_R=100Hz
	RR2	32	38	—	dB	I_O=15mA	
Quiescent current	I_Q	0.85	1.30	1.80	mA	I_O=0mA	

◎Not designed for radiation resistance.

●Measurement circuit

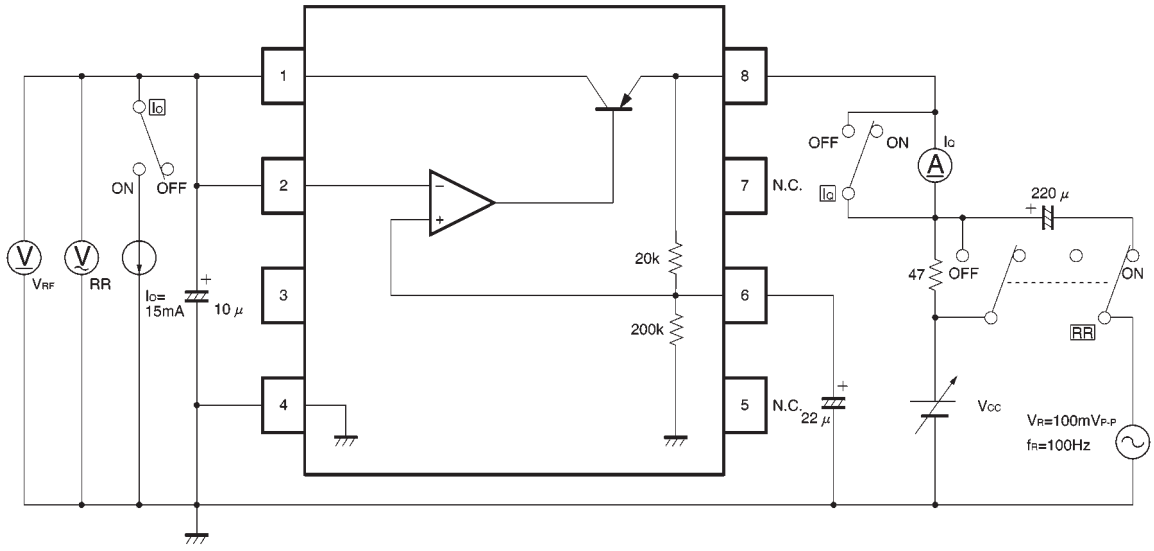


Fig.1

●Application example

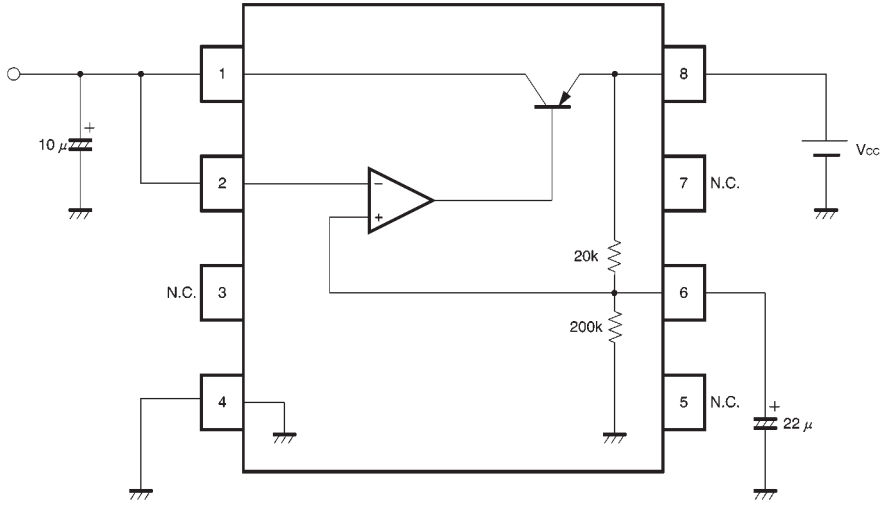


Fig.2

●Electrical characteristic curves

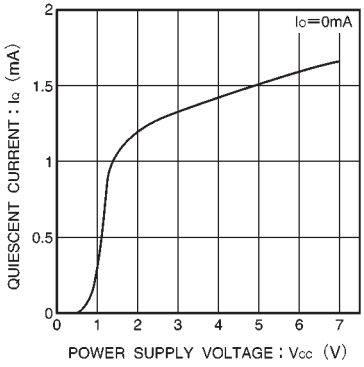


Fig.3 Circuit current vs. power supply voltage

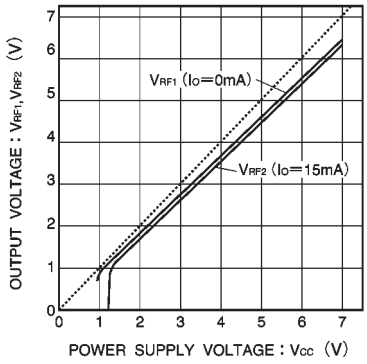


Fig.4 Output voltage vs. power supply voltage

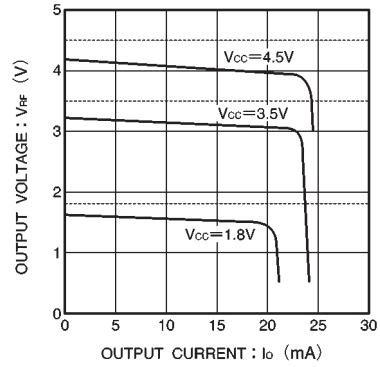


Fig.5 Output voltage vs. output current

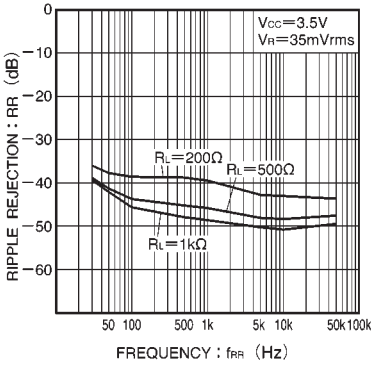


Fig.6 Ripple rejection vs. frequency

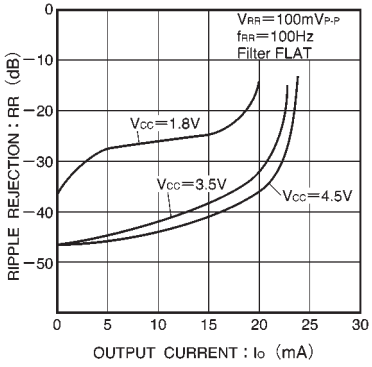


Fig.7 Ripple rejection vs. output current

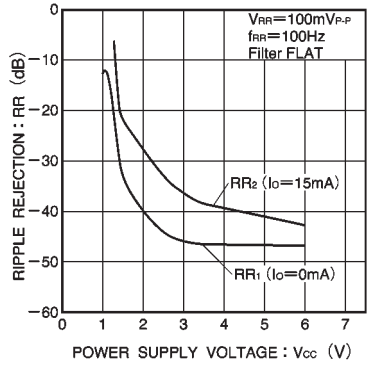
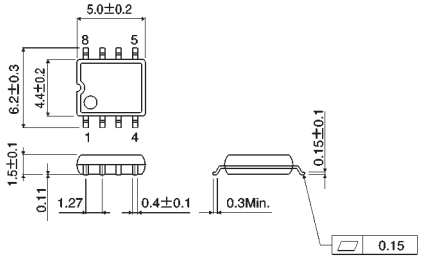


Fig.8 Ripple rejection vs. power supply voltage

●External dimensions (Units: mm)



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