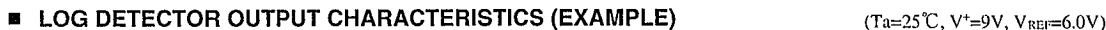


LOG AMPLIFIER

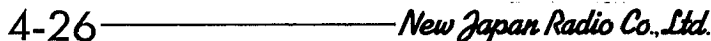
■ GENERAL DESCRIPTION

The NJM2204A is an integrated IF limiting amplifier which

■ PACKAGE OUTLINE

 $(T_a=25^{\circ}\text{C}, V^+=9\text{V}, V_{\text{REF}}=6.0\text{V})$

* Temperature coefficient of Log detection output voltage: approximately $90\mu\text{V}/^\circ\text{C}$ Typ. ($-20\sim+85^\circ\text{C}$).

47 μH 

■ RECOMMENDED OPERATING CONDITION

(Ta = -20~85°C)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V ⁺	8.0	9.0	16.0	V
Output Load Impedance	B _{RFO}	1	2	—	kΩ
	B _{LOGO}	100	—	—	kΩ
Stabilized Voltage	V _{VR}	—	6.0	—	V

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V ⁺	-0.5~16.0	V
Input Voltage	V _{IN}	-0.5~V ⁺	V
Output Current	I _{LR}	5	mA
	I _{RFO}	2	mA
Operating Temperature	T _{opr}	-20~85	°C
Storage Temperature	T _{stg}	-55~125	°C

(note): The NJM2204A is produced by high frequency wafer process and so destructive voltage against surge pulse is lower than low frequency product.

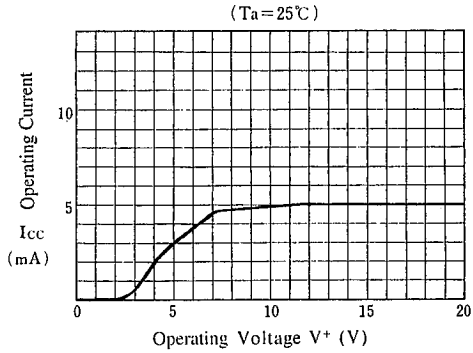
■ ELECTRICAL CHARACTERISTICS

(Ta = 25°C, V⁺ = 9V, V_{REF} = 6.0V)

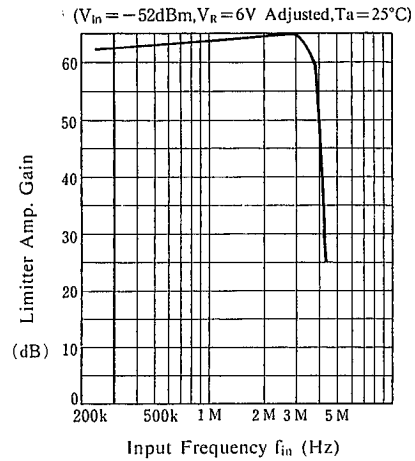
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	I _{CC}		—	6	10.0	mA
Maximum Operating Frequency	f _{max}		0.5	3	—	MHz
Output Voltage Swing	V _{RFO}	Input: +8dBm (50Ω termination)	—	2.0	—	V _{P-P}
Log Detection Output	V _{LOG}	Input: +8dBm (50Ω termination)	—	1.0	—	V
Log Detection Linearity	L _{IN}	V _{in} = -2dBm ~ -52dBm (50Ω termination)	—	—	±1	dB
Limiter Amp Gain	G _V		60	—	—	dB

TYPICAL CHARACTERISTICS

Operating Current vs. Operating Voltage

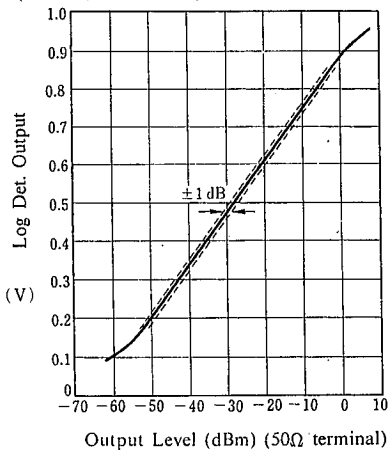


Limiter Amp Gain



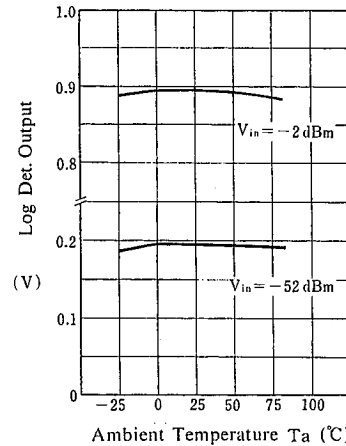
Log Detector Output

($V^+ = 9\text{V}$, $V_R = 6\text{V}$ Adjusted, $f_{in} = 455\text{kHz}$, $T_a = 25^\circ\text{C}$)



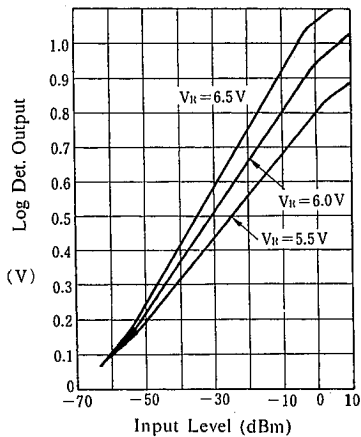
Log Detector Output

($V_{in} = -52\text{dBm}$, $V_R = 6\text{V}$ Adjusted, $T_a = 25^\circ\text{C}$)

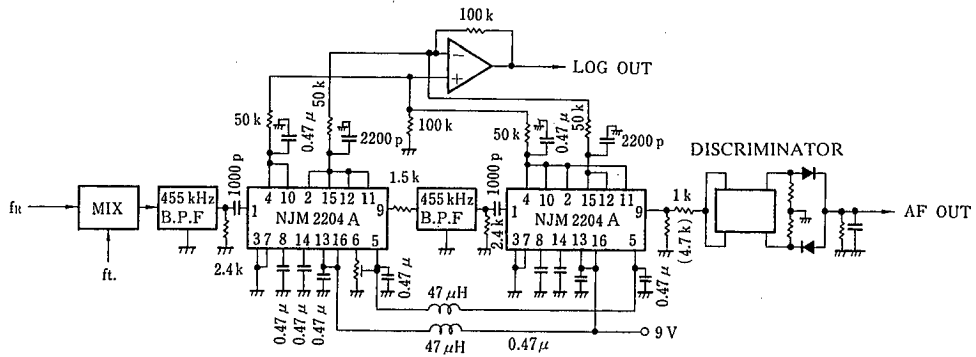


Log Detector Output V_R

($f_{in} = 455\text{kHz}$, $T_a = 25^\circ\text{C}$, 50Ω Terminal)



■ TYPICAL APPLICATION & CHARACTERISTICS (10 synthesized stage)



Log Det Output Voltage
(50Ω terminate)

