

GL7905 Electrical Characteristics ($T_A = 25^\circ\text{C}$)

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES		UNIT	
			MIN.	MAX.		
Output Voltage (1)	V_{O1}	$T_I = 25^\circ\text{C}$, $V_{in} = -10\text{V}$, $I_o = 500\text{mA}$	-5.2	-4.8	V	
Output Voltage (2)	V_{O2}	$-20\text{V} \leq V_{in} \leq -7\text{V}$, $5.0\text{mA} \leq I_o \leq 1.0\text{A}$	-5.25	-4.75	V	
Line Regulation	ΔV_{O1}	$T_I = 25^\circ\text{C}$	$-25\text{V} \leq V_{in} \leq -7\text{V}$, $I_o = 100\text{mA}$		50	mV
	ΔV_{O2}		$-12\text{V} \leq V_{in} \leq -8\text{V}$, $I_o = 100\text{mA}$		25	mV
	ΔV_{O3}		$-25\text{V} \leq V_{in} \leq -7\text{V}$, $I_o = 500\text{mA}$		100	mV
	ΔV_{O4}		$-12\text{V} \leq V_{in} \leq -8\text{V}$, $I_o = 500\text{mA}$		50	mV
Load Regulation	ΔV_{O5}	$T_I = 25^\circ\text{C}$	$5.0\text{mA} \leq I_o \leq 1.5\text{A}$, $V_{in} = -10\text{V}$		100	mV
	ΔV_{O6}		$250\text{mA} \leq I_o \leq 750\text{mA}$, $V_{in} = -10\text{V}$		50	mV
Quiescent Current	I_o	$T_I = 25^\circ\text{C}$, $V_{in} = -10\text{V}$, $I_o = 500\text{mA}$			2.0	mA
Quiescent Current Change	ΔI_{O1}	$-25\text{V} \leq V_{in} \leq -17\text{V}$, $I_o = 500\text{mA}$			1.3	mA
	ΔI_{O2}	$V_{in} = -10\text{V}$, $5\text{mA} \leq I_o \leq 1.5\text{A}$			0.5	mA
Output Noise Voltage	N_o	$V_{in} = -10\text{V}$, $I_o = 500\text{mA}$ $10\text{Hz} \leq f \leq 100\text{kHz}$			80	μV
Ripple Rejection	R_{rr}	$T_I = 25^\circ\text{C}$, $V_i = 1V_{(rms)}$, 120Hz , $I_o = 20\text{mA}$, $-18\text{V} \leq V_{in} \leq -8\text{V}$	54			dB
Input-Output Voltage Differential	V_d	$T_I = 25^\circ\text{C}$, $I_o = 1.0\text{A}$			1.1(TYP)	V

GL7909 Electrical Characteristics ($T_A = 25^\circ\text{C}$)

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES		UNIT	
			MIN.	MAX.		
Output Voltage (1)	V_{O1}	$T_I = 25^\circ\text{C}$, $V_{in} = -15\text{V}$, $I_o = 500\text{mA}$	-9.35	-8.65	V	
Output Voltage (2)	V_{O2}	$-24\text{V} \leq V_{in} \leq -11.5\text{V}$, $5.0\text{mA} \leq I_o \leq 1.0\text{A}$	-9.55	-8.55	V	
Line Regulation	ΔV_{O1}	$T_I = 25^\circ\text{C}$	$-26\text{V} \leq V_{in} \leq -11.5\text{V}$, $I_o = 100\text{mA}$		90	mV
	ΔV_{O2}		$-18\text{V} \leq V_{in} \leq -12\text{V}$, $I_o = 100\text{mA}$		45	mV
	ΔV_{O3}		$-26\text{V} \leq V_{in} \leq -11.5\text{V}$, $I_o = 500\text{mA}$		180	mV
	ΔV_{O4}		$-18\text{V} \leq V_{in} \leq -12\text{V}$, $I_o = 500\text{mA}$		90	mV
Load Regulation	ΔV_{O5}	$T_I = 25^\circ\text{C}$	$5.0\text{mA} \leq I_o \leq 1.5\text{A}$, $V_{in} = -15\text{V}$		180	mV
	ΔV_{O6}		$250\text{mA} \leq I_o \leq 750\text{mA}$, $V_{in} = -15\text{V}$		90	mV
Quiescent Current	I_o	$T_I = 25^\circ\text{C}$, $V_{in} = -15\text{V}$, $I_o = 500\text{mA}$			3	mA
Quiescent Current Change	ΔI_{O1}	$-26\text{V} \leq V_{in} \leq -11.5\text{V}$, $I_o = 500\text{mA}$			1.0	mA
	ΔI_{O2}	$V_{in} = -15\text{V}$, $5\text{mA} \leq I_o \leq 1.5\text{A}$			0.5	mA
Output Noise Voltage	N_o	$V_{in} = -15\text{V}$, $I_o = 500\text{mA}$ $10\text{Hz} \leq f \leq 100\text{kHz}$			120	μV
Ripple Rejection	R_{rr}	$T_I = 25^\circ\text{C}$, $V_i = 1V_{(rms)}$, 120Hz , $I_o = 20\text{mA}$, $-22\text{V} \leq V_{in} \leq -12\text{V}$	54			dB
Input-Output Voltage Differential	V_d	$T_I = 25^\circ\text{C}$, $I_o = 1.0\text{A}$			1.1(TYP)	V

GL7912 Electrical Characteristics ($T_A = 25^\circ\text{C}$)

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES		UNIT	
			MIN.	MAX.		
Output Voltage (1)	V_{O1}	$T_J = 25^\circ\text{C}$, $V_{in} = -19\text{V}$, $I_o = 500\text{mA}$	-12.5	-11.5	V	
Output Voltage (2)	V_{O2}	$-27\text{V} \leq V_{in} \leq -14.5\text{V}$, $5.0\text{mA} \leq I_o \leq 1.0\text{A}$	-12.5	-11.4	V	
Line Regulation	ΔV_{O1}	$T_J = 25^\circ\text{C}$	$-30\text{V} \leq V_{in} \leq -14.5\text{V}$, $I_o = 100\text{mA}$		120	mV
	ΔV_{O2}		$-22\text{V} \leq V_{in} \leq -16\text{V}$, $I_o = 100\text{mA}$		60	mV
	ΔV_{O3}		$-30\text{V} \leq V_{in} \leq -14.5\text{V}$, $I_o = 500\text{mA}$		240	mV
	ΔV_{O4}		$-22\text{V} \leq V_{in} \leq -16\text{V}$, $I_o = 500\text{mA}$		120	mV
Load Regulation	ΔV_{O5}	$T_J = 25^\circ\text{C}$	$5.0\text{mA} \leq I_o \leq 1.5\text{A}$, $V_{in} = -19\text{V}$		240	mV
	ΔV_{O6}		$250\text{mA} \leq I_o \leq 750\text{mA}$, $V_{in} = -19\text{V}$		120	mV
Quiescent Current	I_o	$T_J = 25^\circ\text{C}$, $V_{in} = -19\text{V}$, $I_o = 500\text{mA}$			3	mA
Quiescent Current Change	ΔI_{O1}	$-30\text{V} \leq V_{in} \leq -14.5\text{V}$, $I_o = 500\text{mA}$			1.0	mA
	ΔI_{O2}	$V_{in} = -19\text{V}$, $5\text{mA} \leq I_o \leq 1.5\text{A}$			0.5	mA
Output Noise Voltage	N_o	$V_{in} = -19\text{V}$, $I_o = 500\text{mA}$ $10\text{Hz} \leq f \leq 100\text{kHz}$			150	μV
Ripple Rejection	R_R	$T_J = 25^\circ\text{C}$, $V_i = 1V_{(rms)}$, 120Hz , $I_o = 20\text{mA}$, $-25\text{V} \leq V_{in} \leq -15\text{V}$	54			dB
Input-Output Voltage Differential	V_d	$T_J = 25^\circ\text{C}$, $I_o = 1.0\text{A}$		1.1(TYP)		V

GL7915 Electrical Characteristics ($T_A = 25^\circ\text{C}$)

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES		UNIT	
			MIN.	MAX.		
Output Voltage (1)	V_{O1}	$T_J = 25^\circ\text{C}$, $V_{in} = -23\text{V}$, $I_o = 500\text{mA}$	-15.6	-14.4	V	
Output Voltage (2)	V_{O2}	$-30\text{V} \leq V_{in} \leq -17.5\text{V}$, $5.0\text{mA} \leq I_o \leq 1.0\text{A}$	-15.75	-14.25	V	
Line Regulation	ΔV_{O1}	$T_J = 25^\circ\text{C}$	$-30\text{V} \leq V_{in} \leq -17.5\text{V}$, $I_o = 100\text{mA}$		150	mV
	ΔV_{O2}		$-26\text{V} \leq V_{in} \leq -20\text{V}$, $I_o = 100\text{mA}$		75	mV
	ΔV_{O3}		$-30\text{V} \leq V_{in} \leq -17.5\text{V}$, $I_o = 500\text{mA}$		300	mV
	ΔV_{O4}		$-26\text{V} \leq V_{in} \leq -20\text{V}$, $I_o = 500\text{mA}$		150	mV
Load Regulation	ΔV_{O5}	$T_J = 25^\circ\text{C}$	$5.0\text{mA} \leq I_o \leq 1.5\text{A}$, $V_{in} = -23\text{V}$		300	mV
	ΔV_{O6}		$250\text{mA} \leq I_o \leq 750\text{mA}$, $V_{in} = -23\text{V}$		150	mV
Quiescent Current	I_o	$T_J = 25^\circ\text{C}$, $V_{in} = -23\text{V}$, $I_o = 500\text{mA}$			3	mA
Quiescent Current Change	ΔI_{O1}	$-30\text{V} \leq V_{in} \leq -17.5\text{V}$, $I_o = 500\text{mA}$			1.0	mA
	ΔI_{O2}	$V_{in} = -23\text{V}$, $5\text{mA} \leq I_o \leq 1.5\text{A}$			0.5	mA
Output Noise Voltage	N_o	$V_{in} = -23\text{V}$, $I_o = 500\text{mA}$ $10\text{Hz} \leq f \leq 100\text{kHz}$			180	μV
Ripple Rejection	R_R	$T_J = 25^\circ\text{C}$, $V_i = 1V_{(rms)}$, 120Hz , $I_o = 20\text{mA}$, $-28.5\text{V} \leq V_{in} \leq -18.5\text{V}$	54			dB
Input-Output Voltage Differential	V_d	$T_J = 25^\circ\text{C}$, $I_o = 1.0\text{A}$		1.1(TYP)		V

GL79XX Series

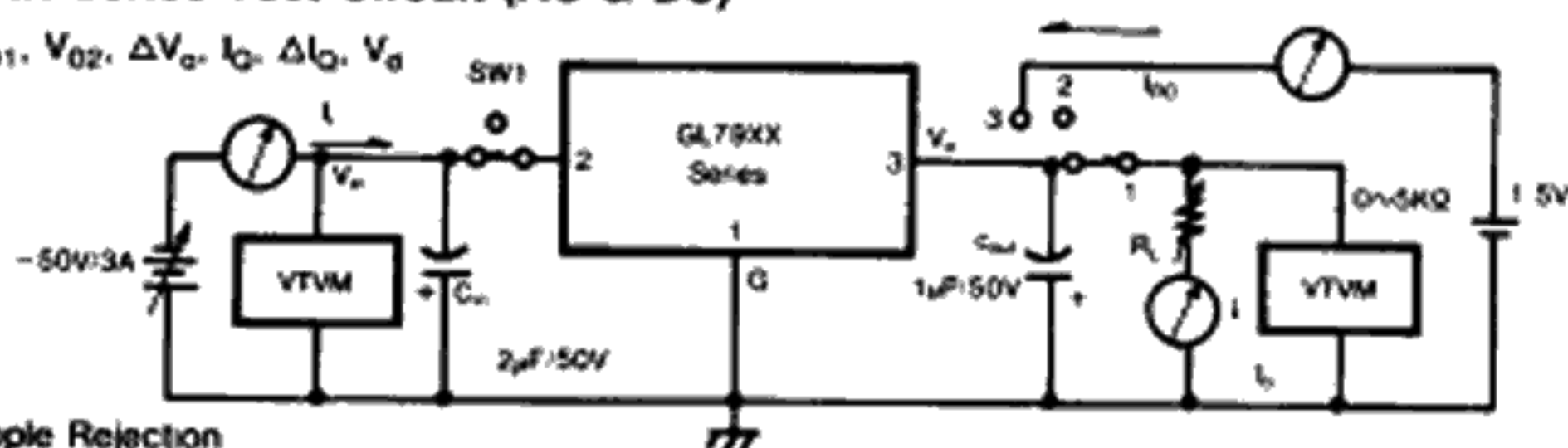
GL7924 Electrical Characteristics ($T_A = 25^\circ\text{C}$)

$$C_{in} = 2\mu\text{F}, C_{out} = 1\mu\text{F}$$

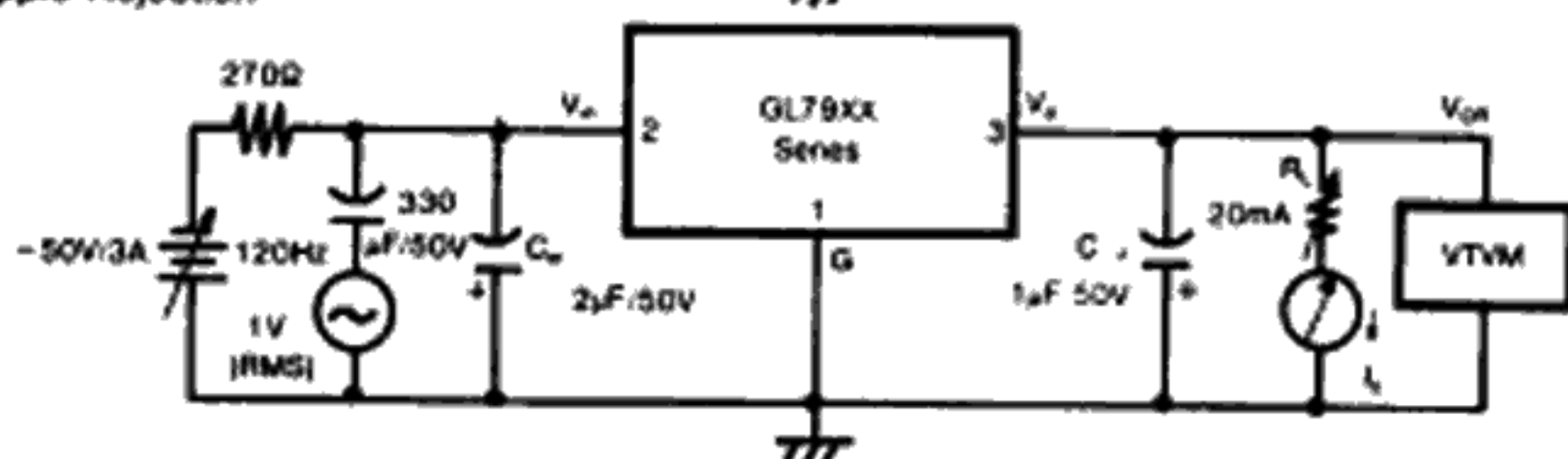
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES		UNIT	
			MIN	MAX.		
Output Voltage (1)	V_{O1}	$T_j = 25^\circ\text{C}, V_{in} = -33\text{V}, I_o = 500\text{mA}$	-25	-23	V	
Output Voltage (2)	V_{O2}	$-38\text{V} \leq V_{in} \leq -27\text{V}, 5.0\text{mA} \leq I_o \leq 1.0\text{A}$	-25.2	-22.8	V	
Line Regulation	ΔV_{O1}	$T_j = 25^\circ\text{C}$	$-38\text{V} \leq V_{in} \leq -27\text{V}, I_o = 100\text{mA}$		240	mV
	ΔV_{O2}		$-36\text{V} \leq V_{in} \leq -30\text{V}, I_o = 100\text{mA}$		120	mV
	ΔV_{O3}		$-38\text{V} \leq V_{in} \leq -27\text{V}, I_o = 500\text{mA}$		480	mV
	ΔV_{O4}		$-36\text{V} \leq V_{in} \leq -30\text{V}, I_o = 500\text{mA}$		240	mV
Load Regulation	ΔV_{O5}	$T_j = 25^\circ\text{C}$	$5.0\text{mA} \leq I_o \leq 1.5\text{A}, V_{in} = -33\text{V}$		480	mV
	ΔV_{O6}		$250\text{mA} \leq I_o \leq 750\text{mA}, V_{in} = -33\text{V}$		240	mV
Quiescent Current	I_Q	$T_j = 25^\circ\text{C}, V_{in} = -33\text{V}, I_o = 500\text{mA}$			3	mA
Quiescent Current Change	ΔI_{Q1}	$-38\text{V} \leq V_{in} \leq -27\text{V}, I_o = 500\text{mA}$			1.0	mA
	ΔI_{Q2}	$V_{in} = -33\text{V}, 5\text{mA} \leq I_o \leq 1.5\text{A}$			0.5	mA
Output Noise Voltage	N_o	$V_{in} = -33\text{V}, I_o = 500\text{mA}$ $10\text{Hz} \leq f \leq 100\text{kHz}$			270	μV
Ripple Rejection	R_{rr}	$T_j = 25^\circ\text{C}, V_i = 1V_{(RMS)}, 120\text{Hz}, I_o = 20\text{mA},$ $-38\text{V} \leq V_{in} \leq -28\text{V}$	54			dB
Input-Output Voltage Differential	V_d	$T_j = 25^\circ\text{C}, I_o = 1.0\text{A}$		1.1(TYP)		V

*GL79XX Series Test Circuit (AC & DC)

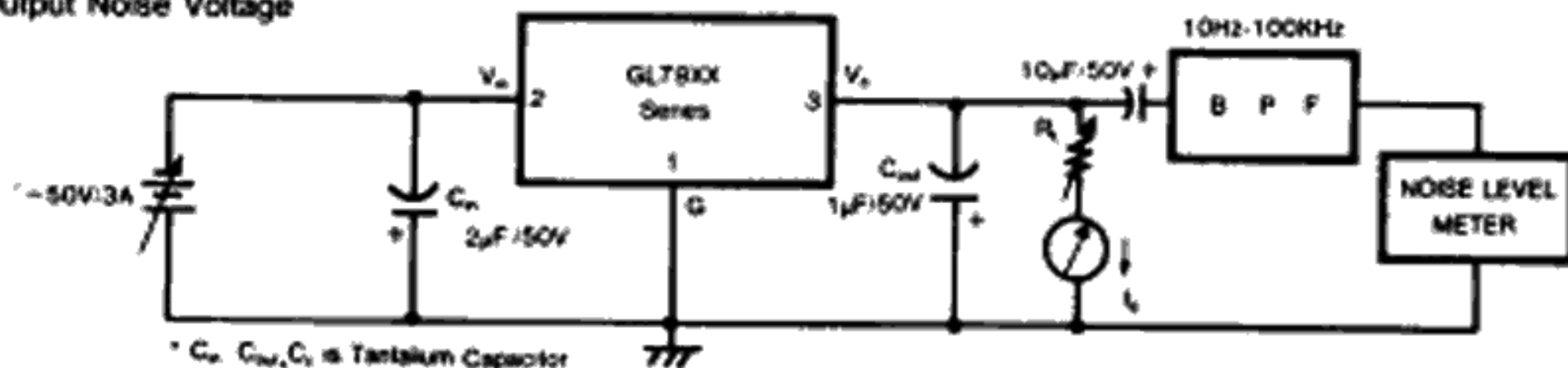
1. $V_{O1}, V_{O2}, \Delta V_o, I_Q, \Delta I_Q, V_d$



2. Ripple Rejection



3. Output Noise Voltage



* C_{in}, C_{out}, C_o is Tantalum Capacitor

TYPICAL CHARACTERISTICS ($T_A = +25^\circ\text{C}$ unless otherwise noted.)

FIGURE 1 - AVERAGE CASE POWER DISSIPATION AS A FUNCTION OF AMBIENT TEMPERATURE (TO-220)

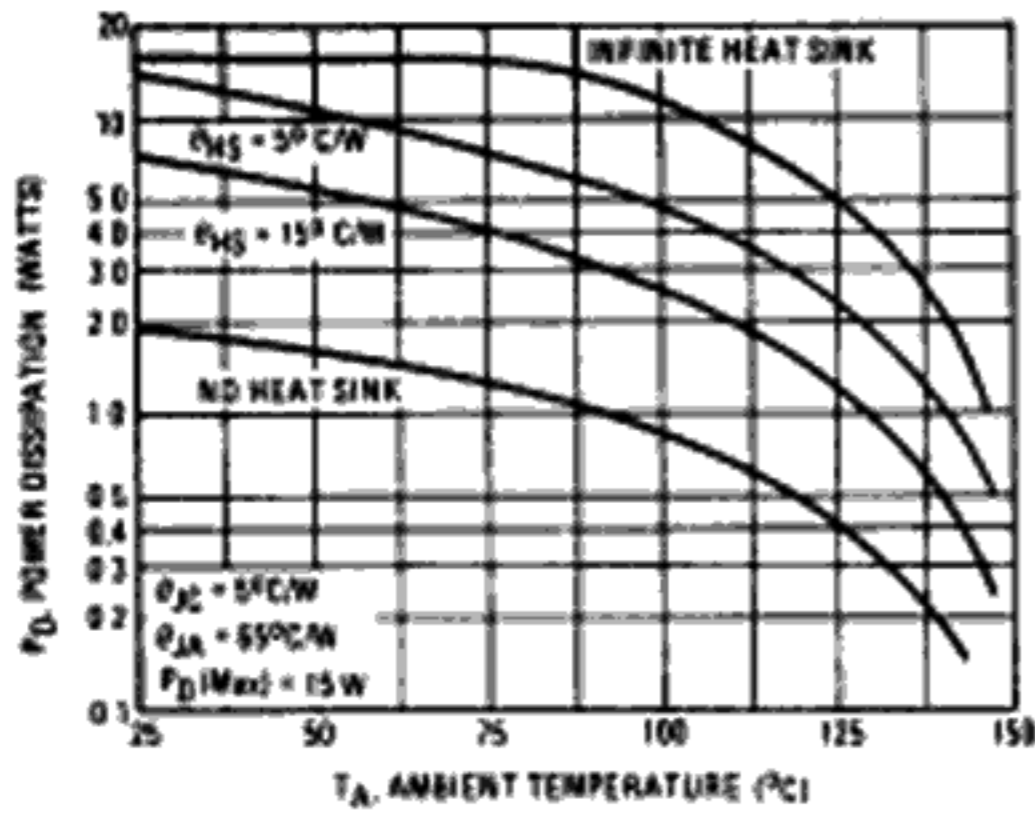


FIGURE 2 - PEAK OUTPUT CURRENT AS A FUNCTION OF INPUT-OUTPUT DIFFERENTIAL VOLTAGE

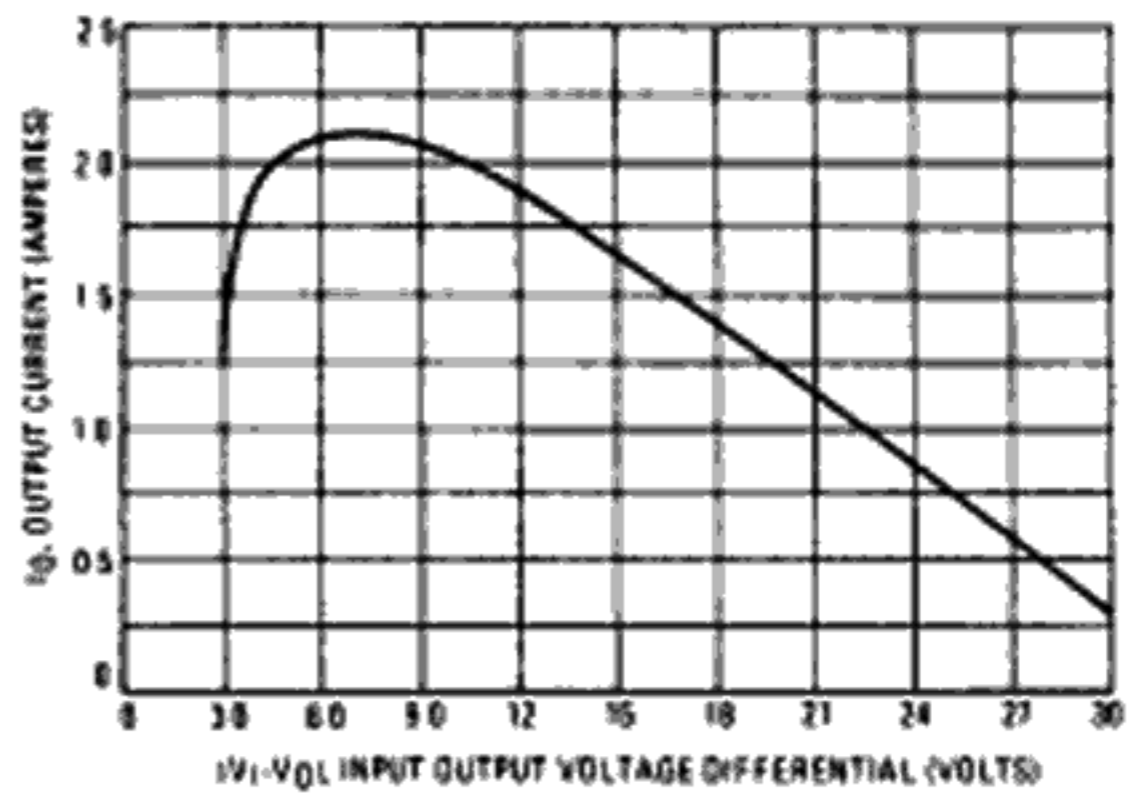


FIGURE 3 - RIPPLE REJECTION AS A FUNCTION OF FREQUENCY

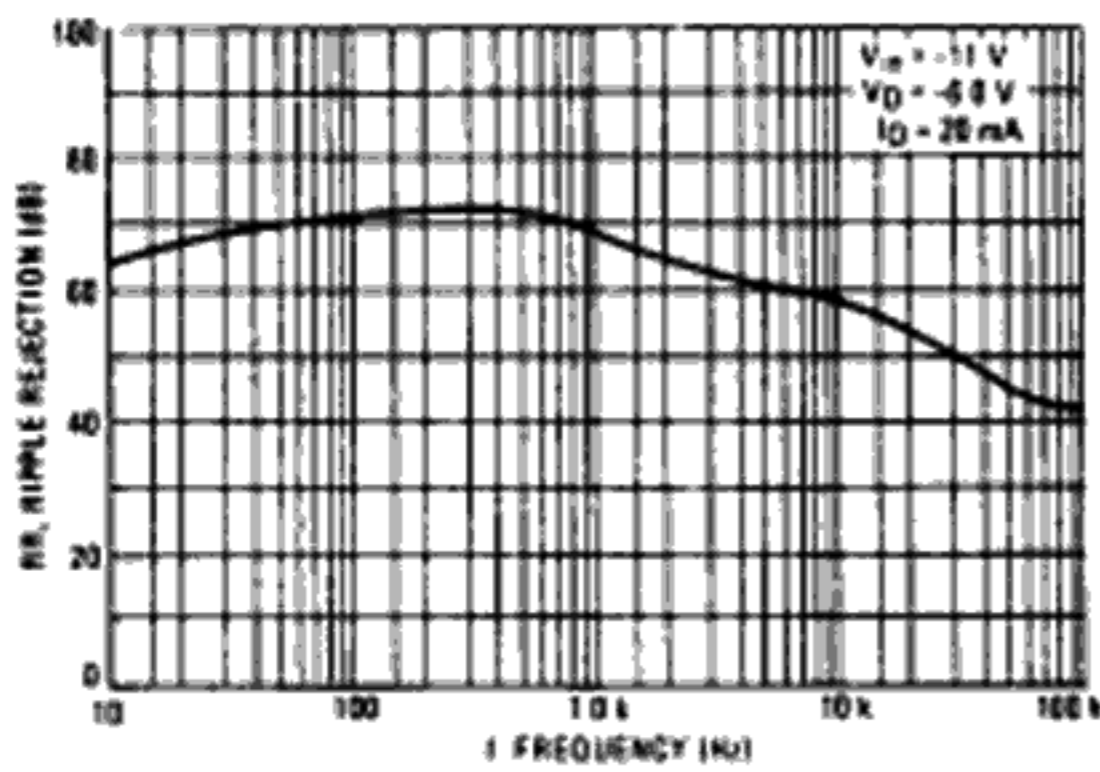


FIGURE 4 - RIPPLE REJECTION AS A FUNCTION OF OUTPUT VOLTAGES

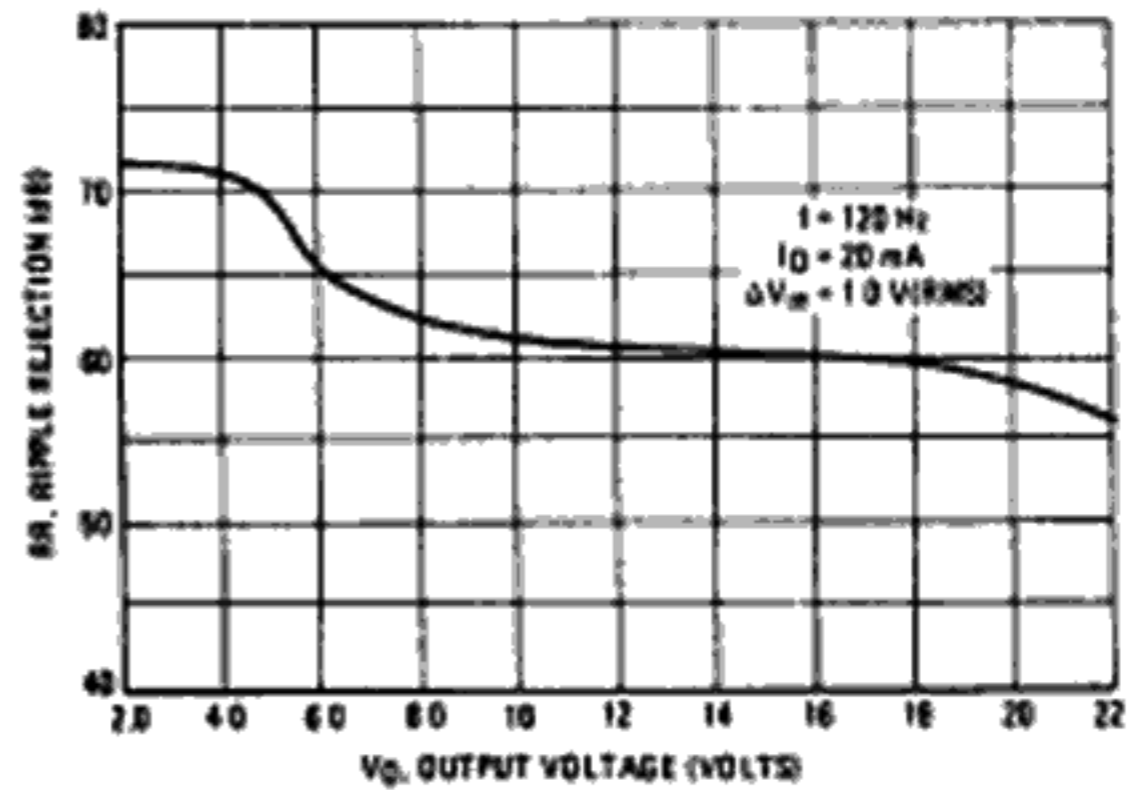


FIGURE 5 - OUTPUT VOLTAGE AS A FUNCTION OF JUNCTION TEMPERATURE

