Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		26.4	V
Recommended load resistance	R_L		8	Ω
Operating supply voltage range	V_{CC} op		10 to 30	V

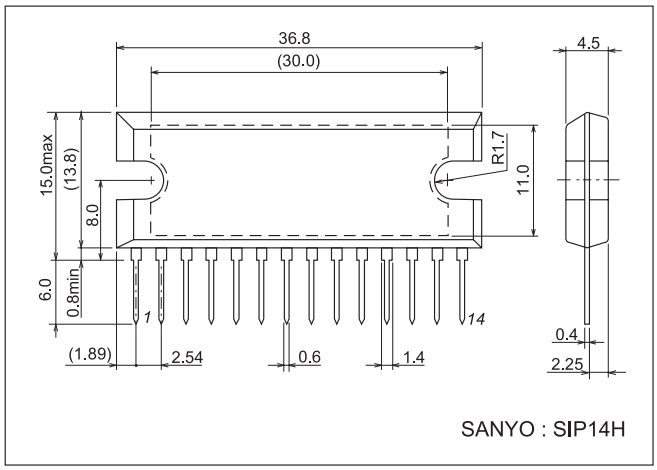
Electrical Characteristics at Ta = 25°C, V_{CC} = 26.4V, R_L = 8Ω, f = 1kHz, Rg = 600Ω

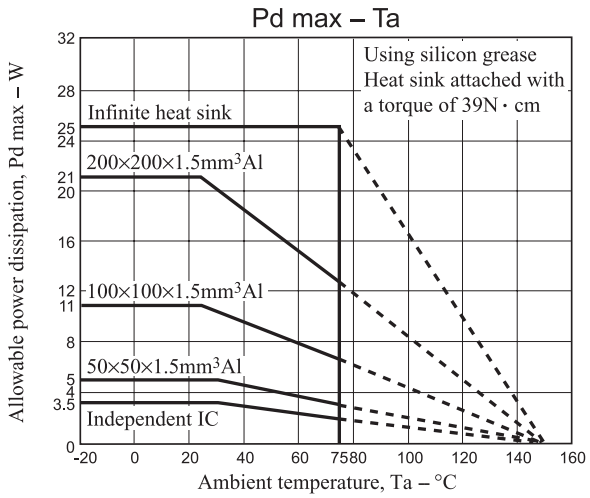
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Standby current	Ist	Standby switch off		1	30	μA
Quiescent current	I_{CCO}	Rg = 0	50	80	140	mA
Output power	P_{O1}	THD = 10%	10	12		W
	P_{O2}	THD = 10%, R_L = 4Ω		20		W
Voltage gain	VG	V_O = 0dBm	49	51	53	dB
Total harmonic distortion	THD	P_O = 1W		0.07	0.4	%
Output noise voltage	V_{NO}	Rg = 0, BPF-BW = 20Hz to 20kHz		0.4	1.0	mV
Ripple exclusion ratio	SVRR	Rg = 0, f_R = 100Hz, V_R = 0dBm	45	55		dB
Channel separation	CHsep	V_O = 0dBm, Rg = 10kΩ	45	55		dB
Standby control voltage	Vst	With a 10kΩ resistor connected at pin 12	2.5		V_{CC}	V

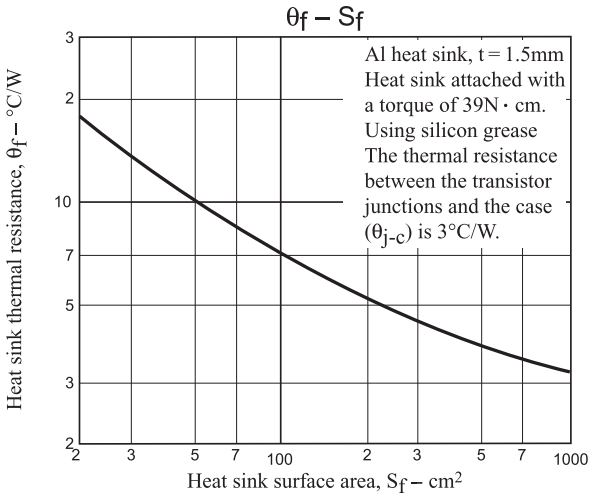
Package Dimensions

unit : mm (typ)

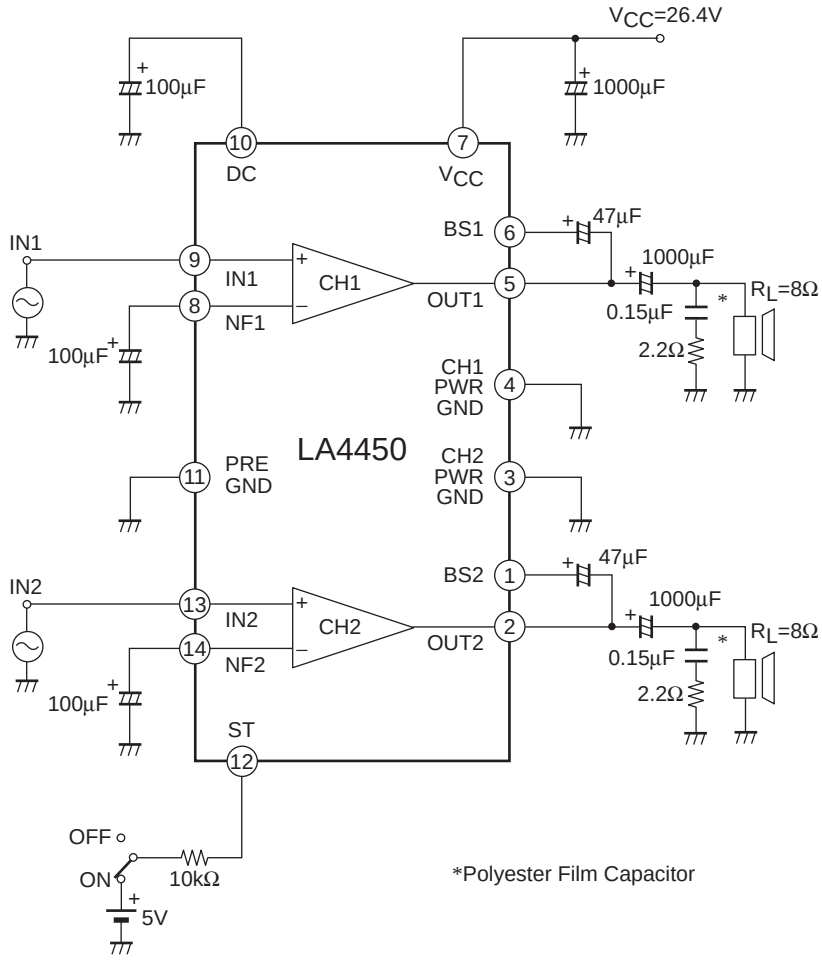
3023B





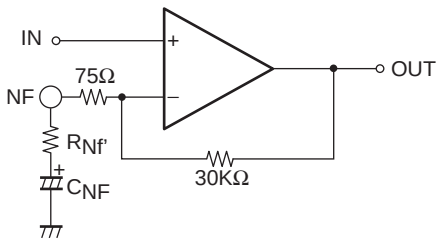


Test Circuit



1. Features and Usage Notes

- Pin 12 is the standby pin. The IC operates when a voltage of 2V or higher is applied through the external resistor R1. Note that the maximum influx current to pin 12 is 500µA.
- Changing the voltage gain



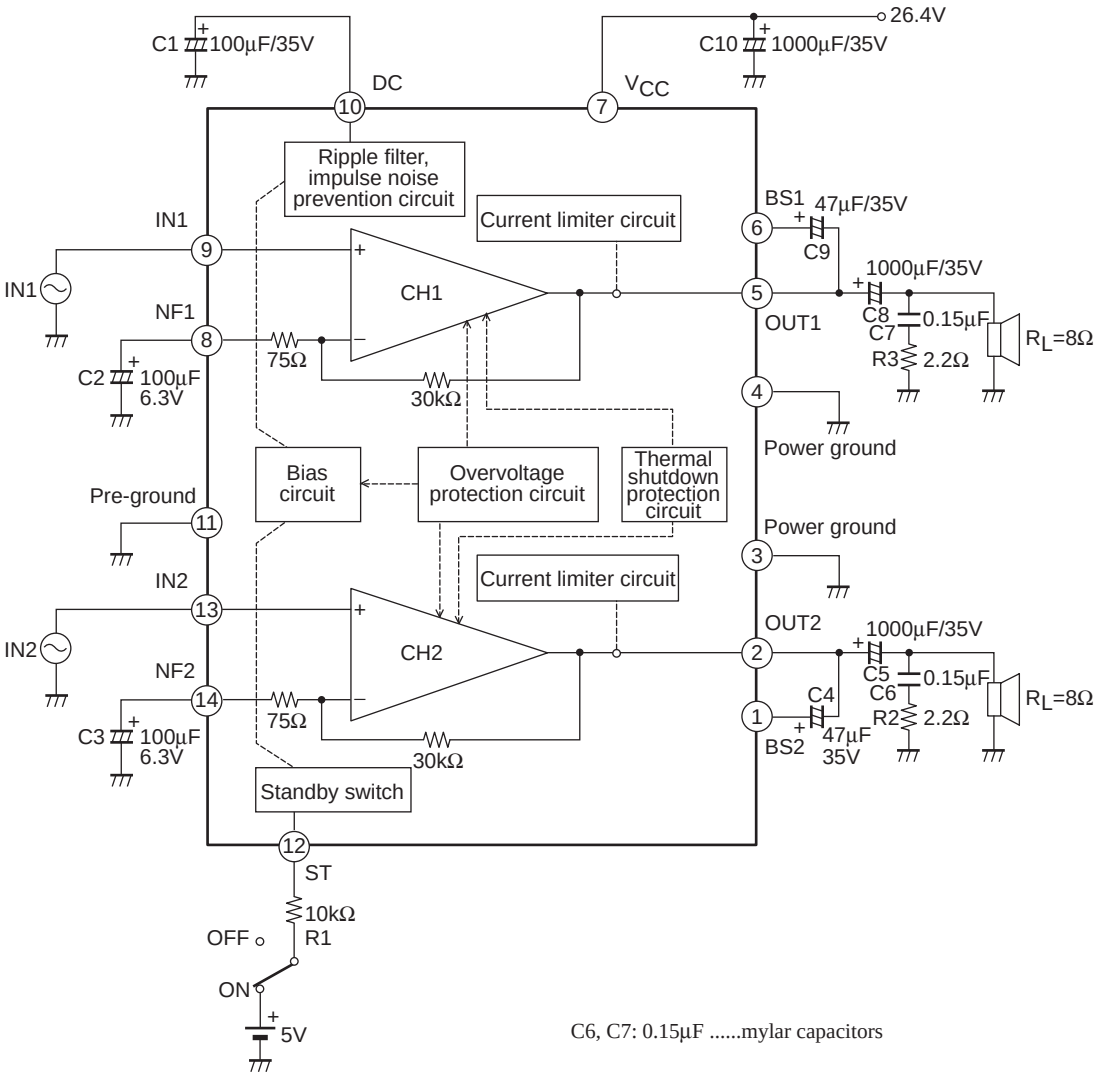
The voltage gain VG can be lowered by connecting an external resistor in series between the NF pin (pins 8 and 14) and C_{NF}.

$$VG = 20\log \frac{30k\Omega}{75+R_{Nf}},$$

However, since the IC may oscillate if VG is 30dB or lower, use a VG of 36dB or higher.

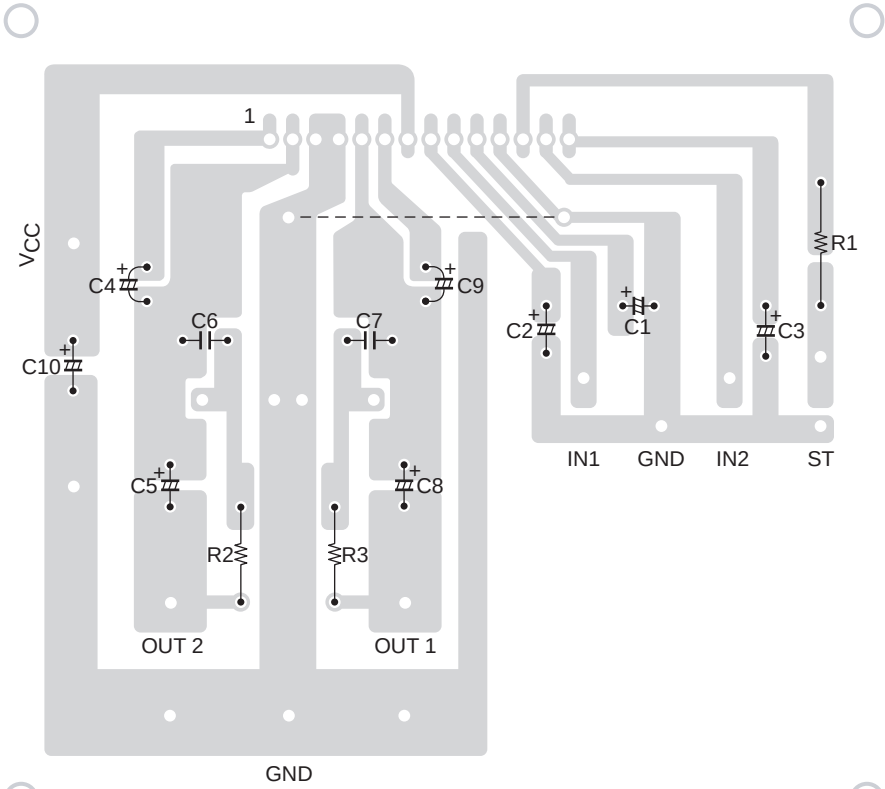
- The LA4450 includes a thermal protection circuit to prevent damage to or destruction of the IC due to abnormal overheating. As a result, the output may be attenuated or cut off if the application heat sinking is inadequate.
- The LA4450 includes an overvoltage protection circuit to protect the IC against power supply surges and abnormal voltages. This circuit has hysteresis characteristics : it operates at between 39 and 40V, and recovers at around 34V.
- Although the LA4450 includes a current limiter circuit to prevent damage due to abnormal currents, care must still be exercised to prevent load shorts and other excessive current conditions.

Application Circuit Example

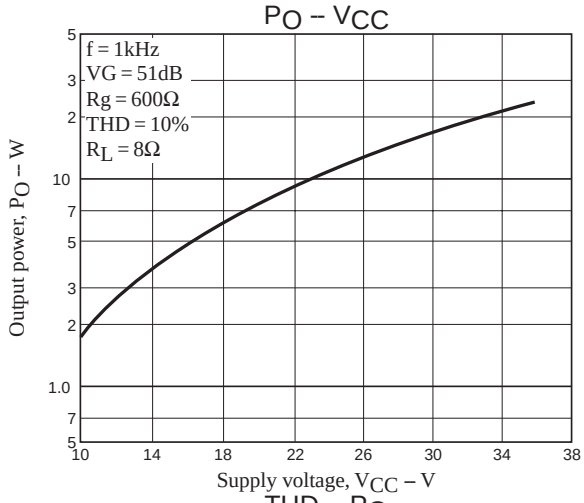


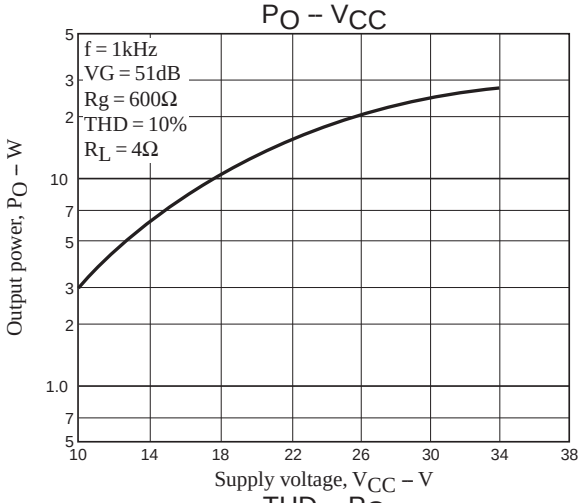
C6, C7: 0.15µF .....mylar capacitors

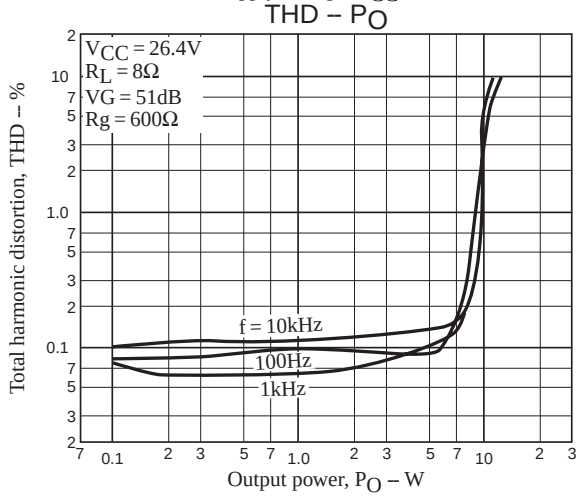
Printed Circuit Board Pattern Example

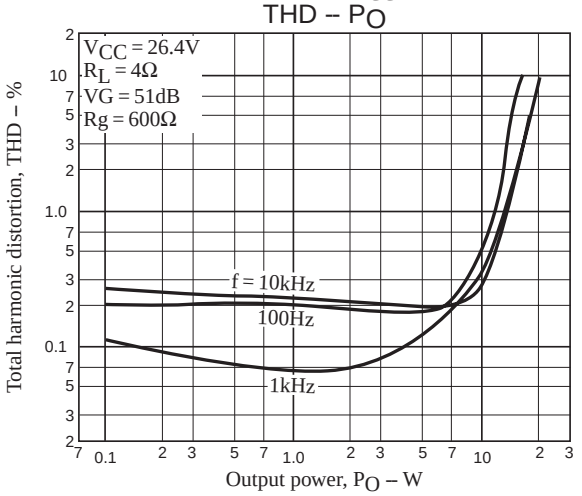


Copper foiled side 90×100mm²

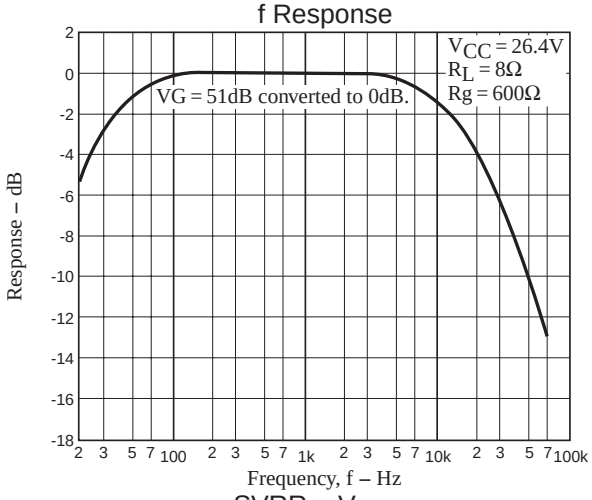




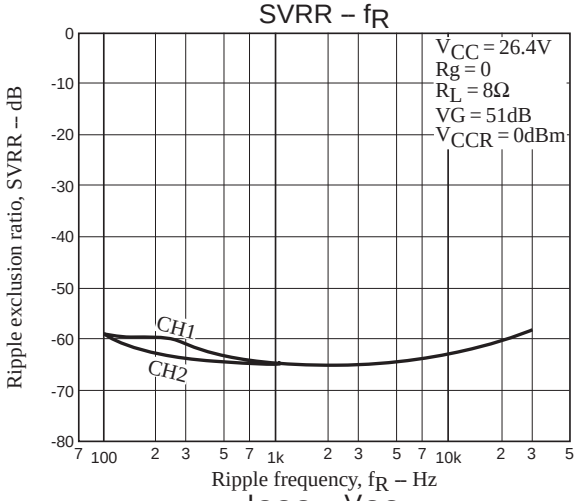




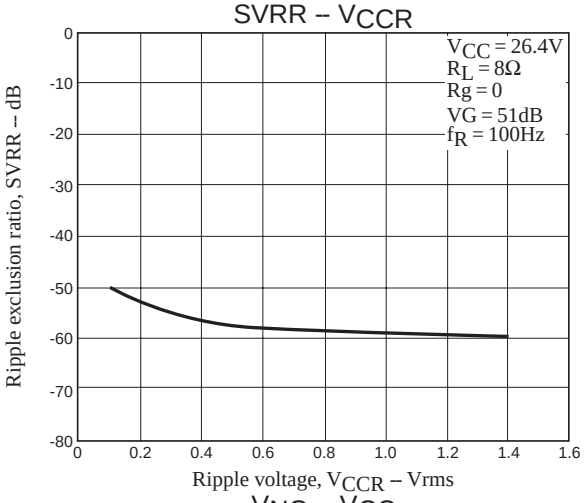
f Response



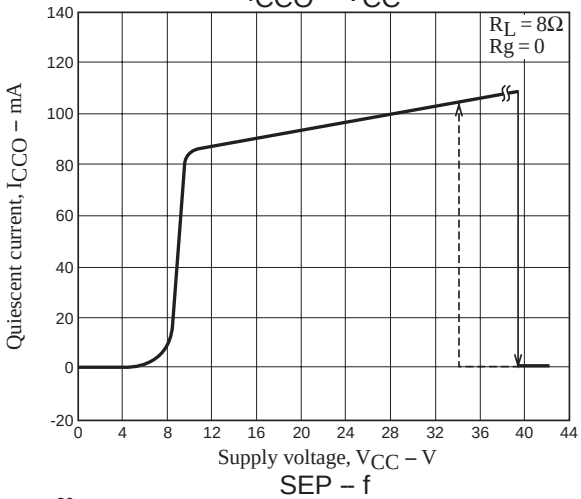
SVRR – f_R



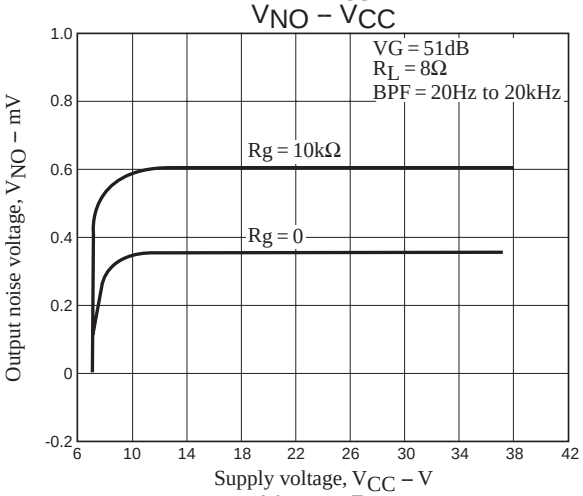
SVRR – V_{CCR}



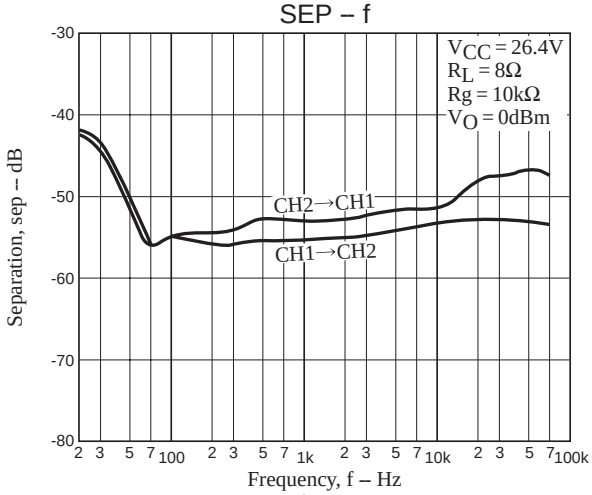
I_{CCO} – V_{CC}



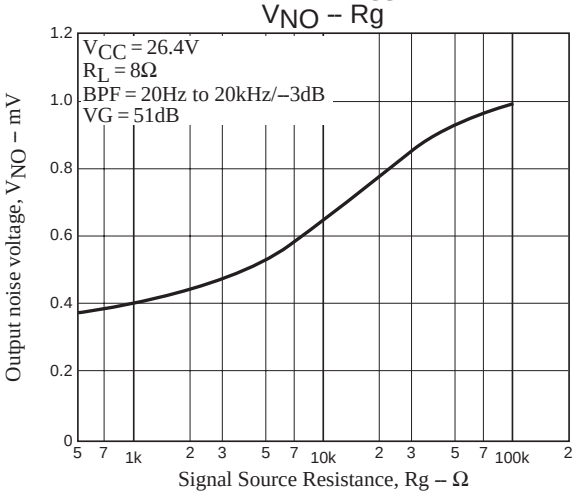
V_{NO} – V_{CC}



SEP – f



V_{NO} – Rg



Pd – P_O