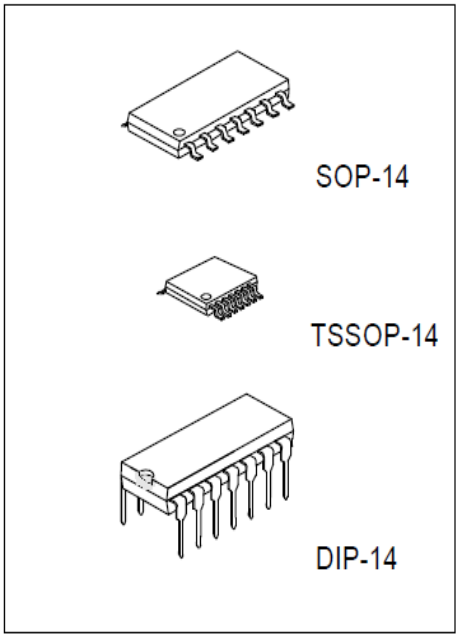
QUAD DIFFERENTIAL COMPARATOR

Features

- ◆Signal or dual supply operation.
- ◆Wide operating supply range (Vcc=2V~36V).
- ◆Input common-mode voltage includes ground.
- ◆Low supply current drain IF=0.8mA (Typical).
- ◆Open collector outputs for wired and connection.
- ◆Low input bias current IBIAS=25nA (Typical).
- ◆Low output saturation voltage.
- ◆Output compatible with TTL, DTL, and CMOS logic system.



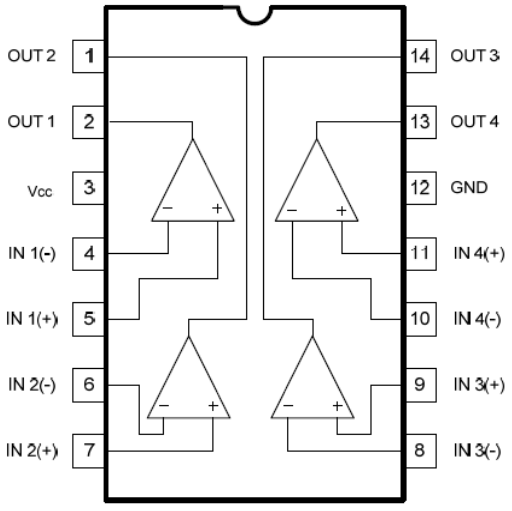
General Description

The **ADV** LM339 consists of four independent voltage comparators, designed specifically to operate from a single power supply over a wide voltage range.

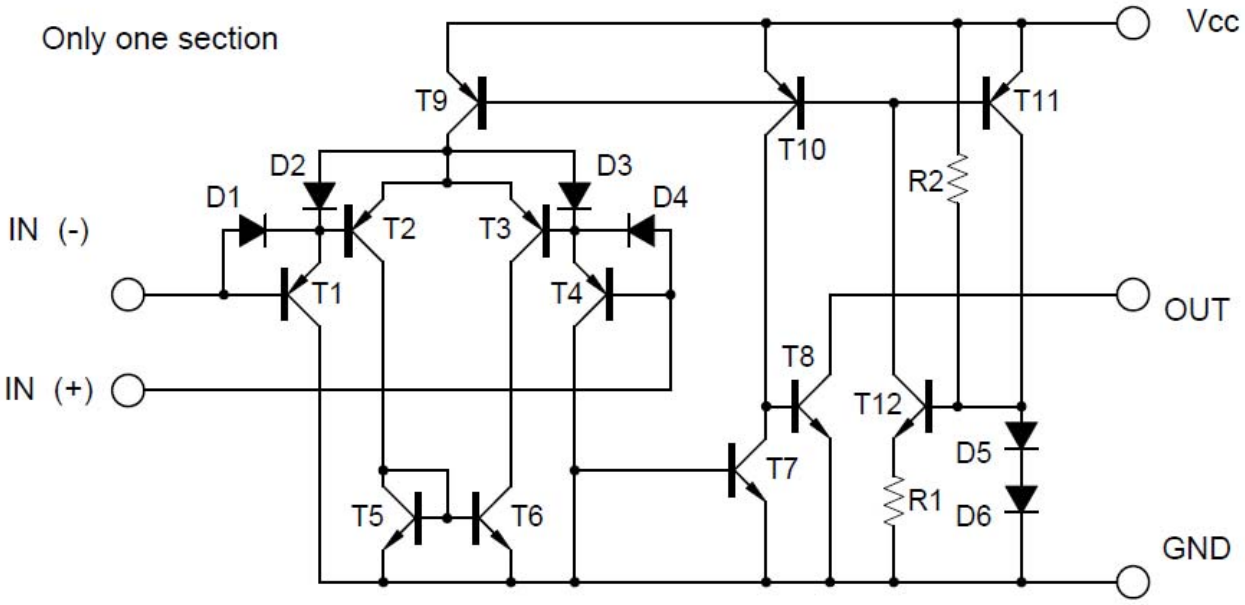
- **ORDERING INFORMATION**

Normal	Package	Packing
AD339-S	SOP-14	Tape Reel
AD339-P	TSSOP-14	Tape Reel
AD339-D	DIP-14	Tube

PIN CONFIGURATION



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	± 18 or 36	V
Differential input Voltage	$V_{I(DIFF)}$	36	V
Input Voltage	V_{IN}	-0.3~36	V
Power Dissipation	P_D	570	mW
Junction Temperature	T_J	125	°C
Operating Temperature	T_{OPR}	-20 ~ +85	°C
Storage Temperature	T_{STG}	-40 ~ 150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

ELECTRICAL CHARACTERISTICS

(Vcc=5.0V, Ta=25°C, All voltage referenced to GND unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP.	MAX	UNIT
Input Offset Voltage	$V_{I(OFF)}$	V_{CM}=0 ~ Vcc-1.5 V_{OUT}(p)=1.4V, Rs=0		±1.5	±5.0	mV
Input Offset Current	$I_{I(OFF)}$			±2.3	±50	nA
Input Bias Current	I_{BIAS}			57	250	nA
Input Common-Mode Voltage Range	$V_{IN(R)}$		0		Vcc-1.5	V
Supply Current	I_{CC}	R_L=∞		1.1	2.0	mA
Large Signal Voltage Gain	G_V	Vcc=15V, R_L>15kΩ	50	200		V/mV
Large Signal Response Time	tres	V_{IN}=TTL logic wing V_{REF}=1.4V, V_{RL}=5V, R_L=5.1kΩ		350		ns
Response Time	tres	V_{RL}=5V, R_L=5.1kΩ		1400		ns
Output Sink Current	I_{SINK}	V_{IN} (-)>1V, V_{IN} (+)=0V, V_{OUT}(p)<1.5V	6	18		mA
Output Saturation Voltage	V_{SAT}	V_{IN} (-)>1V, V_{IN} (+)=0V, I_{SINK}=4mA		140	400	mV
Output Leakage Current	I_{LEAK}	V_{IN} (+)=1V,V_{IN} (-)=0 V_{OUT}(p)= 5V V_{OUT} (p)=30V		0.1	 1.0	nA μA
Differential Input Voltage	$V_{IN(DIFF)}$				36	V

TYPICAL CHARACTERISTICS

Fig.1 Supply Current

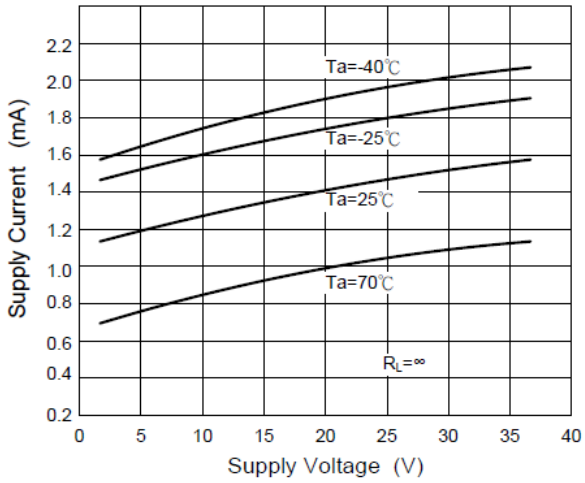


Fig.2 Input Current

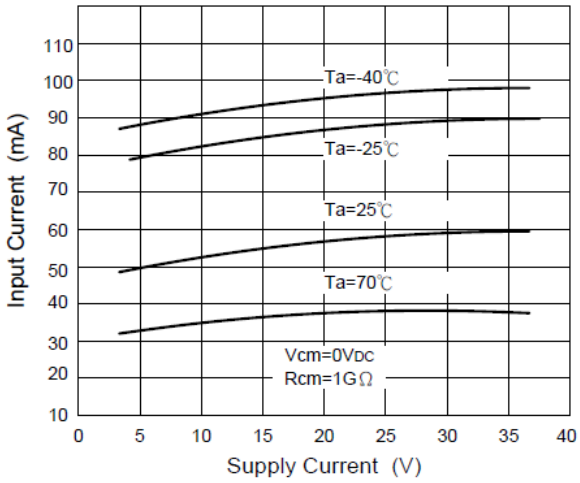


Fig.3 Output Saturation Voltage

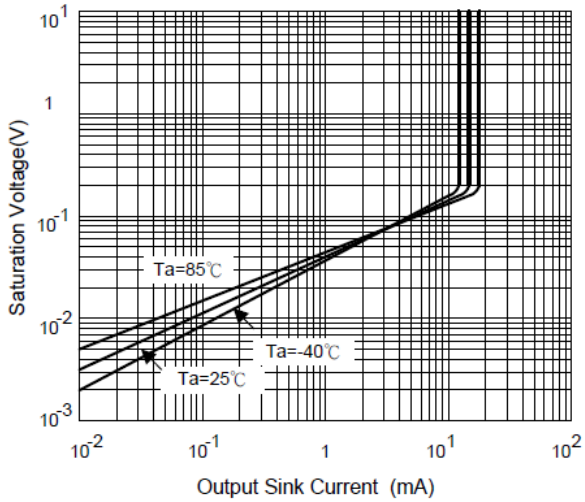


Fig.4 Reponse Time For Various Input Overdrive Negative Transition

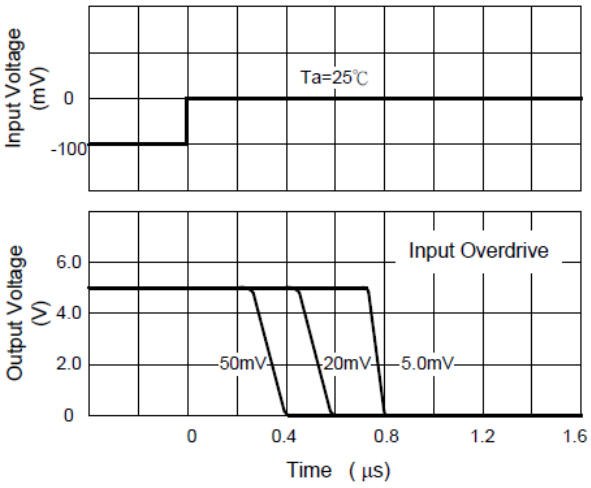
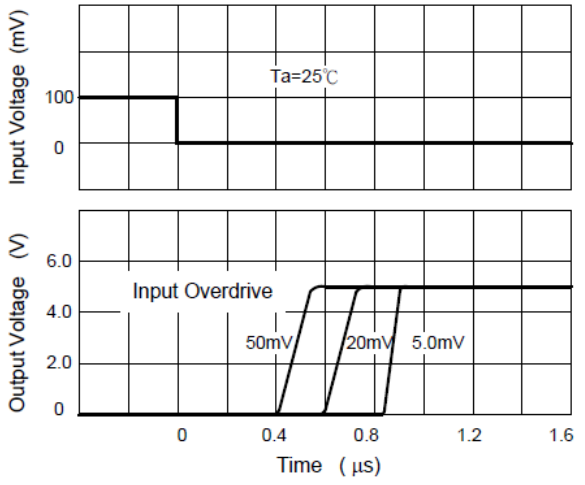


Fig.5 Reponse Time For Various Input Overdrive Positive Transition



TYPICAL CHARACTERISTICS(cont.)

Fig.6

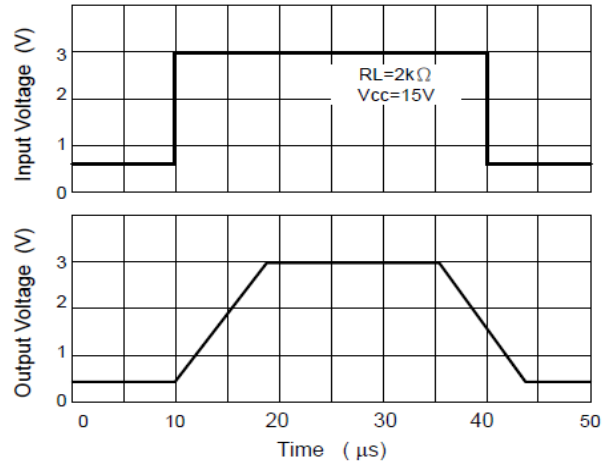


Fig.7 Voltage Follower Pulse Response (Small Signal)

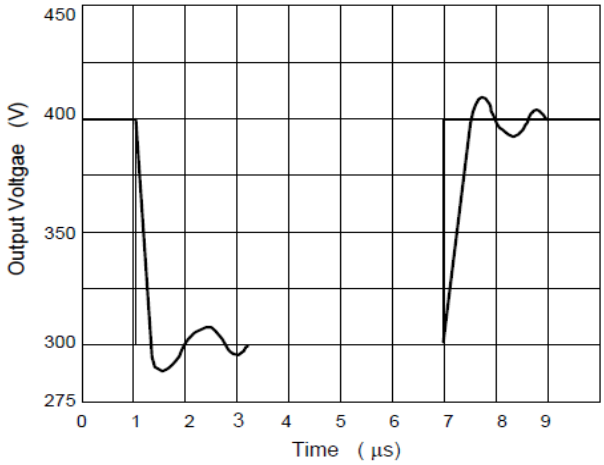


Fig.8 Large Signal Frequency Response

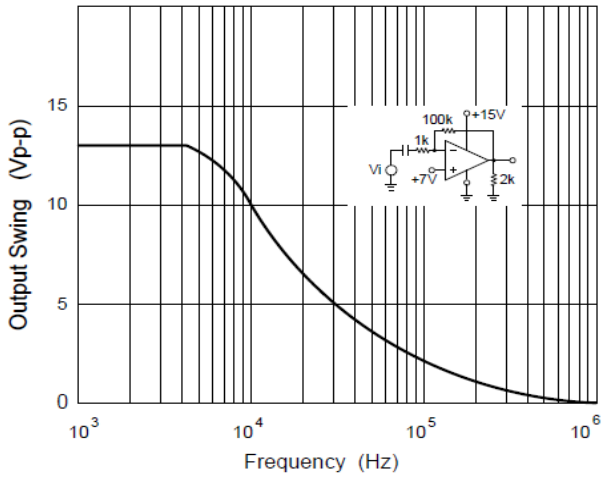


Fig.9 Output Characteristics Current Sourcing

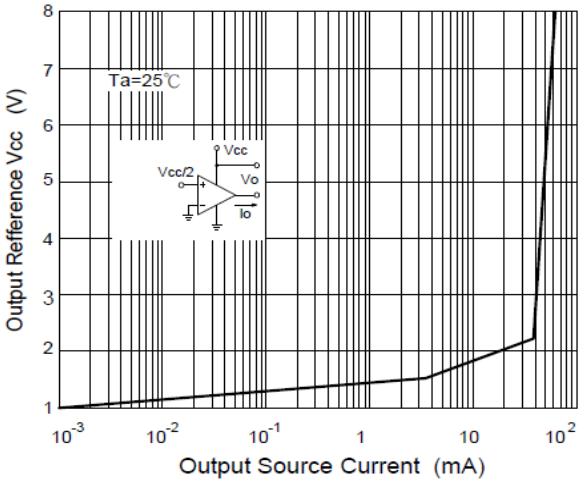


Fig.10 Output Characteristics Current Sinking

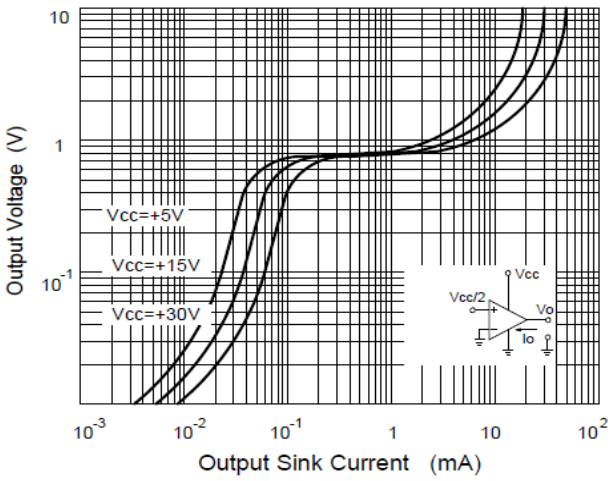


Fig.11 Current Limiting