T-73-53

IR9311/IR9311N High Speed Comparator

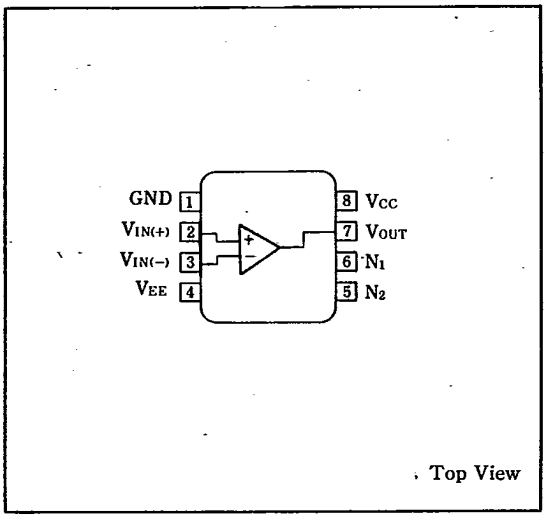
■ Description

The IR9311/IR9311N is a high-speed voltage comparators with strobe capability. It's outputs are compatible with DTL, TTL and MOS logic circuits.

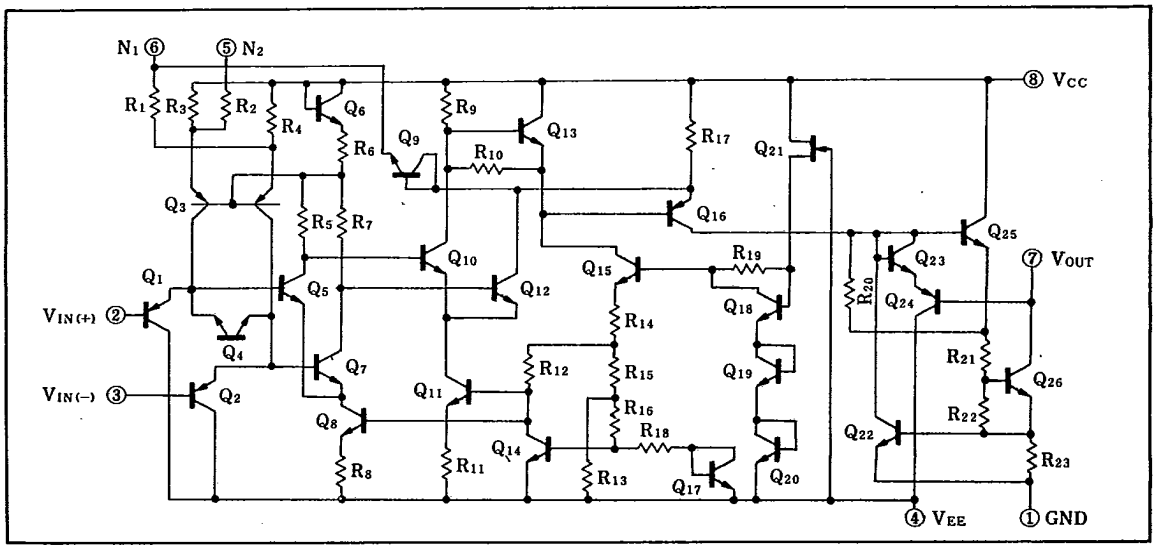
■ Features

1. Fast response time
2. Strobe capability
3. Output current to 50mA
4. 8-pin dual-in-line package (IR9311)
   8-pin small-outline package (IR9311N)

■ Pin Connections



■ Equivalent Circuit



■ Absolute Maximum Ratings

(Ta=25℃)

Parameter	Symbol	Condition		Rating	Unit
Supply voltage	$V_{CC}-V_{EE}$			36	V
Output-negative supply voltage	$V_{OUT}-V_{EE}$			40	V
Ground-negative supply voltage	$GND-V_{EE}$			30	V
Differential input voltage	V_{ID}			±30	V
In-phase input voltage*1	V_{ICM}			±15	V
Output short-circuit time				10	s
Power dissipation	P_D	Ta≦25℃	IR9311	500	mW
			IR9311N	520	
P_D derating ratio	ΔP_D/℃	Ta>25℃	IR9311	5	mW/℃
			IR9311N	5.2	
Operating temperature	T_{opr}			−20～+70	℃
Storage temperature	T_{stg}			−55～+150	℃

*1 If supply voltage falls below±15V, $V_{ICM}=V_{CC}$, V_{EE}

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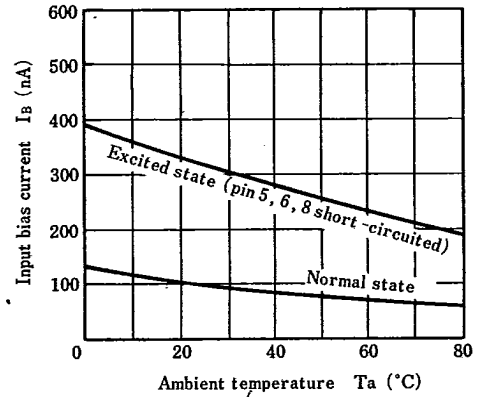
■ Electrical Characteristics

(V_{CC}=15V, V_{EE}=−15V, Ta=25℃)

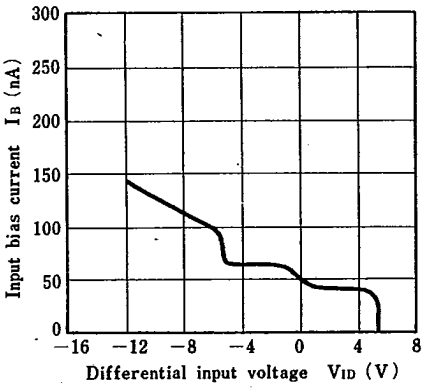
Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Input offset voltage	V_{IO}	R_S≦50kΩ		2.0	7.5	mV
Input offset current	I_{IO}			6.0	50	nA
Input bias current	I_B			100	250	nA
Major amplitude voltage gain	A_V		92	106		dB
Response time				200		ns
Saturation voltage	V_{SAT}	V_{IN}≦−10mV, I_{OUT}=−50mA		0.75	1.5	V
Strobo operating current				3		mA
Output leakage current	I_{OL}	V_{IN}≧10mV, V_{OUT}=35V		0.2	50	nA

■ Electrical Characteristic Curves (Unless otherwise specified, V_{CC}=15V, V_{EE}=−15V, Ta=25℃)

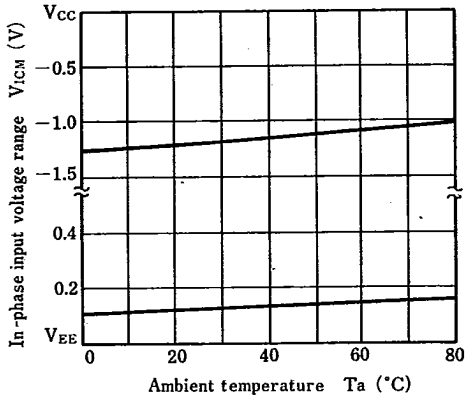
Input bias current—Ambient temperature Characteristics



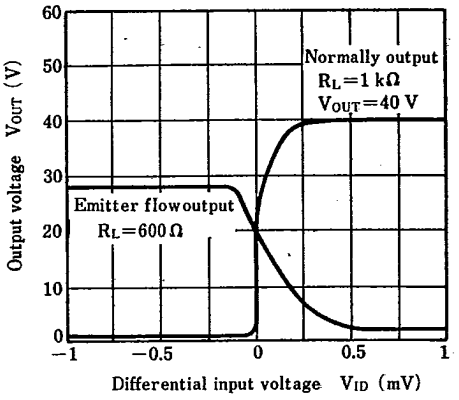
Input bias current—Differential input voltage Characteristics



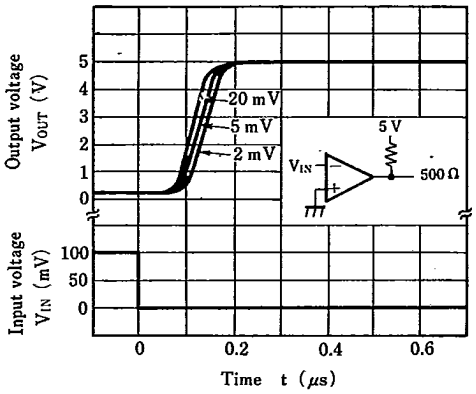
In-phase input voltage range—Ambient temperature Characteristics



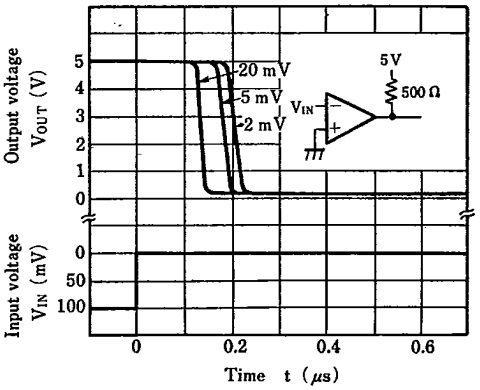
Transmission function Characteristics



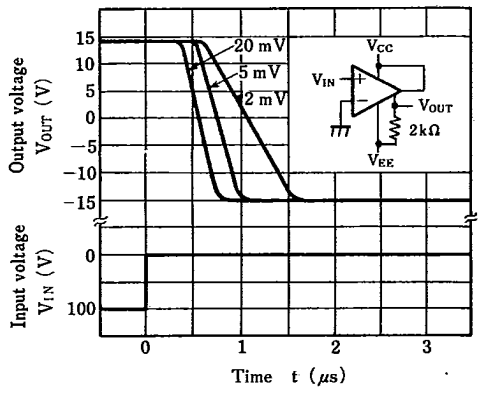
Response time—Over drive Characteristics



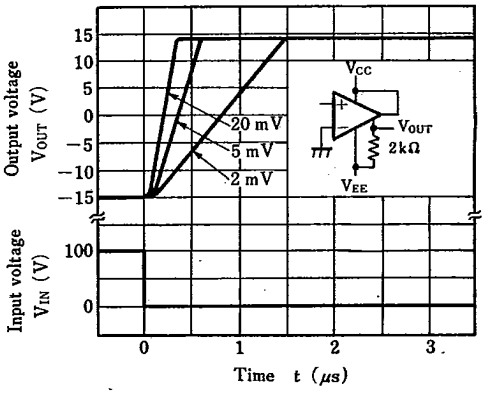
Response time—Over drive Characteristics



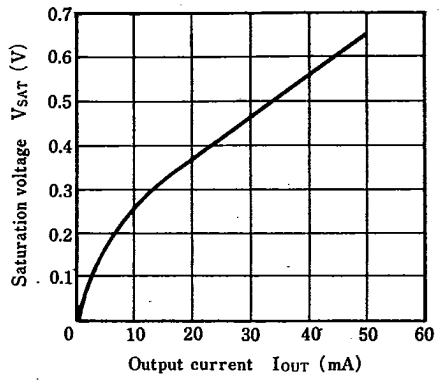
Response time—Over drive Characteristics



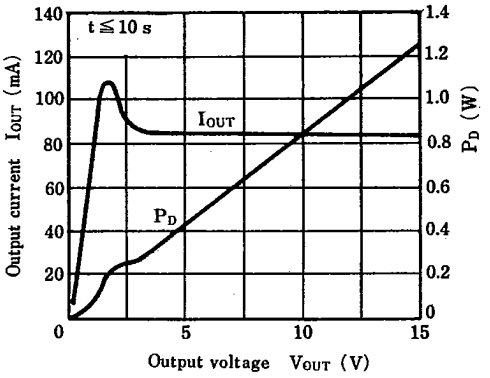
Response time—Over drive Characteristics



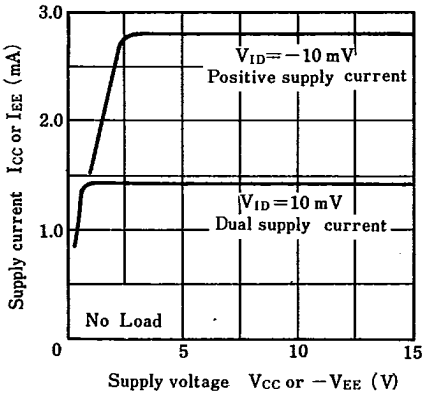
Saturation voltage—Output current Characteristics



Output limit Characteristics



Supply current—Supply voltage Characteristics



Supply current—Ambient temperature Characteristics