

General Description

The CMPRR XC06 analogue standard cell is a fast, universal Rail-to-Rail Comparator suitable for many on-Chip protection and monitoring purposes. It's typical response time is below 50ns allowing CMPRR to be used in timing critical applications (for example over current detection).

The comparator's input stage comprises of a cross coupled pair of 4 MOS transistors, a P-Channel and a N-Channel pair respectively. Hence the cell is able to operate on common mode levels which are close to the supply rails.

Ratings, Parameters and Conditions

Parameter / Condition	Symbol	Min	Typ.	Max	Unit	Comment
Electrical Parameters:						
Supply Voltage	V_{dd}	4.75	5	5.25	V	
Active Supply Current	I_{dd}		8		μA	depending on bias conditions
Input Offset Voltage	V_{off}			2	mV	
Response Time	T_{LH}		50	200	nS	depending on bias conditions and input overdrive
Input Common Mode Range	V_{COM}	$V_{ss} + 100$		$V_{dd} - 100$	mV	
Absolute Maximum Ratings:						
Operating Temperature	T_{range}	-40		140	$^{\circ}C$	
Supply Voltage	V_{dd}	-0.3		6	V	
Input Voltage	V_{in}	-0.3		$V_{dd} + 0.7$		
Output Voltage	V_{out}	-0.3		$V_{dd} + 0.7$		
Operating Conditions:						
Ambient Temperature	T_{amb}	-20	27	80	$^{\circ}C$	

IO-Description

Interface	I/O	Function	Comment
VSS	input	Supply	
VDD	Input	Supply	
SBY/SBYN	input	StandBy	
VBN	Input	Bias	
VBP	Input	Bias	
INP	Input	Positive In	
INN	Input	Negative In	
Out	Output	Comparator Output	

Block schematic, ext. component diagram

