Device TLV3501A-Q1 Low Power Comparator

Class	Failure Effects
A	Damage to device affects application functionality
B	No damage to device but thermal damage must be considered
C	No damage to device but can affect application functionality
D	No damage to device and no affect to application functionality

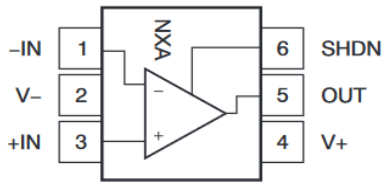

Table 2. Pin FMEA Analysis for Pin Short-Circuit to GND

Pin	Short to GND		Device		
No.	Name	Damage	Functionality	Comments	Class
1	-IN	No	Yes	Output goes high, if other input is positive	C
2	V-	No	Yes	No change if same node as GND	D
3	+IN	No	Yes	Output goes low, if other input is positive	C
4	V+	No	No	Main suppy shorted out (no power to device)	B
5	OUT	Possible	Yes	Thermal stress due to high power dissipation	B
6	SHDN	No	Yes	No change if same node as GND	D

Table 3. Pin FMEA Analysis for Pin Open-Circuit

Pin	Open pin		Device		
No.	Name	Damage	Functionality	Comments	Class
1	-IN	No	Yes	Output may be low or high	C
2	V-	Possible	Affected	Lowest voltage pin will drive GND pin internally (via diode)	B
3	+IN	No	Yes	Output may be low or high	C
4	V+	No	Yes	Main suppy open (no power to device)	C
5	OUT	No	Yes	Output can't drive application load	C
6	SHDN	No	No	Output voltage is undetermined	C

Table 4. Pin FMEA Analysis for Pin Short-Circuit to VCC

Pin	short to VCC		Device		
No.	Name	Damage	Functionality	Comments	Class
1	-IN	No	Yes	Output goes low, if other input is less positive	C
2	V-	No	No	Main suppy shorted out (no power to device)	C
3	+IN	No	Yes	Output goes high, if other input is less positive	C
4	V+	No	Yes	No change if same node as VCC	D
5	OUT	Possible	Yes	Thermal stress due to high power dissipation	B
6	SHDN	No	Yes	Output voltage is undetermined	C

Table 5. Pin FMEA Analysis for Pin Short-Circuit to next higher pin number

Pin	short to next pin				
No.	Name	Damage	Functionality	Comments	Class
1 to 2	-IN to V-	No	Yes	Output goes high, if other input is positive	C
2 to 3	V- to +IN	No	Yes	Output goes low, if other input is positive	C
3 to 4	+IN to V+	No	Yes	Output goes high, if other input is less positive	C
4 to 5	V+ to OUT	Possible	Yes	Thermal stress due to high power dissipation	B
5 to 6	OUT to SHDN	No	Yes	Output voltage is undetermined	C
6 to 1	SHDN to -IN	No	Yes	Output voltage is undetermined	C