

HDSP-390x Series, HDSP-420x Series, HDSP-860x Series, HDSP-N15x Series 20 mm (0.8 inch) Seven-Segment Displays

Description

Broadcom® tests parts at the absolute maximum rated conditions recommended for the device. The actual performance that you obtain from Broadcom parts depends on the electrical and environmental characteristics of your application, but will probably be better than the performance outlined in the table.

Table 1: Reliability Tests

Test Name	Reference	Test Conditions	Units Tested	Units Failed
High Temperature Operating Life	JESD22-A108	$T_A = 55^{\circ}\text{C}$ for 1000 hours Deep Red $I_F = 40\text{ mA}$ Red $I_F = 35\text{ mA}$ Green $I_F = 27\text{ mA}$ Yellow $I_F = 35\text{ mA}$	40	0
Low Temperature Operating Life	JESD22-A108	$T_A = -40^{\circ}\text{C}$ for 1000 hours Deep Red $I_F = 40\text{ mA}$ Red $I_F = 40\text{ mA}$ Green $I_F = 30\text{ mA}$ Yellow $I_F = 40\text{ mA}$	40	0
Temperature Humidity Operating Life	JEITA ED-4701/ 100 102	$T_A = 85^{\circ}\text{C}$, 85% RH for 500 hours Deep Red $I_F = 15\text{ mA}$ Red $I_F = 14\text{ mA}$ Green $I_F = 12\text{ mA}$ Yellow $I_F = 14\text{ mA}$	40	0
Temperature Cycle	JESD22-A104	$-55^{\circ}\text{C}/100^{\circ}\text{C}$, 15-minute dwell, 5-minute transfer, 100 cycles	180	0
High Temperature Storage Life	JESD22-A103	$T_A = 85^{\circ}\text{C}$ for 1000 hours	40	0
Low Temperature Storage	JESD22-A119	$T_A = -40^{\circ}\text{C}$ for 1000 hours	40	0
Temperature Humidity Storage Life	JEITA ED-4701/ 100 103	$T_A = 85^{\circ}\text{C}$, 85% RH for 1000 hours	40	0
Mechanical Shock	JESD22-B104	1500G, 0.5 ms, 5 shocks in each of orientation (X1, X2, Y1, Y2, Z1, Z2)	28	0
Vibration	JESD22-B103	4 cycles, 4 minutes each X, Y, and Z at 0.06 in. at 20 Hz to 2000 Hz, peak acceleration 20G	28	0

Table 1: Reliability Tests (Continued)

Test Name	Reference	Test Conditions	Units Tested	Units Failed
Solderability	J-STD-002	245°C for 5 seconds	28	0
Solder Heat Resistance	JESD22-B106	260 ± 5°C for 10 ± 5 seconds	28	0

NOTE: A failure is any LED that is open or shorted or that failed to emit light (except for the solderability test).

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