

## HSMx-C320

### Top-Emitting SMT Lens ChipLED

#### 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 500 hours HSMA/HSMC/HSME/HSML-C320: $I_F = 20\text{ mA}$ HSMQ-C320: $I_F = 12\text{ mA}$ HSMR-C320: $I_F = 12\text{ mA}$	56	0
Temperature Humidity Bias	JEITA ED-4701/ 100 102	$T_A = 60^\circ\text{C}$ , RH = 90% for 500 hours HSMA/HSMC/HSME/HSML-C320: $I_F = 13\text{ mA}$ HSMQ-C320: $I_F = 8\text{ mA}$ HSMR-C320: $I_F = 8\text{ mA}$	56	0
Low Temperature Operating Life	JESD22-A108	$T_A = -40^\circ\text{C}$ for 500 hours HSMA/HSMC/HSME/HSML-C320: $I_F = 20\text{ mA}$ HSMQ-C320: $I_F = 20\text{ mA}$ HSMR-C320: $I_F = 20\text{ mA}$	56	0
Temperature Cycling	JESD22-104	$-40^\circ\text{C}/85^\circ\text{C}$ 15-minute dwell, 5-minute transfer, 100 cycles	336	0
Temperature Humidity Storage Life	JEITA ED-4701/ 100 103	$T_A = 60^\circ\text{C}$ , 90% RH, for 500 hours	56	0
Low Temperature Storage	JESD22-A119	$T_A = -40^\circ\text{C}$ for 500 hours	56	0
High Temperature Storage Life	JESD22-A103	$T_A = 85^\circ\text{C}$ for 500 hours	56	0
Solderability	EIA/IPC/JEDEC J-STD-002	$245^\circ\text{C}$ for 5 seconds	28	0
Mechanical Shock	JESD22-B104	1500G, 0.5 ms, 5 shocks in each orientation (X1, X2, Y1, Y2, Z1, Z2)	28	0
Vibration	JESD22-B103	4 cycles, 4 minutes each X, Y, Z axis, frequency: 20 Hz to 2000 Hz, peak acceleration: 20G	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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