10 mm Slim Font S4 GaP Display

Reliability Data Sheet

Description

The following cumulative test results have been obtained from testing performed at Avago Technologies in accordance with customer specific requirements.

The actual performance you obtain from Avago parts depends on the electrical and environmental characteristics of your application but will probably be better than the performance outlined in Table 1.

Table 1. Life Tests
Demonstrated Performance

						Point Typical Performance	
Colors	**Stress Test**	**Stress Test Conditions**	**Total Device Hrs.**	**Units Tested**	**Units Failed**	**MTBF**	**Failure Rate (% /1K Hours)**
GaP Green	High Temperature Operating Life	T_A = +55°C $I_{FP,HER}$ = 55 mA $I_{FP,\ green}$ = 5.5 mA Cycle = 1/10 Duty Frequency = 1 kHz	22,000	22	0	22,000	< 4.54
GaP Green	High Temperature Operating Life	T_A = + 105°C $I_{FP,HER}$ = 55 mA $I_{FP,green}$ = 5.5 mA Cycle = 1/10 Duty Frequency = 1 kHz	22,000	22	0	22,000	< 4.54
GaP Green	Humidity Operating Life	T_A = + 85°C RH = 85% $I_{FP,HER}$ = 55 mA $I_{FP,green}$ = 5.5 mA Cycle = 1/10 Duty Frequency = 1 kHz	30,000	30	0	30,000	< 3.33

Table 2. Environmental Tests

Test Name	Reference	Test Conditions	Units Tested	Units Failed
Solder Heat Resistance	IEC 68 2-20	1x solder dip at 260°C for total of 6 ± 1 seconds. Immersion depth 1.5 mm from case.	22	0
Thermal Shock	Avago Ref.	Upper temp. 105 ± 5°C, lower temp. -40 ± 5°C Dwell time 30 minutes Transition time 20 deg. per minutes Total cycles = 30	77	0
Vibration Sine Sweep	IEC 68 part 2-6 Test group Fc	Frequency range = 10 to 2000 Hz to 10 Hz Constant displacement = 1.5 mm peak to peak (for 10 to 55 Hz) Constant acceleration = 10 g (for 55 to 2000 Hz) Sweep rate =1 oct/min., Test durations = 2 hrs/axis Number of axes = 3 (x, y, z)	10	0
Mechanical Shock	IEC 68 part 2-27 Test group Ea	Pulse shape = half sine Peak acceleration = 100 g Pulse duration = 6 ± 0.5 ms Number of axes = 3 (x, y, z) Number of directions = 6 (± x, ± y, ± y) Number of shocks = 3 shocks/direction	10	0
Drop Test	Avago Ref.	1.2 meter drop, concrete surface, 10 repetitions	10	0
Temperature Cycle	IEC 68 part 2-14 Test group Na	105 ± 5°C - 30 min. 25 ± 5°C - 15 min. -40 ± 5°C - 30 min. Total cycles = 60	60	0
Temperature Cycle	Avago Ref.	105 ± 5°C - 15 min. 25 ± 5°C - 2 min. -40 ± 5°C - 15 min. Total cycles = 1100	60	0
High Temperature Storage	IEC 68 part 2-2 Test group Ba	105 ± 5°C Total hrs = 168	22	0
Low Temperature Storage	IEC 68 part 2-1 Test group Aa	-40°C Total hrs = 168	22	0
Solderability	IEC 68 2-20 Test group Ta	Solder temp. = 235 ± 5°C Solder time = 2 ± 0.5 sec. Immersion rate = 25 ± 5 mm/sec. One time dip	10	0
Terminal Tension Strength	IEC 68 2-21 Test group Ua1	Bending arc 90 degrees Aoolied force 227 gw, 3 cycles	10	0
Dewetting	IEC 68 2-20 Test group Ta	260 ± 5°C 2.5 ± 0.5 sec Immersion rate 5 ± 2 mm /sec. Emersion rate 5 ± 2 mm/sec.	10	0

For product information and a complete list of distributors, please go to our web site: **www.avagotech.com**

5988-4865EN - May 22, 2007

AVAGO TECHNOLOGIES