

AEDR-9820/9830

Three-Channel Reflective Incremental Encoders Analog and Digital Output

Description

The following cumulative test results have been obtained from testing performed at Broadcom in accordance with the latest revisions of the JEDEC standards. 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 [Table 1](#).

Table 1: Life Tests

Test Name	Reference	Test Conditions	Units Tested	Units Failed
High Temperature Operating Life	JESD22-A108	$T_A = 125^{\circ}\text{C}$ for 1000 hours, $V_{DD} = 5.0\text{V} \pm 0.5\text{V}$	929	0
Temperature Humidity Bias	JESD22-A101	Preconditioning + $T_A = 85^{\circ}\text{C}$, RH = 85% for 1000 hours, $V_{DD} = 5.0\text{V} \pm 0.5\text{V}$	287	0
Low Temperature Operating Life	JESD22-A108	$T_A = -40^{\circ}\text{C}$ for 1000 hours, $V_{DD} = 5.0\text{V} \pm 0.5\text{V}$	77	0

Table 2: Environmental Tests

Test Name	Reference	Test Conditions	Units Tested	Units Failed
Temperature Cycling	JESD22-A104 JESD22-A113	-40°C to 125°C (Condition G) Preconditioning + 1000 cycles	853	0
High Temperature Storage Life	JESD22-A103	$T_A = 150^{\circ}\text{C}$ for 1000 hours	295	0

Table 3: Mechanical Tests

Test Name	Reference	Test Conditions	Units Tested	Units Failed
Vibration Variable Frequency	JESD22-B103	50g, 20 Hz to 2000 kHz, 5 minutes per cycle, 4 cycles per axis	15	0
Mechanical Shock	JESD22-B104	5 shocks, 0.5-ms duration, 1500g peak acceleration	15	0

Table 4: Electrical Tests

Test Name	Reference	Test Conditions	Units Tested	Units Failed
Human Body Model ESD	JESD22-A114	4000V	3	0
Charged Device Model ESD	JESD22-A101	1000V	3	0
Latch-Up	JESD78	± 100 mA, $1.5 \times V_{DD}$ max. = 8.25V, Class II	3	0

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