

AN503: SCM5B

Application Note: Failure Rate Calculation and Prediction

Failure rate calculations for the SCM5B modules are derived from the MIL-HDBK-217E specification. The stress-analysis method is used at ground benign environment, 35°C temperature, and quality level of B-2 to D-1 depending on the part. Our specified humidity level is 95% RH noncondensing.

MODEL	FAILURES/10⁶ HRS	MTBF (HRS)
SCM5B30/31/32/37/392-xx	1.54	650,000
SCM5B33-xx	2.14	468,000
SCM5B40/41-xx	1.46	680,000
SCM5B38/39/42/43/49-xx	1.35	740,000
SCM5B34/35/36-xx	1.48	675,000
SCM5B45-xx	1.84	545,000
SCM5B47-xx	1.50	670,000
SCMPB01, 05	1.83	546,000
SCMPB02, 06	2.16	463,000
SCMPB03	0.19	5,150,000
SCMPB04	0.23	4,430,000

Estimated actual failure rates are predicted to be much lower due to 100% powered burn-in for 48 hours at 85°C. The typical measured failure rate for the 5B modules is 0.34 failures per 10⁶ hours (2,900,000 hours MTBF).