

TL331-Q1

Functional Safety Failure In Time (FIT) Rates

Table 1. Component Failure Rates per IEC TR 62380 / ISO 26262 Part 11

FIT IEC TR 62380 / ISO 26262	FIT (Failures Per 109 Hours)
Total FIT Rate	4
Die FIT Rate	2
Package FIT Rate	2

The failure rate and mission profile information in [Table 1](#) comes from the Reliability data handbook IEC TR 62380 / ISO 26262 part 11:

- Mission Profile: Motor Control from Table 11
- Power dissipation: 5 mW
- Climate type: World-wide Table 8
- Package factor lambda 3 Table 17b
- Substrate Material: FR4
- EOS FIT rate assumed: 0 FIT

Table 2. Component Failure Rates per Siemens Norm SN 29500-2

Table	Category	Reference FIT Rate	Reference Virtual T_J
4	Bipolar Op Amp, Comp	3 FIT	55 C

The Reference FIT Rate and Reference Virtual T_J (junction temperature) in [Table 2](#) come from the Siemens Norm SN 29500-2 tables 1 through 5. Failure rates under operating conditions are calculated from the reference failure rate and virtual junction temperature using conversion information in SN 29500-2 section 4.

Failure Mode Distribution (FMD)

Table 3. Die Failure Modes and Distribution

Die Failure Modes	Failure Mode Distribution (%)
Out open (HIZ)	15%
Out saturate high	25%
Out saturate low	25%
Out functional not in specification	35%