

Part Number: 2N7002K

Package Type: SOT-23

1. Reliability Test Method And Description:

Stress Test Item:	HTRB
Test Duration (Hours):	1000
Sample Q'ty (Pcs):	77
Failure Q'ty (Pcs):	0
Total Device Hours (Hrs):	77000
Accelerated Temp. (Ta)(°C):	150
Normal Operation Temp. (Tu)(°C):	55
Eactivation Energy (Ea):	0.7
K (Boltzmans Constant):	8.617164E-5 eV/°K
Chi-Square Constant @confidence level:60% (chi):	1.833
Chi-Square Constant @confidence level:90% (chi):	4.605

Acceleration Factor ,Af at Tu list:

Tu	55°C	85°C	100°C	125°C	150°C
Af	259.2	32.6	13.1	3.3	1.0

2. Results(Use Conditions Tu=55°C & confidence level:90%):

Failure Rate FIT (@Operation Condition):	115.4	FIT
Mean Time to Failure (MTTF):	8668504	Hours
	990	Years

3. MTTF/FIT Calculate Equations:

Af	$\exp[(Ea/K) \cdot (1/(Tu+273.15) - 1/(Ta+273.15))]$
FIT @ Operation Condition	$Chi \cdot 10^9 / (2 \cdot Hrs \cdot Af)$
MTTF Hours	$10^9 / FIT$
MTTF Years	$10^9 / (FIT \cdot 24 \cdot 365)$

Remark: JSCJ Laboratory reserves the right of final interpretation of this report