

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	$\exp[(Ea/K) * (1/(Tu+273.15)-1/(Ta+273.15))]$
FIT @ Operation Condition	$Chi * 10^9 / (2 * Hrs * AF)$
MTTF hours	$10^9 / FIT$
MTTF years	$10^9 / (FIT * 24 * 365)$

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