

JEITA EDR-4708C  
Guideline for IC Reliability Qualification Plan

## CORRIGENDA

Original			Corrected		
<u>Page 32</u>			<u>Page 32</u>		
<b>Table 11-1 Example of trial calculation of equivalent time in the operating life test with consideration of the mission profile (Application in automotive cabin peripherals)</b>			<b>Table 11-1 Example of trial calculation of equivalent time in the operating life test with consideration of the mission profile (Application in automotive cabin peripherals)</b>		
<b>Mission profile</b>			<b>Mission profile</b>		
$T_a$	$T_j$ (*1)	Operating time	$T_a$	$T_j$ (*1)	Operating time
Test settings			Test settings		
Operating time converted to equivalent under accelerated settings			Operating time converted to equivalent under accelerated settings		
125 °C temperature acceleration (*2) only			125 °C temperature acceleration (*2) only		
125 °C temperature acceleration (*2) + 3.63 V voltage acceleration (*3)			125 °C temperature acceleration (*2) + 3.63 V voltage acceleration (*3)		
0 °C	20 °C	400 h	0 °C	20 °C	400 h
30 °C	50 °C	1800 h	30 °C	50 °C	1800 h
50 °C	75 °C	1100 h	50 °C	70 °C	1100 h
65 °C	85 °C	4200 h	65 °C	85 °C	4200 h
Cumulative total		7500 h	Cumulative total		7500 h
125 °C 3.63 V (Voltage in actual use 3.3 V)			125 °C 3.63 V (Voltage in actual use 3.3 V)		

Original			Corrected		
<b>Page 37</b>			<b>Page 37</b>		
<b>Table 14-1 Example of trial calculation of equivalent time in the temperature cycle test, with consideration of the mission profile (Application in the automotive engine peripherals)</b>			<b>Table 14-1 Example of trial calculation of equivalent time in the temperature cycle test, with consideration of the mission profile (Application in the automotive engine peripherals)</b>		
Mission profile	Test settings	Conversion of actual number of cycles to it is equivalent under accelerated conditions	Mission profile	Test settings	Conversion of actual number of cycles to it is equivalent under accelerated conditions
$\Delta T$	Number of cycles		$\Delta T$	Number of cycles	
85 °C	10950 cycles	150 °C ~ –55 °C ( $\Delta T$ = 205 °C)	29.4 cycles	150 °C ~ –55 °C ( $\Delta T$ = 205 °C)	323.6 cycles
33 °C	43800 cycles		323.6 cycles	33 °C	29.4 cycles
Cumulative total	54750 cycles		353.1 cycles	Cumulative total	54750 cycles

Page 44		10 Calculation examples for mission profiles (sample lifetime test and test time calculation)								
		Test time <sup>(3)</sup>	Mission profile <sup>(2)</sup>		Acceleration settings/projected failure <sup>(2)</sup>		Acceleration model <sup>(2)</sup>		EDR-4708C <sup>(4)</sup> Derived sample Size/time <sup>(4)</sup> 0.1-Lifetime@CL90 % <sup>(4)</sup>	
			EDR-4708C <sup>(2)</sup>	AEC-Q100 <sup>(2)</sup>	EDR-4708C <sup>(2)</sup>	AEC-Q100 <sup>(2)</sup>	EDR-4708C <sup>(2)</sup>	AEC-Q100 <sup>(2)</sup>		
Original		High-temperature operating life test <sup>(2)</sup> (EDR-4708C <sup>(2)</sup> Comparison of engine-area application (1) and AEC-Q100) <sup>(2)</sup>	15 yrs/3.3 V <sup>(2)</sup> 20 °C/500 h <sup>(2)</sup> 75 °C/1000 h <sup>(2)</sup> 105 °C/4500 h <sup>(2)</sup> 125 °C/1000 h <sup>(2)</sup> 145 °C/500 h <sup>(2)</sup> Operating time <sup>(2)</sup> Total: 7500 hr <sup>(2)</sup>	15 yrs <sup>(2)</sup> 87 °C/12000 h <sup>(2)</sup>	TDDB <sup>(2)</sup> Ea = 0.7 eV <sup>(2)</sup> $\beta = 4^{(2)}$ 125 °C <sup>(2)</sup> 3.96 V <sup>(2)</sup>	Ea = 0.7 eV <sup>(2)</sup> 125 °C <sup>(2)</sup>	$\alpha_T = \exp\left(\frac{E_a}{k}\left(\frac{1}{T_1} - \frac{1}{T_2}\right)\right)$ $\alpha_t = \exp\{\beta(V_2 - V_1)\}$	$\alpha_T = \exp\left(\frac{E_a}{k}\left(\frac{1}{T_1} - \frac{1}{T_2}\right)\right)$	231 pcs/512 h <sup>(2)</sup> 31 pcs/1000 h <sup>(2)</sup> (1394 h) <sup>(2)</sup>	AEC-Q100 <sup>(2)</sup> Regulation sample size/time <sup>(2)</sup> LTPD criteria <sup>(2)</sup>
		High-temperature operating life test <sup>(2)</sup> (EDR-4708C <sup>(2)</sup> Comparison of engine-area application (2) and AEC-Q100) <sup>(2)</sup>	15 yrs/3.3 V <sup>(2)</sup> 20 °C/500 h <sup>(2)</sup> 75 °C/500 h <sup>(2)</sup> 105 °C/8000 h <sup>(2)</sup> 125 °C/2000 h <sup>(2)</sup> 145 °C/1000 h <sup>(2)</sup> Operating time <sup>(2)</sup> Total: 12000 hr <sup>(2)</sup>	15 yrs <sup>(2)</sup> 87 °C/12000 h <sup>(2)</sup>	TDDB <sup>(2)</sup> Ea = 0.7 eV <sup>(2)</sup> $\beta = 4^{(2)}$ 125 °C <sup>(2)</sup> 3.96 V <sup>(2)</sup>	Ea = 0.7 eV <sup>(2)</sup> 125 °C <sup>(2)</sup>	$\alpha_T = \exp\left(\frac{E_a}{k}\left(\frac{1}{T_1} - \frac{1}{T_2}\right)\right)$ $\alpha_t = \exp\{\beta(V_2 - V_1)\}$	$\alpha_T = \exp\left(\frac{E_a}{k}\left(\frac{1}{T_1} - \frac{1}{T_2}\right)\right)$	231 pcs/969 h <sup>(2)</sup> 339 pcs/1000 h <sup>(2)</sup> (1394 h) <sup>(2)</sup>	AEC-Q100 <sup>(2)</sup> Regulation sample size/time <sup>(2)</sup> LTPD criteria <sup>(2)</sup>
Corrected		High-temperature operating life test <sup>(2)</sup> (EDR-4708C <sup>(2)</sup> Comparison of engine-area application (1) and AEC-Q100) <sup>(2)</sup>	15 yrs/3.3 V <sup>(2)</sup> 20 °C/500 h <sup>(2)</sup> 75 °C/1000 h <sup>(2)</sup> 105 °C/4500 h <sup>(2)</sup> 125 °C/1000 h <sup>(2)</sup> 145 °C/500 h <sup>(2)</sup> Operating time <sup>(2)</sup> Total: 7500 hr <sup>(2)</sup>	15 yrs <sup>(2)</sup> 87 °C/12000 h <sup>(2)</sup>	TDDB <sup>(2)</sup> Ea = 0.7 eV <sup>(2)</sup> $\beta = 4^{(2)}$ 125 °C <sup>(2)</sup> 3.96 V <sup>(2)</sup>	Ea = 0.7 eV <sup>(2)</sup> 125 °C <sup>(2)</sup>	$\alpha_T = \exp\left(\frac{E_a}{k}\left(\frac{1}{T_1} - \frac{1}{T_2}\right)\right)$ $\alpha_t = \exp\{\beta(V_2 - V_1)\}$	$\alpha_T = \exp\left(\frac{E_a}{k}\left(\frac{1}{T_1} - \frac{1}{T_2}\right)\right)$	231 pcs/601 h <sup>(2)</sup> 52 pcs/1000 h <sup>(2)</sup> (1394 h) <sup>(2)</sup>	AEC-Q100 <sup>(2)</sup> Regulation sample size/time <sup>(2)</sup> LTPD criteria <sup>(2)</sup>
		High-temperature operating life test <sup>(2)</sup> (EDR-4708C <sup>(2)</sup> Comparison of engine-area application (2) and AEC-Q100) <sup>(2)</sup>	15 yrs/3.3 V <sup>(2)</sup> 20 °C/500 h <sup>(2)</sup> 75 °C/500 h <sup>(2)</sup> 105 °C/8000 h <sup>(2)</sup> 125 °C/2000 h <sup>(2)</sup> 145 °C/1000 h <sup>(2)</sup> Operating time <sup>(2)</sup> Total: 12000 hr <sup>(2)</sup>	15 yrs <sup>(2)</sup> 87 °C/12000 h <sup>(2)</sup>	TDDB <sup>(2)</sup> Ea = 0.7 eV <sup>(2)</sup> $\beta = 4^{(2)}$ 125 °C <sup>(2)</sup> 3.96 V <sup>(2)</sup>	Ea = 0.7 eV <sup>(2)</sup> 125 °C <sup>(2)</sup>	$\alpha_T = \exp\left(\frac{E_a}{k}\left(\frac{1}{T_1} - \frac{1}{T_2}\right)\right)$ $\alpha_t = \exp\{\beta(V_2 - V_1)\}$	$\alpha_T = \exp\left(\frac{E_a}{k}\left(\frac{1}{T_1} - \frac{1}{T_2}\right)\right)$	231 pcs/1137 h <sup>(2)</sup> 341 pcs/1000 h <sup>(2)</sup> (1394 h) <sup>(2)</sup>	AEC-Q100 <sup>(2)</sup> Regulation sample size/time <sup>(2)</sup> LTPD criteria <sup>(2)</sup>

NOTE If you have any questions regarding this correction form, please contact Japan Electronics and Information Technology Industries Association (JEITA).

(<https://www.jeita.or.jp/cgi-bin/form/form.cgi>) \*Sorry Japanese form only.