



可靠性考核标准 (消费级)

Item	Conditions	Criteria	Reference
MSL3	Bake: 125°C 24H Moisture Soak : 30°C 60%RH 192H Reflow: 260°C 3Cycle	0 fail	JESD020D
HTRB	VDS=80%BVDSS ,VGS=0V,150°C,1000H	1/77	JESD22-A108
HTGB	VGS=100%VGS,VDS=0V,150°C,1000H	1/77	JESD22-A108
H3TRB	VDS=80%BVDSS(max100V),VGS=0V, 85°C 85%R.H, 1000H	1/77	JESD22-A101
HAST	VDS=80%BVDSS(max42V),VGS=0V, 130°C 85%R.H 33.3 psia, 96H	1/77	JESD22-A-110
PCT	Ta=121°C 100%R.H. 29.7psia, 96H	1/77	JESD22-A-102
UHAST	130°C 85%R.H 33.3psia, 96H	1/77	JESD22-A-118
TCT	TA=-65°C~150°C, 15min each, 500Cycle	1/77	JESD22-A104
IOL	$\Delta T=100^{\circ}C$ , on time=2min,off time=2min,15000Cycle	1/77	MIL-STD750 /Meth.1037
HTST	TA=150°C, 1000H	1/77	JESD22-A103
THT	TA=85°C85%RH, 1000H	1/77	JESD22-A101
ESD	HBM:23 $\pm 5^{\circ}C$ ,: 55% $\pm 10\%$ (RH) G TO S ( $\pm$ ) V=100V~Fail Step :100V MM: 23 $\pm 5^{\circ}C$ ,: 55% $\pm 10\%$ (RH) G TO S ( $\pm$ ) V=100V~Fail Step :100V CDM:23 $\pm 5^{\circ}C$ ,: 55% $\pm 10\%$ (RH) V=100V~Fail Step :100V	-/10	AEC Q101-001



可靠性考核标准 (工业级)

Item	Conditions	Criteria	Reference
MSL1	Bake: 125°C 24H Moisture Soak : 30°C 60%RH 192H Reflow: 260°C 3Cycle	0 fail	JESD020D
HTRB	VDS=100%BVDSS ,VGS=0V,150°C,1000H	0/77	JESD22-A108
HTGB	VGS=100%VGS,VDS=0V,150°C,1000H	0/77	JESD22-A108
H3TRB	VDS=80%BVDSS(max100V),VGS=0V, 85°C 85%R.H, 1000H	0/77	JESD22-A101
HAST	VDS=80%BVDSS(max42V),VGS=0V, 130°C 85%R.H 33.3 psia, 96H	0/77	JESD22-A-110
PCT	Ta=121°C 100%R.H. 29.7psia, 96H	0/77	JESD22-A-102
UHAST	130°C 85%R.H 33.3psia, 96H	0/77	JESD22-A-118
TCT	TA=-65°C~150°C, 15min each, 500Cycle	0/77	JESD22-A104
IOL	ΔT=100°C, on time=2min,off time=2min,15000Cycle	0/77	MIL-STD750 /Meth.1037
HTST	TA=150°C, 1000H	0/77	JESD22-A103
THT	TA=85°C85%RH, 1000H	0/77	JESD22-A101
ESD	HBM:23 ±5°C,: 55% ±10% (RH) G TO S (±) V=100V~Fail Step :100V MM: 23 ±5°C,: 55% ±10% (RH) G TO S (±) V=100V~Fail Step :100V CDM:23 ±5°C,: 55% ±10% (RH) V=100V~Fail Step :100V	-/10	AEC Q101-001



可靠性考核标准 (汽车级)

Item	Conditions	Criteria	Reference
MSL1	Bake: 125°C 24H Soak: 85°C 85%RH Reflow: 168H 260°C 3Cycle	0 fail	JESD020C JESD22-A113
HAST	$V_{DS}=80\%BV_{DSS}(\max 42V), V_{GS}=0V,$ 130°C 85%R.H 33.3 psia 96H	0/77	JESD22-A-110
H3TRB	$V_{DS}=80\%BV_{DSS}(\max 100V), V_{GS}=0V,$ 85°C 85%R.H, 1000H	0/77	JESD22-A-101
UHAST	130°C 85%R.H 33.3psia 96H	0/77	JESD22-A-118 or A101
AC	TA=121°C, 100%R.H, 15psig 96h	0/77	JESD22-A-102
TC	TA=-55°C~150°C, 1000Cycle	0/77	JESD22-A-104
TCHT	125°C TEST after TC using PV-determined limits at hot, followed by decap and wire pull on all wires from 5 devices for parts with internal bond wire sizes 5 mil diameter and less.	0/77	JESD22-A-104
TCDT	100% AM inspection after TC, followed by decap, inspection or wire pull on all wires from 5 parts for 5 highest delaminated parts. If AM shows no delaminating, no decap, inspection and wire pull is required.	0/77	JESD22-A-104 J-STD-035
IOL	$\Delta T \geq 100^\circ C, 15000\text{Cycle}$	0/77	MIL-STD-750 Method 1037
PTC	$\Delta T \geq 100^\circ C, 15000\text{Cycle}$	0/77	JESD22-A-105
HTRB	$V_{DS}=100\%BV_{DSS}, V_{GS}=0V, 150^\circ C, 1000H$	0/77	JESD22-A108
HTGB	$V_{GS}=100\%V_{GS}, V_{DS}=0V, 150^\circ C, 1000H$	0/77	JESD22-A108
DPA	Random sample of parts that have successfully completed H3TRB or HAST, and TC. The devices shall be examined under a magnification of up to 50X.	0/2	AEC-Q101-004 Section 4
PD	Verify physical dimensions to the applicable user part packaging specification for	0/30	JESD22-B-100

	dimensions and tolerances.		
WBP	-	0/10	MIL-STD-750-2 Method 2037
WBS	-	0/10	AEC Q101-003 JESD22 B116
DS	-	0/5	MIL-STD-750-2 Method 2017
TS	-	0/30	MIL-STD-750-2 Method 2036
RSH	Temperature of solder pot=260°C Time for dipping in solder=10sec	0/30	JEDEC JESD22-A-111 (SMD), or B-106 (PTH)
TR	-	0/10	JESD24-3, 24-4, 24-6
SD	TA=93°C 8H, Temperature of solder=245°C Time for dipping in solder=3sec.	-	J-STD-002
WG	-55 °C to 85 °C, air to air; 10 minute soak; ~3 cycles/h, 1500h; 30°C and 60% RH, 4000h 55°C and 85%RH, 4000h	-	AEC-Q005
DI	Temperature: 23 ± 5°C,Relative humidity : 55% ± 10% (RH) , Test gate-sourcevoltage: 0V~Fail, Step (max):1V	0/5	AEC-Q101-004 Section 3
EV	All qualification parts submitted for testing	0 fail	JESD22-B101
TEST	All qualification parts tested per the requirements of the appropriate part specification.	0 fail	User specification or supplier' s standard specification
PV	Test all parameters according to user specification over the part temperature range to insure specification compliance.	-/25	Individual AEC user specification
ESDH	Temperature: 23 ± 5°C,Relative humidity : 55% ± 10% (RH)G TO S (±) Test Voltage:100V~Fail Step :100V	-/30	AEC-Q101-001
ESDC	Temperature: 23 ± 5°C,Relative humidity : 55% ± 10% (RH)G TO S (±) Test Voltage:100V~Fail	-/30	AEC-Q101-005



	Step :100V		
UIS	Temperature: 23 ± 5°C,Relative humidity : 55% ± 10% (RH) , Test drain-sourcecurrent: 0A~Fail Step (max):1A	0/5	AEC-Q101-004 Section 2