TPS65135RTER

Quality, reliability & packaging data download

Status: ACTIVE

Report date: 04/24/2025

Assembly site: **TI MALAYSIA A/T**

RoHS	Yes
REACH	Yes
Device marking	CCR
Lead finish/Ball material	NIPDAU
MSL rating/Peak reflow	Level-2-260C-1 YEAR
Rating	Catalog

Material content

				Homogeneous Material Level		Component Level	
Component	**Substance**	**CAS Number**	**Amount (mg)**	**Percentage %**	**ppm**	**Percentage %**	**ppm**
Bond Wire							
Copper and Its Alloys	Copper	7440-50-8	0.209199	99.997610	999976	1.028652	10287
Copper and Its Alloys	Iron	7439-89-6	0.000001	0.000478	5	0.000005	0
Other Nonferrous Metals and Alloys	Manganese	7439-96-5	0.000001	0.000478	5	0.000005	0
Precious Metals	Silver	7440-22-4	0.000003	0.001434	14	0.000015	0
Sub-total	—	—	0.209204	100	1000000	1.028677	10287
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	0.425613	81.100038	811000	2.092781	20928
Thermoplastics	Epoxy	85954-11-6	0.099187	18.899962	189000	0.487712	4877
Sub-total	—	—	0.524800	100	1000000	2.580494	25805
Lead Frame							
Copper and Its Alloys	Copper	7440-50-8	9.384088	99.249995	992500	46.142491	461425
Other Nonferrous Metals and Alloys	Chromium	7440-47-3	0.024583	0.260000	2600	0.120877	1209
Other Nonferrous Metals and Alloys	Tin	7440-31-5	0.023638	0.250005	2500	0.116230	1162
Zinc and Its Alloys	Zinc	7440-66-6	0.022692	0.240000	2400	0.111579	1116
Sub-total	—	—	9.455001	100	1000000	46.491178	464912
Lead Frame Plating							
Nickel and Its Alloys	Nickel	7440-02-0	0.161704	95.120000	951200	0.795115	7951
Precious Metals	Gold	7440-57-5	0.001326	0.780000	7800	0.006520	65
Precious Metals	Palladium	7440-05-3	0.00697	4.100000	41000	0.034272	343
Sub-total	—	—	0.170000	100	1000000	0.835907	8359
Mold Compound							
Other Inorganic Materials	Fused Silica	60676-86-0	7.999658	90.500001	905000	39.335112	393351
Other Organic Materials	Carbon Black	1333-86-4	0.044197	0.500000	5000	0.217321	2173
Thermoplastics	Epoxy	85954-11-6	0.795546	8.999999	90000	3.911779	39118
Sub-total	—	—	8.839401	100	1000000	43.464211	434642
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	1.138788	100.000000	1000000	5.599534	55995
Sub-total	—	—	1.138788	100	1000000	5.599534	55995
Total	—	—	20.337194	—	—	100	1000000

MTBF/FIT estimates

MTBF / FIT		MTBF / FIT supporting data							
MTBF	FIT	Usage temp (°C)	Conf level (%)	Activation energy (eV)	Test temp (°C)	Test duration (hours)	Sample size	Fails	Additional comments
9.999999999×10^9	0.1	55	60	0.7	125	1000	183306	0	—

Qualification summary

Stress	Reference	Min lot qty	SS / lot	Condition	Duration	Result	Notes
HTOL	JESD22-A108	3	77	Life test, 125C	1000 hours	Pass	Or equivalent JEDEC condition
HTSL	JESD22-A103	3	25	High temp storage bake, 150C	1000 hours	Pass	Or equivalent JEDEC condition
AC/UHAST	JESD22-A102/JESD22-A118	3	25	Unbiased HAST 130C / 85% RH	96 hours	Pass	Or equivalent JEDEC condition
THB/HAST	JESD22-A101/JESD22-A110	3	25	HAST 130C/85%RH	96 hours	Pass	Or equivalent JEDEC condition
TC	JESD22-A104	3	25	Temperature cycle -65/150C	500 cycles	Pass	Or equivalent JEDEC condition
SD	J-STD-002	3	22	Per specification	>95% lead coverage	Pass	—
HBM	JS-001	1	3	ESD - HBM	Classification	See data sheet	—
CDM	JS-002	1	3	ESD - CDM	Classification	See data sheet	—
LU	JESD78	1	3	Latch-up	Per JESD78	Pass	As applicable per JESD78
MSL	J-STD-020	—	—	Per J-STD-020	Classification	See data sheet	—

Ongoing reliability monitoring

FAB process reliability data

Fab Process	Reliability Test	Rolling Year (2Q2024 - 1Q2025) Sample Size	Cumulative Sample Size	Disposition
Power BICMOS	Life test 125C, 1000 Hours or Equivalent JEDEC Condition	21354	415614	Pass

Assembly process reliability data

Package Family	Reliability Test	Rolling Year (2Q2024 - 1Q2025) Sample Size	Cumulative Sample Size	Disposition
QFN	Biased HAST 130C/85%RH, 96 Hours or Equivalent JEDEC Condition	11727	156411	Pass
QFN	High temp storage bake 150C, 1000 Hours or Equivalent JEDEC Condition	13195	147850	Pass
QFN	Temperature cycle -65/150C, 500 Hours or Equivalent JEDEC Condition	30332	375528	Pass
QFN	Unbiased HAST 130C/85% RH, 96 Hours or Equivalent JEDEC Condition	18705	277730	Pass

Additional resources

General quality guidelines

Certifications

Conflict minerals specialized disclosure report

Restricted chemical test report

For additional component information, please visit Material content search

For additional information, please contact TI customer support center

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