

CD74HC27M96

Quality, reliability & packaging data download

Status: ACTIVE

Report date: 04/14/2026



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

RoHS	Yes
REACH	Yes
Device marking	HC27M
Lead finish/Ball material	NiPdAu
MSL rating/Peak reflow	Level-1-260C-UNLIM
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	0.069737	97.535630	975356	0.047882	479
Not Categorized	Proprietary Materials	—	0.000008	0.011189	112	0.000005	0
Precious Metals	Gold	7440-57-5	0.000037	0.051749	517	0.000025	0
Precious Metals	Palladium	7440-05-3	0.001715	2.398635	23986	0.001178	12
Precious Metals	Silver	7440-22-4	0.000002	0.002797	28	0.000001	0
Sub-total	—	—	0.071499	100	1000000	0.049092	491
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	0.035659	79.999551	799996	0.024484	245
Thermoplastics	Epoxy	85954-11-6	0.008915	20.000449	200004	0.006121	61
Sub-total	—	—	0.044574	100	1000000	0.030605	306
Lead Frame							
Copper and Its Alloys	Copper	7440-50-8	47.1663	97.050000	970500	32.384937	323849
Copper and Its Alloys	Iron	7439-89-6	1.2636	2.600000	26000	0.867603	8676
Copper and Its Alloys	Phosphorus	7723-14-0	0.0729	0.150000	1500	0.050054	501
Zinc and Its Alloys	Zinc	7440-66-6	0.0972	0.200000	2000	0.066739	667
Sub-total	—	—	48.6000	100	1000000	33.369332	333693
Lead Frame Plating							
Nickel and Its Alloys	Nickel	7440-02-0	0.19024	95.120000	951200	0.130621	1306
Precious Metals	Gold	7440-57-5	0.00156	0.780000	7800	0.001071	11
Precious Metals	Palladium	7440-05-3	0.0082	4.100000	41000	0.005630	56
Sub-total	—	—	0.20000	100	1000000	0.137322	1373
Mold Compound							
Not Categorized	Phenolic Resin	9003-35-4	3.380326	3.500000	35000	2.320972	23210
Other Inorganic Materials	Fused Silica	60676-86-0	82.576544	85.500000	855000	56.698028	566980
Other Organic Materials	Carbon Black	1333-86-4	0.482904	0.500000	5000	0.331568	3316
Thermoplastics	Epoxy	85954-11-6	10.140979	10.500000	105000	6.962916	69629
Sub-total	—	—	96.580753	100	1000000	66.313482	663135
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	0.145884	100.000000	1000000	0.100166	1002
Sub-total	—	—	0.145884	100	1000000	0.100166	1002
Total	—	—	145.642710	—	—	100	1000000

Assembly site: Ext-Mfg

RoHS	Yes
REACH	Yes
Device marking	HC27M
Lead finish/Ball material	Sn
MSL rating/Peak reflow	Level-1-260C-UNLIM
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	0.038179	95.157270	951573	0.030804	308
Precious Metals	Gold	7440-57-5	0.000298	0.742735	7427	0.000240	2
Precious Metals	Palladium	7440-05-3	0.001645	4.099995	41000	0.001327	13
Sub-total	—	—	0.040122	100	1000000	0.032372	324
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	0.038474	79.999168	799992	0.031042	310
Thermoplastics	Epoxy	85954-11-6	0.009619	20.000832	200008	0.007761	78
Sub-total	—	—	0.048093	100	1000000	0.038803	388
Lead Frame							
Copper and Its Alloys	Copper	7440-50-8	29.484101	96.637496	966375	23.788566	237886
Copper and Its Alloys	Iron	7439-89-6	0.76275	2.500000	25000	0.615407	6154
Copper and Its Alloys	Phosphorus	7723-14-0	0.025171	0.082501	825	0.020309	203
Other Nonferrous Metals and Alloys	Lead	7439-92-1	0.001526	0.005002	50	0.001231	12
Precious Metals	Silver	7440-22-4	0.198315	0.650000	6500	0.160006	1600
Zinc and Its Alloys	Zinc	7440-66-6	0.038138	0.125002	1250	0.030771	308
Sub-total	—	—	30.510001	100	1000000	24.616290	246163
Lead Frame Plating							
Other Nonferrous Metals and Alloys	Tin	7440-31-5	0.2	100.000000	1000000	0.161365	1614
Sub-total	—	—	0.2	100	1000000	0.161365	1614
Mold Compound							

Other Inorganic Materials	Fused Silica	60676-86-0	79.033162	85.000000	850000	63.766081	637661
Other Organic Materials	Carbon Black	1333-86-4	0.511391	0.550000	5500	0.412604	4126
Thermoplastics	Epoxy	85954-11-6	13.435638	14.450000	144500	10.840234	108402
Sub-total	—	—	92.980191	100	1000000	75.018920	750189
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	0.163915	100.000000	1000000	0.132251	1323
Sub-total	—	—	0.163915	100	1000000	0.132251	1323
Total	—	—	123.942322	—	—	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
8.71×10^9	0.1	55	60	0.7	125	1000	101758	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 (2Q2025 - 1Q2026) Sample Size	Cumulative Sample Size	Disposition
Power BICMOS	High temperature reverse bias 125C, 1000 Hours or Equivalent JEDEC Condition	462	462	Pass
Power	Life test 125C, 1000 Hours or Equivalent JEDEC Condition	26863	442169	Pass

BICMOS				
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Assembly process reliability data

Package Family	Reliability Test	Rolling Year (2Q2025 - 1Q2026) Sample Size	Cumulative Sample Size	Disposition
SOIC	Biased HAST 130C/85%RH, 96 Hours or Equivalent JEDEC Condition	4522	83092	Pass
SOIC	High temp storage bake 150C, 1000 Hours or Equivalent JEDEC Condition	3530	70790	Pass
SOIC	Temperature cycle -65/150C, 500 Hours or Equivalent JEDEC Condition	12607	184408	Pass
SOIC	Unbiased HAST 130C/85% RH, 96 Hours or Equivalent JEDEC Condition	8855	135910	Pass

Additional resources

[General quality guidelines](#)

[Certifications](#)

[Conflict minerals specialized disclosure report](#)

[Restricted chemical test report](#)

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