

# CONSTITUTION MATERIALS LIST

The RoHS directive, REACH regulation, and other laws and regulations related to the management of environmentally hazardous substances come into effect. When developing products, the global environmental load must be considered. ROHM pursues green procurement and endeavors to increase the detection accuracy of chemicals contained in parts and procured materials while at the same time placing great importance on the internal chemical management system that was built to ensure that no prohibited substances are procured, used, or shipped in order to provide a steady supply of worry-free products.

Type	Package Code	ROHM Package	Mass (mg)	Part No.
IGBT	TO-252(DPAK)	TO-252(Halogen free)	320.7792	-

No	Part Name	Weight (mg)	Substance Name	CAS No	Weight (mg)	Portion vs. Products	Portion vs. Part Name	
1	Mold compound	143.2140	Silica (amorphous)	60676-86-0	124.8110	38.91%	87.15%	
			Epoxy resin	-	10.7411	3.35%	7.50%	
			Phenol-formaldehyde resin	-	7.1607	2.23%	5.00%	
			Carbon black	1333-86-4	0.5012	0.16%	0.35%	
			<i>Subtotal</i>		<i>143.2140</i>	<i>44.65%</i>	<i>100%</i>	
2	Lead frame (Base material)	159.4540	Copper (Cu)	7440-50-8	159.2547	49.65%	99.88%	
			Tin (Sn)	7440-31-5	0.1993	0.06%	0.12%	
			<i>Subtotal</i>		<i>159.4540</i>	<i>49.71%</i>	<i>100%</i>	
3	Lead frame (Surface treatment)	0.1974	Nickel (Ni)	7440-02-0	0.1974	0.06%	100.00%	
			<i>Subtotal</i>		<i>0.1974</i>	<i>0.06%</i>	<i>100%</i>	
4	External plating	5.6291	Tin (Sn)	7440-31-5	5.6291	1.75%	100.00%	
			<i>Subtotal</i>		<i>5.6291</i>	<i>1.75%</i>	<i>100%</i>	
5	Die	1.5056	Silicon (Si)	7440-21-3	1.4215	0.44%	94.41%	
			Aluminum (Al)	7429-90-5	0.0438	0.01%	2.91%	
			Titanium(Ti)	7440-32-6	0.0047	0.001%	0.31%	
			Nickel (Ni)	7440-02-0	0.0178	0.01%	1.18%	
			Gold (Au)	7440-57-5	0.0039	0.001%	0.26%	
			Silver (Ag)	7440-22-4	0.0139	0.004%	0.92%	
			<i>Subtotal</i>		<i>1.5056</i>	<i>0.47%</i>	<i>100%</i>	
6	Die attach	7.6050	Lead (Pb) *1	7439-92-1	7.2628	2.26%	95.50%	
			Tin (Sn)	7440-31-5	0.1521	0.05%	2.00%	
			Silver (Ag)	7440-22-4	0.1901	0.06%	2.50%	
			<i>Subtotal</i>		<i>7.6050</i>	<i>2.37%</i>	<i>100%</i>	
7	Bonding wire	3.1741	Aluminum (Al)	7429-90-5	3.1741	0.99%	100.00%	
			<i>Subtotal</i>		<i>3.1741</i>	<i>0.99%</i>	<i>100%</i>	
				<i>Total</i>	-	<i>320.7792</i>	<i>100%</i>	-

## Note

※1 It is exempted from the RoHS, because of the high melting point solder.

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