

Package-type

Epson Package name; **QFP8-160PIN-E1**

JEITA Package name; **P-QFP160-2828-0.65**

Terminal plating; **Lead(Pb) Free**

Weight; **5.97 [g]*Note1**

Part	Subpart	Subpart weight [mg]	Substance name	CAS No.	Content *Note2		Application
					[mg]	[ppm]	
IC Die	IC Die	164	Silicon	7440-21-3	164	999894	Base material
			Boron	7440-42-8	0.0003	2	Dopant
			Phosphorus	7723-14-0	0.0008	5	Dopant
			Aluminum	7429-90-5	0.003	20	Metalization
			Arsenic *Note3	7440-38-2	0.0008	5	Dopant
			Fluorine *Note3	7782-41-4	0.0003	2	Dopant
			Titanium *Note3	7440-32-6	0.003	20	Metalization
			Molybdenum *Note3	7439-98-7	0.003	20	Metalization
			Tungsten *Note3	7440-33-7	0.005	30	Metalization
			Cobalt *Note3	7440-48-4	0.0003	2	Metalization
	Stress buffer coat	3.3	Polyimide	-	3.3	1000000	Stress buffer coat *Note4
Package	Die Bonding material	5.7	Silver	7440-22-4	3.9	687831	Base material
			Epoxy resin	-	1.1	194004	Adhesive
			Phenol resin	-	0.44	77601	Adhesive
			Inorganic powder	-	0.23	40564	Additive
	Lead Frame Plating	54	Tin	7440-31-5	53	981516	Solder
			Bismuth	7440-69-9	1.0	18484	Solder
	Lead Frame	879	Copper	7440-50-8	830	945026	Conductor
			Silver	7440-22-4	4.4	5008	Inner lead plating
			Others *Note5	-	44	49966	Additive
	Bonding Wire	9.3	Gold	7440-57-5	9.3	1000000	Conductor
	Mold resin	4850	Epoxy resin	-	243	49996	Base material
			Antimony trioxide	1309-64-4	19	4000	Flame retardant
			Halogenated compound(Brominations epoxy)	-	44	8989	Flame retardant
			Silica	60676-86-0/-	3914	807026	Filler
			Carbon black	1333-86-4	73	14988	Coloring agent
			Hardening chemical(ex:Phenol resin)	-	291	59995	Base material
Organic phosphorous compound			-	24	5010	Hardening accelerator	
others	-	243	49996	Additive			

Regarding the information of chemical substances

*Note1 The weight might be somewhat different depending on an individual built-in IC-chip specification like the size etc.

*Note2 Content data are estimated values based on supplier information and intended levels of content in product.

Actual measurements may vary from these values somewhat.

*Note3 Use or not-use of these substances depends on individual built-in IC-chip specification.

*Note4 The stress buffer coat may not be used depending on the individual model.

*Note5 The nickel, zinc, tin, silicon, iron, and the zinc oxide are included for the Cu type. And the carbon, silicon, and manganese are included for 42alloy type.