Drilling Feed & Speed Chart for

Isola IS620 High Tg PCB Material

Recommended Tycom Drill Series: Series 100, 150, 450, 460, 480, 560, 580

(Note: Chart is based on 120K RPM Spindle Capability. Please use maximum spindle speed if listed RPM is unattainable)

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Max Hits	Chipload	SFM
	(inch)	*(Inches/min)*	*(k-rpm)*	*(inches/min)*	*(inches)*		*(mils/rev)*	
0.10mm	0.0040	36	120	200	-0.011	300	0.30	126
0.13mm	0.0050	48	120	300	-0.011	500	0.40	157
0.15mm	0.0059	60	120	300	-0.011	500	0.50	185
#96	0.0063	66	120	400	-0.011	500	0.55	198
#95	0.0067	70	120	400	-0.012	500	0.58	210
#94	0.0071	71	120	500	-0.012	500	0.59	223
#93	0.0075	72	120	500	-0.012	500	0.60	236
#92	0.0079	77	118	500	-0.012	700	0.65	244
#91	0.0083	79	116	600	-0.012	700	0.68	252
#90	0.0087	80	114	600	-0.012	700	0.70	260
#89	0.0091	81	112	700	-0.012	700	0.72	267
#88	0.0095	84	110	700	-0.012	700	0.76	273
0.25mm	0.0098	87	109	800	-0.012	1000	0.80	280
#87	0.0100	89	108	800	-0.012	1000	0.82	283
#86	0.0105	91	106	800	-0.012	1000	0.86	291
#85	0.0110	94	104	900	-0.013	1000	0.90	299
#84	0.0115	97	102	900	-0.013	1000	0.95	307
0.30mm	0.0118	101	101	1000	-0.013	1000	1.00	312
#83	0.0120	102	100	1000	-0.013	1000	1.02	314
#82	0.0125	105	97	1000	-0.013	1000	1.08	317
#81	0.0130	105	94	1000	-0.013	1000	1.12	320
#80	0.0135	107	92	1000	-0.013	1000	1.16	325
0.35mm	0.0138	109	91	1000	-0.013	1000	1.20	329
#79	0.0145	114	88	1000	-0.013	1000	1.30	334
1/64	0.0156	119	84	1000	-0.014	1000	1.42	343
0.40mm	0.0158	120	83	1000	-0.014	1000	1.45	343
#78	0.0160	123	82	1000	-0.014	1000	1.50	343
0.45mm	0.0177	128	79	1000	-0.014	1000	1.62	366
#77	0.0180	129	78	1000	-0.014	1000	1.65	367
0.50mm	0.0197	133	76	1000	-0.015	1000	1.75	390
#76	0.0200	137	75	1000	-0.015	1200	1.83	390
#75	0.0210	135	71	1000	-0.015	1200	1.90	390
0.55mm	0.0217	135	69	1000	-0.015	1200	1.96	390
#74	0.0225	134	66	1000	-0.015	1200	2.03	390
0.60mm	0.0236	134	63	1000	-0.016	1200	2.13	390
#73	0.0240	133	62	1000	-0.016	1200	2.15	390

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Hits	Chipload	SFM
	(inch)	*(Inches/min)*	*(k-rpm)*	*(inches/min)*	*(inches)*		*(mils/rev)*	
#72	0.0250	133	60	1000	-0.016	1200	2.22	390
0.65mm	0.0256	131	58	1000	-0.016	1200	2.26	390
#71	0.0260	131	57	1000	-0.016	1200	2.30	390
0.70mm	0.0276	129	54	1000	-0.016	1200	2.39	390
#70	0.0280	127	53	1000	-0.017	1200	2.40	390
#69	0.0292	128	51	1000	-0.017	1200	2.51	390
0.75mm	0.0295	128	51	1000	-0.017	1200	2.51	390
#68	0.0310	122	48	1000	-0.017	1200	2.54	390
1/32	0.0312	122	48	1000	-0.017	1200	2.54	390
0.80mm	0.0315	122	47	1000	-0.017	1200	2.60	390
#67	0.0320	122	47	1000	-0.017	1200	2.60	390
#66	0.0330	121	45	1000	-0.018	1200	2.69	390
0.85mm	0.0335	119	44	1000	-0.018	1200	2.70	390
#65	0.0350	118	43	1000	-0.018	1200	2.74	390
0.90mm	0.0354	117	42	1000	-0.018	1000	2.79	390
#64	0.0360	115	41	1000	-0.018	1000	2.80	390
#63	0.0370	114	40	1000	-0.019	1000	2.85	390
0.95mm	0.0374	114	40	1000	-0.019	1000	2.85	390
#62	0.0380	114	39	1000	-0.019	1000	2.92	390
#61	0.0390	114	38	1000	-0.019	1000	3.00	390
1.00mm	0.0394	113	38	1000	-0.019	1000	2.97	390
#60	0.0400	113	37	1000	-0.019	1000	3.05	390
#59	0.0410	111	36	1000	-0.020	1000	2.50	390
1.05mm	0.0413	112	36	1000	-0.020	1000	2.50	390
#58	0.0420	110	35	1000	-0.020	1000	2.50	390
#57	0.0430	110	35	1000	-0.020	1000	2.50	390
1.10mm	0.0433	109	34	1000	-0.020	1000	2.50	390
1.15mm	0.0453	106	33	1000	-0.021	1000	2.50	390
#56	0.0465	102	32	1000	-0.021	1000	2.50	390
3/64	0.0469	102	32	1000	-0.021	1000	2.50	390
1.20mm	0.0472	102	32	1000	-0.021	1000	2.50	390
1.25mm	0.0492	96	30	1000	-0.021	1000	2.50	390
1.30mm	0.0512	93	29	1000	-0.022	1000	2.50	390
#55	0.0520	93	29	1000	-0.022	1000	2.50	390
1.35mm	0.0531	90	28	1000	-0.022	1000	2.50	390
#54	0.0550	86	27	1000	-0.023	1000	2.50	390
1.40mm	0.0551	86	27	1000	-0.023	1000	2.50	390
1.45mm	0.0571	83	26	1000	-0.023	1000	2.50	390
1.50mm	0.0591	80	25	1000	-0.024	1000	2.50	390
#53	0.0595	80	25	1000	-0.024	1000	2.50	390
1.55mm	0.0610	77	24	1000	-0.024	1000	2.50	390
1/16	0.0625	77	24	1000	-0.025	1000	2.50	390
1.60mm	0.0630	77	24	1000	-0.025	1000	2.50	390
#52	0.0635	74	23	1000	-0.025	1000	2.50	390
1.65mm	0.0650	74	23	1000	-0.025	1000	2.50	390
1.70mm	0.0669	70	22	1000	-0.026	1000	2.50	390
#51	0.0670	70	22	1000	-0.026	1000	2.50	390
1.75mm	0.0689	70	22	1000	-0.026	1000	2.50	390

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Hits	Chipload	SFM
	(inch)	*(Inches/min)*	*(k-rpm)*	*(inches/min)*	*(inches)*		*(mils/rev)*	
#50	0.0700	67	21	1000	-0.026	1000	2.50	390
1.80mm	0.0709	67	21	1000	-0.027	1000	2.50	390
1.85mm	0.0728	64	20	1000	-0.027	1000	2.50	390
#49	0.0730	64	20	1000	-0.027	1000	2.50	390
1.90mm	0.0748	63	20	1000	-0.027	1000	2.50	390
#48	0.0760	62	20	1000	-0.028	1000	2.50	390
1.95mm	0.0768	61	20	1000	-0.028	1000	2.50	402
5/64	0.0781	59	20	1000	-0.028	1000	2.50	409
#47	0.0785	58	20	1000	-0.028	1000	2.50	411
2.00mm	0.0787	58	20	1000	-0.028	1000	2.50	412
2.05mm	0.0807	56	20	1000	-0.029	1000	2.50	422
#46	0.0810	55	20	1000	-0.029	1000	2.50	424
#45	0.0820	54	20	1000	-0.029	1000	2.50	429
2.10mm	0.0827	52	20	1000	-0.029	1000	2.50	433
2.15mm	0.0846	50	20	1000	-0.030	1000	2.50	443
#44	0.0860	50	20	1000	-0.030	1000	2.50	450
2.20mm	0.0866	50	20	1000	-0.030	1000	2.50	453
2.25mm	0.0886	50	20	1000	-0.031	1000	2.50	464
#43	0.0890	50	20	1000	-0.031	1000	2.50	466
2.30mm	0.0906	50	20	1000	-0.031	1000	2.50	474
2.35mm	0.0925	50	20	1000	-0.032	1000	2.50	484
#42	0.0935	50	20	1000	-0.032	1000	2.50	489
3/32	0.0938	50	20	1000	-0.032	1000	2.50	491
2.40mm	0.0945	50	20	1000	-0.032	1000	2.50	495
#41	0.0960	50	20	1000	-0.032	1000	2.50	502
2.45mm	0.0965	50	20	1000	-0.033	1000	2.50	505
#40	0.0980	50	20	1000	-0.033	1000	2.50	513
2.50mm	0.0984	50	20	1000	-0.033	1000	2.50	515
#39	0.0995	50	20	1000	-0.033	1000	2.50	521
2.55mm	0.1004	50	20	1000	-0.033	1000	2.50	525
#38	0.1015	50	20	1000	-0.034	1000	2.50	531
2.60mm	0.1024	50	20	1000	-0.034	1000	2.50	536
#37	0.1040	50	20	1000	-0.034	800	2.50	544
2.65mm	0.1043	50	20	1000	-0.034	800	2.50	546
2.70mm	0.1063	50	20	1000	-0.035	800	2.50	556
#36	0.1065	50	20	1000	-0.035	800	2.50	557
2.75mm	0.1083	50	20	1000	-0.035	800	2.50	567
7/64	0.1094	50	20	1000	-0.036	800	2.50	573
#35	0.1100	50	20	1000	-0.036	800	2.50	576
2.80mm	0.1102	50	20	1000	-0.036	800	2.50	577
#34	0.1110	50	20	1000	-0.036	800	2.50	581
2.85mm	0.1122	50	20	1000	-0.036	800	2.50	587
#33	0.1130	50	20	1000	-0.036	800	2.50	591
2.90mm	0.1142	50	20	1000	-0.037	800	2.50	598
#32	0.1160	50	20	1000	-0.037	800	2.50	607
2.95mm	0.1161	50	20	1000	-0.037	800	2.50	608
3.00mm	0.1181	50	20	1000	-0.038	800	2.50	618
#31	0.1200	50	20	1000	-0.038	800	2.50	628

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Hits	Chipload	SFM
	(inch)	*(Inches/min)*	*(k-rpm)*	*(inches/min)*	*(inches)*		*(mils/rev)*	
3.05mm	0.1201	50	20	1000	-0.038	800	2.50	629
3.10mm	0.1220	50	20	1000	-0.038	800	2.50	638
3.15mm	0.1240	50	20	1000	-0.039	800	2.50	649
1/8	0.1250	50	20	1000	-0.039	800	2.50	654
3.20mm	0.1260	40	20	1000	-0.018	800	2.00	659
3.25mm	0.1280	40	20	1000	-0.018	800	2.00	670
#30	0.1285	40	20	1000	-0.019	800	2.00	672
3.30mm	0.1299	40	20	1000	-0.019	800	2.00	680
3.35mm	0.1319	40	20	1000	-0.019	800	2.00	690
3.40mm	0.1339	40	20	1000	-0.019	800	2.00	701
3.45mm	0.1358	40	20	1000	-0.019	800	2.00	711
#29	0.1360	40	20	1000	-0.019	800	2.00	712
3.50mm	0.1378	35	20	1000	-0.019	800	1.75	721
3.55mm	0.1398	35	20	1000	-0.019	800	1.75	732
#28	0.1405	35	20	1000	-0.019	800	1.75	735
9/64	0.1406	35	20	1000	-0.019	600	1.75	736
3.60mm	0.1417	35	20	1000	-0.019	600	1.75	742
3.65mm	0.1437	35	20	1000	-0.020	600	1.75	752
#27	0.1440	35	20	1000	-0.020	600	1.75	754
3.70mm	0.1457	35	20	1000	-0.020	600	1.75	762
#26	0.1470	35	20	1000	-0.020	600	1.75	769
3.75mm	0.1476	35	20	1000	-0.020	600	1.75	772
#25	0.1495	35	20	1000	-0.020	600	1.75	782
3.80mm	0.1496	35	20	1000	-0.020	600	1.75	783
3.85mm	0.1516	35	20	1000	-0.020	600	1.75	793
#24	0.1520	35	20	1000	-0.020	600	1.75	795
3.90mm	0.1535	35	20	1000	-0.020	600	1.75	803
#23	0.1540	35	20	1000	-0.020	600	1.75	806
3.95	0.1555	30	20	1000	-0.020	600	1.50	814
5/32	0.1562	30	20	1000	-0.020	600	1.50	817
#22	0.1570	30	20	1000	-0.020	600	1.50	822
4.00mm	0.1575	30	20	1000	-0.020	600	1.50	824
#21	0.1590	30	20	1000	-0.021	400	1.50	832
4.05mm	0.1594	30	20	1000	-0.021	400	1.50	834
#20	0.1610	30	20	1000	-0.021	400	1.50	843
4.10mm	0.1614	30	20	1000	-0.021	400	1.50	845
4.15mm	0.1634	30	20	1000	-0.021	400	1.50	855
4.20mm	0.1654	30	20	1000	-0.021	400	1.50	866
#19	0.1660	30	20	1000	-0.021	400	1.50	869
4.25mm	0.1673	30	20	1000	-0.021	400	1.50	876
4.30mm	0.1693	30	20	1000	-0.021	400	1.50	886
#18	0.1695	30	20	1000	-0.021	400	1.50	887
4.35mm	0.1713	30	20	1000	-0.021	400	1.50	896
11/64	0.1719	30	20	1000	-0.021	400	1.50	900
#17	0.1730	30	20	1000	-0.021	400	1.50	905
4.40mm	0.1732	30	20	1000	-0.021	400	1.50	906
4.45mm	0.1752	30	20	1000	-0.022	400	1.50	917
#16	0.1770	30	20	1000	-0.022	400	1.50	926

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Hits	Chipload	SFM
	(inch)	*(Inches/min)*	*(k-rpm)*	*(inches/min)*	*(inches)*		*(mils/rev)*	
4.50mm	0.1772	30	20	1000	-0.022	400	1.50	927
4.55mm	0.1792	30	20	1000	-0.022	400	1.50	938
#15	0.1800	30	20	1000	-0.022	400	1.50	942
4.60mm	0.1811	30	20	1000	-0.022	400	1.50	948
#14	0.1820	30	20	1000	-0.022	400	1.50	952
4.65mm	0.1831	30	20	1000	-0.022	400	1.50	958
#13	0.1850	30	20	1000	-0.022	400	1.50	968
4.70mm	0.1850	30	20	1000	-0.022	400	1.50	968
4.75mm	0.1870	30	20	1000	-0.022	400	1.50	979
3/16	0.1875	30	20	1000	-0.022	400	1.50	981
4.80mm	0.1890	30	20	1000	-0.023	300	1.50	989
#12	0.1890	30	20	1000	-0.023	300	1.50	989
4.85mm	0.1909	30	20	1000	-0.023	300	1.50	999
#11	0.1910	30	20	1000	-0.023	300	1.50	1000
4.90mm	0.1929	30	20	1000	-0.023	300	1.50	1010
#10	0.1935	30	20	1000	-0.023	300	1.50	1013
4.95mm	0.1949	30	20	1000	-0.023	300	1.50	1020
#9	0.1960	30	20	1000	-0.023	300	1.50	1026
5.00mm	0.1968	30	20	1000	-0.023	300	1.50	1030
5.05mm	0.1988	30	20	1000	-0.023	300	1.50	1040
#8	0.1990	30	20	1000	-0.023	300	1.50	1041
5.10mm	0.2008	25	20	1000	-0.023	300	1.25	1051
#7	0.2010	25	20	1000	-0.023	200	1.25	1052
5.15mm	0.2028	25	20	1000	-0.023	200	1.25	1061
13/64	0.2031	25	20	1000	-0.023	200	1.25	1063
#6	0.2040	25	20	1000	-0.024	200	1.25	1068
5.20mm	0.2047	25	20	1000	-0.024	200	1.25	1071
#5	0.2055	25	20	1000	-0.024	200	1.25	1075
5.25mm	0.2067	25	20	1000	-0.024	200	1.25	1082
5.30mm	0.2087	25	20	1000	-0.024	200	1.25	1092
#4	0.2090	25	20	1000	-0.024	200	1.25	1094
5.35mm	0.2106	25	20	1000	-0.024	200	1.25	1102
5.40mm	0.2126	25	20	1000	-0.024	200	1.25	1113
#3	0.2130	25	20	1000	-0.024	200	1.25	1115
5.45mm	0.2146	25	20	1000	-0.024	200	1.25	1123
5.50mm	0.2165	25	20	1000	-0.024	200	1.25	1133
5.55mm	0.2185	25	20	1000	-0.024	200	1.25	1143
7/32	0.2188	25	20	1000	-0.024	200	1.25	1145
5.60mm	0.2205	25	20	1000	-0.025	200	1.25	1154
#2	0.2210	25	20	1000	-0.025	200	1.25	1157
5.65mm	0.2224	25	20	1000	-0.025	200	1.25	1164
5.70mm	0.2244	25	20	1000	-0.025	200	1.25	1174
5.75mm	0.2264	25	20	1000	-0.025	200	1.25	1185
#1	0.2280	25	20	1000	-0.025	200	1.25	1193
5.80mm	0.2283	25	20	1000	-0.025	200	1.25	1195
5.85mm	0.2302	25	20	1000	-0.025	200	1.25	1205
5.90mm	0.2323	25	20	1000	-0.025	200	1.25	1216
A	0.2340	25	20	1000	-0.025	200	1.25	1225

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Hits	Chipload	SFM
	(inch)	*(Inches/min)*	*(k-rpm)*	*(inches/min)*	*(inches)*		*(mils/rev)*	
5.95mm	0.2343	25	20	1000	-0.026	200	1.25	1226
15/64	0.2344	25	20	1000	-0.026	200	1.25	1227
6.00mm	0.2362	25	20	1000	-0.026	200	1.25	1236
B	0.2380	25	20	1000	-0.026	200	1.25	1246
6.05mm	0.2382	25	20	1000	-0.026	200	1.25	1247
6.10mm	0.2402	25	20	1000	-0.026	200	1.25	1257
C	0.2420	25	20	1000	-0.026	200	1.25	1266
6.15mm	0.2421	25	20	1000	-0.026	200	1.25	1267
6.20mm	0.2441	25	20	1000	-0.026	200	1.25	1277
D	0.2460	25	20	1000	-0.026	200	1.25	1287
6.25mm	0.2461	25	20	1000	-0.026	200	1.25	1288
6.30mm	0.2480	25	20	1000	-0.026	200	1.25	1298
6.35mm	0.2500	25	20	1000	-0.027	200	1.25	1308
6.40mm	0.2520	25	20	1000	-0.027	200	1.25	1319
6.50mm	0.2559	25	20	1000	-0.027	200	1.25	1339
F	0.2570	25	20	1000	-0.027	200	1.25	1345
6.60mm	0.2598	25	20	1000	-0.027	200	1.25	1360

In some cases, there may be an opportunity to increase the chipload based on the application's robustness. Variables such as machine technology and condition, stack support materials, and Tycom design selection may allow the increased throughput with higher chiploads. Multiply the recommended chipload by 1.15 to reach the higher chipload.

If the application is not as robust due to heavy glass, high copper content, tight annular ring requirements, or similar, multiply the recommended chipload by 0.85.