



# IHLP Selection Example

<b>IHLP-1616 APPLICATIONS</b>																
$L_0$ $\mu\text{H}$	DCR $\Omega$ TYP.	$I_{\text{HEAT}}$ (A)	$I_{\text{SAT}}$ (A)	$R_{\text{TH}}$ (1)	$P_{\text{HEAT}}$ (2) (W)	$ET_{100}$ (3)	$K_0$ (4)	$K_1$ (5)	DCR $\Omega$ TYP.	$I_{\text{HEAT}}$ (A)	$I_{\text{SAT}}$ (A)	$R_{\text{TH}}$ (1)	$P_{\text{HEAT}}$ (2) (W)	$ET_{100}$ (3)	$K_0$ (4)	$K_1$ (5)
<b>IHLP-1616AB-01</b>									<b>IHLP-1616AB-11</b>							
0.047	0.00325	13.00	32.00	63.11	0.63	0.02	0.14	0.00028								
0.10	0.00550	11.50	25.00	47.65	0.84	0.08	1.13	0.00028	0.0050	12.00	12.00	48.14	0.83	0.07	0.91	0.00032
0.22	0.01100	8.50	20.00	47.98	0.83	0.10	0.55	0.00077	0.0095	9.50	9.50	40.43	0.99	0.10	0.67	0.00026
0.47	0.02000	5.00	13.00	69.32	0.58	0.18	0.87	0.00067	0.0190	6.00	6.00	50.68	0.79	0.16	0.70	0.00067
1.00	0.05000	4.00	8.50	48.14	0.83	0.27	0.86	0.00053	0.0430	4.20	4.50	45.70	0.88	0.23	0.66	0.00053
									0.0556	3.75	3.75	49.30	0.81	0.22	0.47	0.00171
									0.0680	3.25	3.25	48.26	0.83	0.25	0.45	0.00171
									0.0794	2.75	3.00	50.93	0.79	0.32	0.53	0.00171
<b>IHLP-1616BZ-01</b>									<b>IHLP-1616BZ-11</b>							
0.10	0.0045	11.00	35.00	63.66	0.63	0.10	1.64	0.00032	0.0041	12.00	12.00	58.71	0.68	0.08	1.17	0.00032
0.22	0.0073	13.00	24.00	34.18	1.17	0.12	0.78	0.00097	0.0065	9.00	9.00	56.31	0.71	0.10	0.56	0.00097
0.47	0.0160	5.60	11.50	69.08	0.58	0.19	0.72	0.00083	0.0145	7.00	7.00	48.79	0.82	0.13	0.46	0.00083
1.00	0.0330	3.75	8.50	74.69	0.54	0.29	0.95	0.00077	0.0240	4.50	5.00	71.32	0.56	0.31	1.08	0.00077
2.20	0.0800	2.85	6.00	53.34	0.75	0.53	1.30	0.00053	0.0610	3.25	3.25	53.80	0.74	0.41	1.10	0.00060
									0.0950	2.00	1.75	61.90	0.65	0.53	0.75	0.00196

**Notes**

- (1) Thermal resistance of the part [°C/W]
- (2) Total power loss that will cause an approximate  $\Delta T$  of 40 °C
- (3)  $V\text{-}\mu\text{s}$  product that corresponds to a peak flux density of 100 Gauss
- (4) Core loss constant
- (5) AC loss constant



## IHLP Selection Example

<b>IHLP-2020 APPLICATIONS</b>																
$L_0$ $\mu\text{H}$	DCR $\Omega$ TYP.	$I_{\text{HEAT}}$ (A)	$I_{\text{SAT}}$ (A)	$R_{\text{TH}}$ (1)	$P_{\text{HEAT}}$ (2) (W)	$ET_{100}$ (3)	$K_0$ (4)	$K_1$ (5)	DCR $\Omega$ TYP.	$I_{\text{HEAT}}$ (A)	$I_{\text{SAT}}$ (A)	$R_{\text{TH}}$ (1)	$P_{\text{HEAT}}$ (2) (W)	$ET_{100}$ (3)	$K_0$ (4)	$K_1$ (5)
<b>IHLP-2020BZ-01</b>									<b>IHLP-2020BZ-11</b>							
0.10	0.0036	17.0	45.0	33.32	1.20	0.16	3.47	0.00044	0.0027	21.0	25.0	29.11	1.37	0.13	2.47	0.00057
0.22	0.0049	15.0	22.0	31.44	1.27	0.13	0.98	0.00133	0.0041	17.0	13.0	29.25	1.37	0.11	0.83	0.00172
0.33	0.0076	12.0	25.0	31.67	1.26	0.22	1.97	0.00120	0.0055	13.0	7.5	37.29	1.07	0.14	0.81	0.00154
0.47	0.0089	11.5	21.0	29.45	1.36	0.28	2.06	0.00120	0.0071	12.5	8.0	31.24	1.28	0.20	1.10	0.00154
0.68	0.0112	10.0	15.0	30.95	1.29	0.29	1.51	0.00120								
1.0	0.0189	7.0	16.0	37.43	1.07	0.49	2.60	0.00097	0.0168	7.5	7.0	36.68	1.09	0.35	1.59	0.00113
2.2	0.0456	4.2	12.5	43.09	0.93	0.70	2.41	0.00077	0.0349	5.0	5.5	39.73	1.01	0.62	2.21	0.00091
3.3	0.0792	3.3	8.5	40.19	1.00	0.95	2.97	0.00060	0.0535	4.1	4.7	38.54	1.04	0.41	2.00	0.00083
4.7	0.1080	2.8	5.0	40.94	0.98	0.96	2.01	0.00196	0.0753	3.2	3.0	44.95	0.89	0.59	0.95	0.00304
5.6	0.1130	2.5	4.5	49.08	0.82	1.17	2.64	0.00196	0.0852	3.0	2.2	45.20	0.88	0.74	1.26	0.00273
6.8	0.1390	2.4	4.3	43.29	0.92	0.90	1.32	0.00196	0.1140	2.8	2.1	38.78	1.03	0.84	1.48	0.00242
10	0.1840	2.3	4.0	35.61	1.12	1.43	2.21	0.00196	0.1693	2.2	2.0	42.30	0.95	1.14	1.60	0.00242
<b>IHLP-2020CZ-01</b>									<b>IHLP-2020CZ-11</b>							
0.10	0.00300	23.00	27.00	21.84	1.83	0.07	0.51	0.00172	0.0026	21.00	25.00	30.23	1.32	0.12	2.28	0.00057
0.22	0.00430	15.50	21.00	33.55	1.19	0.11	0.60	0.00172	0.0035	21.00	15.40	22.46	1.78	0.10	0.59	0.00172
0.33	0.00530	13.70	19.00	34.84	1.15	0.17	1.02	0.00154	0.0045	16.50	9.00	28.29	1.41	0.14	0.75	0.00172
0.47	0.00670	12.20	16.00	34.76	1.15	0.22	1.23	0.00154	0.0054	14.00	9.00	32.75	1.22	0.23	1.51	0.00172
0.68	0.00853	10.20	13.50	39.06	1.02	0.30	1.44	0.00154								
0.82	0.01130	9.30	13.00	35.47	1.13	0.35	1.61	0.00139								
1.0	0.01310	9.20	12.00	31.26	1.28	0.43	1.95	0.00139	0.0100	10.00	6.50	34.66	1.15	0.40	2.02	0.00139
1.5	0.01970	7.20	11.00	33.94	1.18	0.55	2.36	0.00113	0.0171	7.50	7.00	36.04	1.11	0.53	2.47	0.00124
2.2	0.02780	5.80	10.00	37.06	1.08	0.73	2.65	0.00113	0.0225	6.75	5.50	33.81	1.18	0.75	3.34	0.00113
3.3	0.05210	5.00	8.50	26.61	1.50	0.87	2.41	0.00091	0.0364	5.50	7.00	31.48	1.27	0.99	3.68	0.00113
4.7	0.07380	3.50	8.20	38.34	1.04	1.22	3.52	0.00083	0.0540	4.50	5.20	31.70	1.26	1.20	3.89	0.00091
5.6	0.10300	3.00	4.10	37.39	1.07	0.61	0.66	0.00304	0.0630	4.25	3.50	30.46	1.31	1.43	4.56	0.00091
10	0.15200	2.50	4.00	36.49	1.10	1.16	1.43	0.00273	0.1221	2.75	2.25	37.54	1.07	0.97	1.14	0.00304
22	0.25200	1.90	2.50	38.10	1.05	1.37	1.29	0.00242	0.2600	1.90	1.70	36.93	1.08	1.41	1.21	0.00242

**Notes**

- (1) Thermal resistance of the part [°C/W]
- (2) Total power loss that will cause an approximate  $\Delta T$  of 40 °C
- (3)  $V\text{-}\mu\text{s}$  product that corresponds to a peak flux density of 100 Gauss
- (4) Core loss constant
- (5) AC loss constant

APPLICATION NOTE



### IHLP Selection Example

IHLP-2525 APPLICATIONS																
L <sub>0</sub> μH	DCR Ω TYP.	I <sub>HEAT</sub> (A)	I <sub>SAT</sub> (A)	R <sub>TH</sub> (1)	P <sub>HEAT</sub> (2) (W)	ET <sub>100</sub> (3)	K <sub>0</sub> (4)	K <sub>1</sub> (5)	DCR Ω TYP.	I <sub>HEAT</sub> (A)	I <sub>SAT</sub> (A)	R <sub>TH</sub> (1)	P <sub>HEAT</sub> (2) (W)	ET <sub>100</sub> (3)	K <sub>0</sub> (4)	K <sub>1</sub> (5)
IHLP-2525AH-01									IHLP-2525AH-11							
0.100	0.0030	18.00	40.00	35.66	1.12	0.10	1.78	0.00050								
0.15	0.0047	15.00	38.00	32.78	1.22	0.23	4.85	0.00040								
0.22	0.0053	14.00	26.00	33.37	1.20	0.22	2.77	0.00120								
0.33	0.0066	12.00	18.00	36.47	1.10	0.26	2.37	0.00120								
0.47	0.0084	11.00	18.00	34.10	1.17	0.49	5.22	0.00120								
0.68	0.0127	9.00	17.00	33.69	1.19	0.52	4.08	0.00107								
0.82	0.0138	8.00	17.00	39.25	1.02	0.54	3.83	0.00306								
1.00	0.0175	7.00	14.00	40.42	0.99	0.74	5.51	0.00391								
1.50	0.0326	4.00	11.50	66.45	0.60	0.66	3.20	0.00077								
2.20	0.0403	3.75	13.00	61.16	0.65	0.76	2.63	0.00306								
2.50	0.0499	3.50	10.40	56.70	0.71	1.26	5.34	0.00281								
3.30	0.0562	3.25	10.00	58.39	0.69	1.32	5.07	0.00281								
4.70	0.0766	3.00	8.00	50.28	0.80	1.27	3.70	0.00281								
IHLP-2525BD-01									IHLP-2525BD-11							
0.10	0.0015	30.0	50.0	25.68	1.56	0.13	3.13	0.00071								
0.22	0.0029	21.0	34.0	27.10	1.48	0.24	3.46	0.00170								
0.33	0.0037	18.0	22.0	28.91	1.38	0.28	3.02	0.00170								
0.47	0.0060	13.5	21.0	31.70	1.26	0.33	2.78	0.00150								
0.68	0.0087	11.0	18.0	32.93	1.21	0.41	2.80	0.00133								
0.82	0.0106	10.0	17.0	32.70	1.22	0.49	3.29	0.00120								
1.00	0.0131	9.0	16.0	32.67	1.22	0.69	5.23	0.00120								
1.50	0.0185	7.5	15.0	33.31	1.20	0.92	6.01	0.00107								
2.20	0.0280	6.5	14.0	29.30	1.37	1.06	6.15	0.00107								
3.30	0.0365	5.0	13.0	37.99	1.05	1.39	6.03	0.00354								
4.70	0.0452	4.5	10.0	37.87	1.06	1.27	3.87	0.00354								
6.80	0.0725	3.5	9.0	39.03	1.02	2.01	5.82	0.00306								
8.20	0.0842	3.0	8.0	45.74	0.87	1.98	5.11	0.00306								
10.00	0.1156	2.5	7.0	47.98	0.83	2.55	7.08	0.00281								

**Notes**

- (1) Thermal resistance of the part [°C/W]
- (1) Total power loss that will cause an approximate ΔT of 40 °C
- (2) V-μs product that corresponds to a peak flux density of 100 Gauss
- (3) Core loss constant
- (4) AC loss constant

APPLICATION NOTE



## IHLP Selection Example

IHLP-2525 APPLICATIONS																
L <sub>0</sub> μH	DCR Ω TYP.	I <sub>HEAT</sub> (A)	I <sub>SAT</sub> (A)	R <sub>TH</sub> (1)	P <sub>HEAT</sub> (2) (W)	ET <sub>100</sub> (3)	K <sub>0</sub> (4)	K <sub>1</sub> (5)	DCR Ω TYP.	I <sub>HEAT</sub> (A)	I <sub>SAT</sub> (A)	R <sub>TH</sub> (1)	P <sub>HEAT</sub> (2) (W)	ET <sub>100</sub> (3)	K <sub>0</sub> (4)	K <sub>1</sub> (5)
IHLP-2525CZ-01									IHLP-2525CZ-11							
0.10	0.0015	32.5	60.0	21.88	1.83	0.11	2.42	0.00071								
0.15	0.0019	26.0	52.0	26.99	1.48	0.26	7.53	0.00063								
0.20	0.0024	24.0	41.0	25.07	1.60	0.26	4.00	0.00190								
0.22	0.0025	23.0	40.0	26.21	1.53	0.31	4.99	0.00190								
0.33	0.0035	20.0	30.0	24.76	1.62	0.35	4.15	0.00190								
0.47	0.0040	17.5	26.0	28.30	1.41	0.41	4.11	0.00190								
0.68	0.0050	15.5	25.0	28.85	1.39	0.61	5.88	0.00190								
0.82	0.0067	13.0	24.0	30.61	1.31	0.62	5.16	0.00150								
1.00	0.0090	11.0	22.0	31.83	1.26	0.68	4.99	0.00150	0.0076	12.5	9.5	29.19	1.44	0.68	5.44	0.00150
1.50	0.0140	9.0	18.0	30.57	1.31	1.04	7.65	0.00120								
2.20	0.0180	8.0	14.0	30.09	1.33	1.00	5.62	0.00120	0.0157	9.0	7.0	27.26	1.47	0.98	5.75	0.00120
3.30	0.0280	6.0	13.5	34.39	1.16	1.53	8.23	0.00107	0.0248	7.0	6.5	28.52	1.40	1.38	7.46	0.00107
4.70	0.0370	5.5	10.0	30.97	1.29	1.30	3.80	0.00391	0.0318	6.0	4.0	30.28	1.32	1.13	3.30	0.00391
6.80	0.0540	4.5	8.0	31.70	1.26	1.75	5.01	0.00354	0.0446	5.5	4.0	25.69	1.56	1.72	5.58	0.00354
8.2	0.0640	4.0	7.5	33.85	1.18	2.09	5.79	0.00354	0.0523	5.0	4.0	26.36	1.52	1.85	5.38	0.00354
10	0.1020	3.0	7.0	37.76	1.06	2.74	7.23	0.00281	0.0678	4.0	3.5	31.95	1.25	1.95	5.04	0.00306
22									0.1289	2.9	2.5	31.97	1.25	3.27	6.79	0.00281
IHLP-2525EZ-01									IHLP-2525EZ-11							
0.56	0.0034	20.0	12.0	25.49	1.57	0.42	3.81	0.00238								
0.68	0.0042	18.0	11.5	25.47	1.57	0.56	5.47	0.00214								
0.82	0.0046	16.5	13.0	27.68	1.45	0.78	8.81	0.00214								
1.00	0.0056	13.0	15.0	36.63	1.09	0.75	5.95	0.00172								
1.50	0.0086	12.0	12.0	27.99	1.43	1.28	12.9	0.00172								
2.20	0.0130	10.0	10.0	26.66	1.50	1.6	14.5	0.00154								
3.30	0.0199	8.0	8.0	27.22	1.47	1.98	13.61	0.00139								
4.70	0.0289	6.5	7.0	28.39	1.41	2.13	11.5	0.00124								
5.60	0.0327	6.0	7.0	29.40	1.36	2.53	13.39	0.00124								
6.80	0.0425	5.5	5.5	26.96	1.48	2.7	12.78	0.00113								
8.20	0.0483	5.5	5.5	26.34	1.52	2.9	14.11	0.00113								
10.00	0.0679	4.5	4.5	25.21	1.59	3.17	12.25	0.00101								

**Notes**

- (1) Thermal resistance of the part [°C/W]
- (1) Total power loss that will cause an approximate ΔT of 40 °C
- (2) V-μs product that corresponds to a peak flux density of 100 Gauss
- (3) Core loss constant
- (4) AC loss constant

APPLICATION NOTE



## IHL Selection Example

IHL-3232 APPLICATIONS																
L <sub>0</sub> μH	DCR Ω TYP.	I <sub>HEAT</sub> (A)	I <sub>SAT</sub> (A)	R <sub>TH</sub> (1)	P <sub>HEAT</sub> (2) (W)	ET <sub>100</sub> (3)	K <sub>0</sub> (4)	K <sub>1</sub> (5)	DCR Ω TYP.	I <sub>HEAT</sub> (A)	I <sub>SAT</sub> (A)	R <sub>TH</sub> (1)	P <sub>HEAT</sub> (2) (W)	ET <sub>100</sub> (3)	K <sub>0</sub> (4)	K <sub>1</sub> (5)
IHL-3232CZ-01									IHL-3232CZ-11							
0.22	0.00150	32.0	43.0	22.6	1.77	0.28	5.42	0.00297	0.00151	36.0	24.0	17.7	2.26	0.23	3.50	0.00297
0.33	0.00240	25.0	32.0	23.1	1.73	0.33	4.29	0.00266	0.00222	27.0	18.0	21.4	1.87	0.26	2.85	0.00266
0.47	0.00311	21.5	35.0	24.1	1.66	0.50	6.90	0.00238	0.00254	24.0	18.0	23.7	1.69	0.45	6.02	0.00266
0.68									0.00373	20.0	15.2	23.2	1.72	0.57	6.08	0.00238
0.82									0.00455	18.5	15.0	22.3	1.80	0.70	7.38	0.00214
1.0	0.00780	13.7	29.0	23.7	1.69	0.97	10.93	0.00172	0.00607	16.0	14.8	22.3	1.79	0.84	8.81	0.00192
1.5	0.01240	11.0	24.0	23.1	1.73	1.28	12.02	0.00154	0.00829	12.5	11.3	26.8	1.49	1.09	9.61	0.00172
2.2	0.01900	9.0	21.0	22.5	1.78	1.63	13.06	0.00139	0.01370	10.4	10.4	23.4	1.71	1.23	8.87	0.00154
3.3	0.02560	7.2	12.0	26.1	1.53	1.41	5.82	0.00509								
4.7	0.03200	6.6	10.5	24.9	1.61	1.52	4.91	0.00509	0.02670	7.6	5.4	22.5	1.78	1.21	4.02	0.00509
5.6	0.03470	6.3	10.0	25.2	1.59	1.68	5.60	0.00509								
6.8	0.04610	5.3	9.5	26.8	1.49	2.28	7.75	0.00456	0.03530	6.5	5.0	23.2	1.72	1.68	5.22	0.00509
8.2	0.05540	4.8	9.5	27.2	1.47	2.27	6.57	0.00456	0.04360	5.9	4.2	22.8	1.75	1.94	5.81	0.00456
10	0.06650	4.7	8.2	23.6	1.70	2.56	7.13	0.00413	0.05150	5.3	3.8	24.0	1.67	2.23	6.27	0.00456
15									0.07970	4.3	3.8	23.5	1.70	3.03	7.54	0.00413
22									0.12300	3.6	2.8	21.7	1.84	3.81	8.23	0.00369
33									0.19200	2.6	2.5	26.7	1.50	4.55	7.96	0.00335
IHL-3232DZ-01									IHL-3232DZ-11							
0.22	0.00157	30.7	34.0	23.4	1.71	0.19	2.03	0.00331	0.00126	34.0	22.0	23.8	1.68	0.18	2.45	0.00311
0.33	0.00200	29.5	36.0	19.9	2.01	0.35	4.55	0.00297	0.00201	27.5	16.0	22.8	1.75	0.23	2.29	0.00297
0.47	0.00245	25.0	31.5	22.6	1.77	0.47	5.52	0.00297	0.00222	25.0	14.0	25.0	1.60	0.32	2.98	0.00297
0.68	0.00343	21.0	24.5	22.9	1.75	0.56	5.47	0.00266	0.00301	22.2	14.5	23.4	1.71	0.53	5.51	0.00266
0.82	0.00413	19.0	24.2	23.2	1.72	0.64	5.91	0.00238	0.00363	19.5	15.0	25.1	1.59	0.68	7.30	0.00238
1.0	0.00540	18.0	24.0	19.8	2.02	0.88	8.59	0.00214	0.00433	18.2	12.0	24.2	1.66	0.71	6.36	0.00238
2.2	0.01280	10.5	23.0	24.6	1.63	1.78	14.50	0.00172	0.00880	14.5	10.2	18.7	2.14	1.58	14.13	0.00192
3.3	0.01650	9.2	20.0	24.8	1.61	2.09	14.33	0.00172	0.01400	10.5	9.7	22.5	1.78	1.79	12.06	0.00172
4.7	0.02990	7.5	18.7	20.6	1.94	2.90	17.70	0.00139	0.02110	8.0	8.7	25.7	1.56	2.38	14.87	0.00154
5.6	0.03320	6.8	16.7	22.6	1.77	3.02	17.06	0.00139	0.02670	7.4	7.6	23.7	1.69	2.78	17.29	0.00139
6.8	0.04460	5.7	15.2	23.9	1.67	3.35	16.98	0.00124	0.03120	7.0	6.7	22.7	1.76	2.73	13.95	0.00139
8.2	0.04750	5.5	10.0	24.1	1.66	2.71	9.27	0.00456	0.04210	5.7	6.6	25.3	1.58	3.39	17.54	0.00124
10	0.05600	5.2	9.0	22.9	1.75	2.79	8.11	0.00456	0.04840	5.4	6.4	24.6	1.63	3.56	15.87	0.00124
15									0.06100	4.9	3.7	23.7	1.69	2.99	7.54	0.00456
22									0.08800	4.3	3.3	21.3	1.88	3.93	9.05	0.00413
33									0.13500	3.2	3.2	25.1	1.60	5.61	11.75	0.00369

## Notes

- (1) Thermal resistance of the part [°C/W]  
(2) Total power loss that will cause an approximate ΔT of 40 °C  
(3) V-μs product that corresponds to a peak flux density of 100 Gauss  
(4) Core loss constant  
(5) AC loss constant



## IHLP Selection Example

IHLP-4040 APPLICATIONS																
$L_0$ $\mu\text{H}$	DCR $\Omega$ TYP.	$I_{\text{HEAT}}$ (A)	$I_{\text{SAT}}$ (A)	$R_{\text{TH}}$ (1)	$P_{\text{HEAT}}$ (2) (W)	$ET_{100}$ (3)	$K_0$ (4)	$K_1$ (5)	DCR $\Omega$ TYP.	$I_{\text{HEAT}}$ (A)	$I_{\text{SAT}}$ (A)	$R_{\text{TH}}$ (1)	$P_{\text{HEAT}}$ (2) (W)	$ET_{100}$ (3)	$K_0$ (4)	$K_1$ (5)
IHLP-4040DZ-01									IHLP-4040DZ-11							
0.19	0.00088	40.0	90.0	24.76	1.62	0.68	35.45	0.00143	0.00070	40.00	46.00	30.95	1.29	0.35	13.75	0.00143
0.24									0.00085	33.00	44.00	37.45	1.07	0.68	33.05	0.00143
0.36	0.00130	31.5	60.0	26.87	1.49	0.39	6.66	0.00383	0.00105	32.00	30.00	32.24	1.24	0.53	12.79	0.00383
0.47									0.00153	30.00	30.00	25.17	1.59	0.50	8.67	0.00383
0.56	0.00170	27.5	49.0	26.96	1.48	0.88	18.31	0.00340	0.00161	32.00	22.00	21.84	1.83	0.72	13.04	0.00340
0.78									0.00180	27.00	22.00	26.42	1.51	1.09	22.84	0.00340
1.00	0.00370	17.5	36.0	30.59	1.31	1.57	26.68	0.00270	0.00230	25.00	20.00	24.11	1.66	1.12	18.87	0.00340
1.50	0.00530	15.0	27.5	29.07	1.38	1.90	26.24	0.00240								
1.80									0.00450	17.00	16.00	26.65	1.50	2.09	34.11	0.00240
2.00									0.00520	16.00	14.00	26.04	1.54	1.99	25.92	0.00240
2.20	0.00820	12.0	25.6	29.35	1.36	2.34	27.18	0.00213								
3.30	0.01370	10.0	18.6	32.09	1.25	2.08	12.95	0.00697								
4.70	0.01500	9.5	17.0	25.60	1.56	2.77	17.78	0.00697	0.01290	9.50	7.60	29.77	1.34	2.03	10.93	0.00782
5.6	0.01760	8.5	16.0	27.26	1.47	3.24	20.44	0.00697								
6.80	0.02120	8.0	13.5	25.55	1.57	3.30	17.44	0.00697	0.01750	9.00	7.50	24.45	1.64	2.75	14.23	0.00697
10.00	0.03320	6.8	12.0	22.58	1.77	4.30	20.87	0.00550	0.02780	7.50	7.10	22.17	1.80	4.52	25.56	0.00550
15.00									0.04090	6.25	6.00					
22.00									0.06040	5.00	4.50	22.96	1.74	6.05	21.46	0.00489
33.00									0.08750	4.40	4.00	24.80		8.01	25.10	0.00509
47.00									0.13200	3.30	3.00	18.29	2.19	10.63	31.11	0.00391
100.00									0.2490	2.50	2.25	22.27	1.80	13.98	25.70	0.00354

## Notes

- (1) Thermal resistance of the part [ $^{\circ}\text{C}/\text{W}$ ]
- (2) Total power loss that will cause an approximate  $\Delta T$  of  $40^{\circ}\text{C}$
- (3)  $V\text{-}\mu\text{s}$  product that corresponds to a peak flux density of 100 Gauss
- (4) Core loss constant
- (5) AC loss constant



## IHLP Selection Example

IHLP-5050 APPLICATIONS																
L <sub>0</sub> μH	DCR Ω TYP.	I <sub>HEAT</sub> (A)	I <sub>SAT</sub> (A)	R <sub>TH</sub> (1)	P <sub>HEAT</sub> (2) (W)	ET <sub>100</sub> (3)	K <sub>0</sub> (4)	K <sub>1</sub> (5)	DCR Ω TYP.	I <sub>HEAT</sub> (A)	I <sub>SAT</sub> (A)	R <sub>TH</sub> (1)	P <sub>HEAT</sub> (2) (W)	ET <sub>100</sub> (3)	K <sub>0</sub> (4)	K <sub>1</sub> (5)
IHLP-5050CE-01									IHLP-5050CE-11							
0.10	0.0008	43.0	84.0	23.43	1.71	0.09	2.38	0.00128								
0.15	0.0010	41.0	75.0	20.62	1.94	0.27	9.72	0.00128								
0.22	0.0011	38.5	65.0	21.26	1.88	0.71	32.14	0.00128								
0.33	0.0013	36.5	62.0	20.01	2.00	0.80	23.86	0.00383								
0.47	0.0016	32.0	55.0	21.16	1.89	0.86	18.94	0.00383								
0.60	0.0018	29.0	51.0	22.90	1.75	1.11	25.74	0.00383								
0.68	0.0023	28.0	49.0	19.22	2.08	1.12	24.57	0.00340								
0.82	0.0026	25.0	44.0	21.33	1.88	1.51	35.19	0.00340								
1.00	0.0033	24.0	40.0	18.24	2.19	1.32	21.69	0.00340								
1.50	0.0051	19.0	35.0	18.83	2.12	2.25	38.60	0.00270								
1.80	0.0065	16.5	30.0	19.59	2.04	1.55	14.19	0.00990								
2.20	0.0072	16.0	29.0	18.81	2.13	2.10	31.39	0.00990								
3.30	0.0110	12.0	27.0	21.88	1.83	2.71	25.18	0.00782								
4.70	0.0143	10.0	24.0	24.24	1.65	3.51	28.52	0.00782								
5.60	0.0183	9.5	19.0	20.99	1.91	4.33	34.66	0.00697								
6.80	0.0198	9.0	18.0	21.61	1.85	3.86	25.10	0.00697								
8.2	0.0246	8.5	16.0	19.50	2.05	4.82	33.66	0.00623								
10	0.0304	7.0	14.0	23.27	1.72	5.36	32.38	0.00623								
IHLP-5050EZ-01									IHLP-5050EZ-11							
0.10	0.0005	55.00	118.00	21.62	1.85	0.17	5.79	0.00161								
0.22	0.0006	51.00	110.00	20.82	1.92	0.92	53.68	0.00161								
0.33	0.0009	42.00	80.00	23.12	1.73	0.95	32.50	0.00161								
0.47	0.0011	38.00	65.00	21.82	1.83	1.11	29.00	0.00483								
0.56	0.0013	36.00	55.00	20.57	1.94	1.00	23.04	0.00430								
0.68	0.0015	34.00	54.00	19.99	2.00	1.55	42.08	0.00430								
0.82	0.0020	31.00	53.00	18.03	2.22	2.06	57.33	0.00383								
1.00	0.0021	29.00	50.00	19.63	2.04	1.96	41.82	0.00383								
1.50	0.0034	23.00	48.00	19.27	2.08	2.88	60.16	0.00303								
2.20	0.0046	20.00	32.00	18.84	2.12	2.91	49.82	0.00303								
3.30	0.0077	15.00	32.00	20.01	2.00	2.90	41.87	0.00303								
4.70	0.0128	12.00	27.00	18.81	2.13	4.49	65.07	0.00240								
5.60	0.0140	11.50	22.00	18.72	2.14	5.19	55.68	0.00213								
6.80	0.0154	11.00	21.00	18.60	2.15	5.63	61.71	0.00213								
7.80	0.0172	10.00	18.00	20.15	1.98	5.65	54.15	0.00213								
8.20	0.0189	9.50	18.00	20.32	1.97	5.67	39.43	0.00782								
10	0.0214	9.00	16.00	20.00	2.00	5.88	38.77	0.00782								
15	0.0280	8.25	14.50	18.19	2.20	5.69	34.19	0.00697								

**Notes**

- (1) Thermal resistance of the part [°C/W]
- (1) Total power loss that will cause an approximate ΔT of 40 °C
- (2) V-μs product that corresponds to a peak flux density of 100 Gauss
- (3) Core loss constant
- (4) AC loss constant

APPLICATION NOTE



### IHLP Selection Example

IHLP-5050 APPLICATIONS																
L <sub>0</sub> μH	DCR Ω TYP.	I <sub>HEAT</sub> (A)	I <sub>SAT</sub> (A)	R <sub>TH</sub> (1)	P <sub>HEAT</sub> (2) (W)	ET <sub>100</sub> (3)	K <sub>0</sub> (4)	K <sub>1</sub> (5)	DCR Ω TYP.	I <sub>HEAT</sub> (A)	I <sub>SAT</sub> (A)	R <sub>TH</sub> (1)	P <sub>HEAT</sub> (2) (W)	ET <sub>100</sub> (3)	K <sub>0</sub> (4)	K <sub>1</sub> (5)
IHLP-5050FD-01									IHLP-5050FD-11							
0.10	0.0005	60.0	120.0	20.49	1.95	0.17	5.86	0.00181								
0.15	0.0005	55.0	118.0	21.62	1.85	0.51	26.26	0.00181								
0.22	0.0006	53.0	112.0	19.59	2.04	0.92	54.32	0.00161								
0.30	0.0007	48.0	72.0	21.49	1.86	0.72	21.56	0.00543								
0.33	0.0008	46.0	65.0	19.74	2.03	0.83	24.79	0.00483								
0.40	0.0009	44.0	64.0	19.89	2.01	1.26	45.17	0.00483								
0.47	0.0010	41.0	63.0	20.62	1.94	1.43	50.92	0.00430								
0.56	0.0012	37.0	62.0	21.10	1.90	1.92	77.81	0.00430								
0.68	0.0014	35.0	60.0	20.21	1.98	1.47	36.64	0.00430								
0.82	0.0016	33.0	50.0	19.89	2.01	1.45	28.23	0.00430								
1.00	0.0017	32.0	49.0	19.91	2.01	1.96	42.83	0.00430								
1.20	0.0021	30.0	48.0	18.34	2.18	2.51	56.06	0.00383								
1.50	0.0025	27.0	45.0	19.02	2.10	2.60	48.64	0.00383								
1.80	0.0028	24.0	41.0	21.49	1.86	2.81	47.09	0.00383								
2.20	0.0035	22.0	40.0	20.46	1.95	3.25	52.53	0.00340								
3.30	0.0057	18.0	35.0	18.77	2.13	3.93	49.36	0.00303								
4.70	0.0093	13.5	30.0	20.45	1.96	6.01	80.59	0.00270								
5.6	0.0093	13.5	26.5	20.45	1.96	5.49	57.91	0.00270								
6.8	0.0131	11.5	16.5	20.01	2.00	4.56	29.07	0.00782								
8.2	0.0145	10.5	16.0	21.68	1.84	5.52	35.72	0.00782								
10	0.0164	10.0	15.5	21.14	1.89	5.92	39.12	0.00782								

**Notes**

- (1) Thermal resistance of the part [°C/W]
- (1) Total power loss that will cause an approximate ΔT of 40 °C
- (2) V-μs product that corresponds to a peak flux density of 100 Gauss
- (3) Core loss constant
- (4) AC loss constant

APPLICATION NOTE





IHLP Selection Example

IHLP-6767 APPLICATIONS																	
L <sub>0</sub> μH	DCR Ω MAX.	I <sub>HEAT</sub> (A)	I <sub>SAT</sub> (A)	R <sub>TH</sub> (1)	P <sub>HEAT</sub> (2) (W)	ET <sub>100</sub> (3)	K <sub>0</sub> (4)	K <sub>1</sub> (5)	DCR Ω MAX.	I <sub>HEAT</sub> (A)	I <sub>SAT</sub> (A)	R <sub>TH</sub> (1)	P <sub>HEAT</sub> (2) (W)	ET <sub>100</sub> (3)	K <sub>0</sub> (4)	K <sub>1</sub> (5)	
IHLP-6767DZ-01									IHLP-6767DZ-11								
0.22	0.00080	75.0	92.0	7.70	5.19	0.72	36.25	0.00192									
0.33	0.00116	56.0	82.0	9.53	4.20	1.61	90.56	0.00154									
0.47	0.00131	49.0	77.0	11.02	3.63	1.51	55.60	0.00461									
0.56	0.00145	47.0	62.0	10.82	3.70	1.89	73.69	0.00461									
0.68	0.00190	41.0	60.0	10.85	3.69	2.38	92.99	0.00413									
0.82	0.00217	38.5	51.0	10.78	3.71	1.92	48.88	0.00413									
1.0	0.00253	31.5	58.0	13.81	2.90	2.70	73.48	0.00413	0.00186	41.0	27.5	11.09	3.61	2.44	89.35	0.00413	
1.5	0.00450	23.5	40.0	13.95	2.87	3.30	63.42	0.00331	0.00312	31.0	21.0	11.56	3.46	3.05	75.73	0.00370	
2.2	0.00610	19.0	30.0	15.74	2.54	4.11	80.00	0.00297	0.00457	26.0	19.0	11.22	3.57	2.71	43.48	0.01214	
3.3	0.00906	18.5	28.0	11.18	3.58	4.81	72.95	0.00266	0.00664	20.5	14.0	12.42	3.22	3.67	50.78	0.01090	
4.7	0.01070	16.0	27.0	12.65	3.16	5.56	61.96	0.01090	0.00847	18.0	12.0	12.63	3.17	4.09	44.05	0.01090	
5.6	0.01340	14.0	26.0	13.20	3.03	6.28	67.19	0.00975	0.01109	15.0	11.5	13.89	2.88	5.88	74.79	0.00975	
6.8	0.01520	13.2	21.0	13.09	3.06	5.63	47.86	0.00975	0.01254	14.5	10.5	13.15	3.04	6.40	72.40	0.00975	
8.2	0.01680	11.5	20.0	15.60	2.56	6.89	60.83	0.00975									
10	0.02440	10.5	19.5	12.89	3.10	8.27	64.94	0.00872	0.01720	12.0	8.0	13.99	2.86	6.89	56.71	0.00975	
15									0.02780	9.0	7.5	15.39	2.60	8.49	59.52	0.00785	
22									0.04270	7.2	6.2	15.66	2.55	9.54	50.87	0.00705	
33									0.06440	6.5	6.0	12.74	3.14	13.52	68.53	0.00630	
47									0.09860	5.0	4.3	14.06	2.84	14.30	53.92	0.00565	
IHLP-6767GZ-01									IHLP-6767GZ-11								
0.22	0.00063	80.0	129.0	8.60	4.65	0.51	23.87	0.00192									
0.33	0.00071	65.0	126.0	11.55	3.46	1.23	80.22	0.00192	0.00061	75.5	55.0	9.97	4.01	0.51	22.25	0.00192	
0.47	0.00084	62.0	123.0	10.73	3.73	2.61	217.42	0.00192	0.00073	64.5	62.0	11.41	3.50	1.41	89.84	0.00192	
0.56	0.00091	56.0	88.0	12.15	3.29	1.67	66.57	0.00577	0.00083	61.0	66.0	11.22	3.56	2.67	209.55	0.00192	
0.82	0.00117	50.0	73.0	11.85	3.38	2.30	72.97	0.00577	0.00098	56.5	45.0	11.08	3.61	2.29	96.73	0.00577	
1.0	0.00128	48.0	73.0	11.75	3.40	3.08	109.35	0.00577	0.00121	55.5	32.0	9.30	4.30	1.83	49.46	0.00577	
1.5	0.00178	42.0	65.0	11.04	3.62	3.58	97.24	0.00516	0.00154	48.0	31.0	9.77	4.09	3.48	112.31	0.00516	
1.8	0.00196	38.0	65.0	12.25	3.27	4.74	141.72	0.00516									
2.2	0.00240	35.0	62.0	11.79	3.39	4.94	122.99	0.00516	0.00185	43.5	28.0	9.90	4.04	4.28	115.27	0.00516	
3.3	0.00368	28.0	54.0	12.01	3.33	7.03	170.20	0.00413	0.00279	35.0	27.0	10.14	3.94	5.33	117.80	0.00461	
4.7	0.00484	25.0	41.0	11.46	3.49	7.15	125.58	0.00413	0.00398	30.0	21.0	9.68	4.13	6.33	116.62	0.00413	
5.6	0.00668	21.0	41.0	11.77	3.40	7.97	118.95	0.00370	0.00423	28.0	21.0	10.45	3.83	7.20	137.75	0.00413	
6.8	0.00837	19.0	32.0	11.47	3.49	8.02	98.99	0.01214	0.00586	22.5	18.5	11.68	3.42	7.78	123.60	0.00370	
8.2	0.01010	18.0	25.0	10.59	3.78	8.27	77.61	0.01214	0.00771	21.0	18.0	10.19	3.92	9.84	158.43	0.00331	
10	0.01105	16.5	25.0	11.52	3.47	9.39	86.12	0.01214	0.00889	19.0	17.0	10.80	3.70	10.48	150.18	0.00331	
15	0.01880	12.5	25.0	11.80	3.39	12.01	96.62	0.00975	0.01370	14.0	12.0	12.91	3.10	10.99	99.86	0.01090	
22	0.02510	11.0	23.0	11.41	3.50	14.16	90.80	0.00975	0.02000	12.0	9.5	12.04	3.32	12.53	89.24	0.00975	
33.00									0.03510	10.7	9.0	8.63	4.64	18.78	136.48	0.00785	
47.00									0.04070	8.7	8.6	11.25	3.55	19.23	98.48	0.00872	
56.00									0.05500	7.2	4.2	12.16	3.29	17.75	63.3	0.01835	
68.00									0.07210	6.1	4.5	12.92	3.10	21.38	79.06	0.01646	
82.00									0.08730	5.5	4.5	13.13	3.05	22.17	66.74	0.01646	
100.00									0.10500	5.0	4.0	13.20	3.03	25.42	73.04	0.01646	

Notes

- (1) Thermal resistance of the part [°C/W]
- (2) Total power loss that will cause an approximate ΔT of 40 °C
- (3) V-μs product that corresponds to a peak flux density of 100 Gauss
- (4) Core loss constant
- (5) AC loss constant

APPLICATION NOTE