

RADIO CONSTRUCTORS DATA SHEET

19

IR DISSIPATION CURRENTS BELOW 50mA

The Table gives dissipation in watts, from $W = I^2R$, for resistance at commonly encountered current values below 50mA. For intermediate resistances multiply up from the most convenient lower value. Thus, the dissipation in 68k Ω at 6mA is about 3 times that in 22k Ω at this current and equals 3×0.79 approximately, or 2.4 watts. (See Data Sheet No. 20 for further details.)

Resistance	1mA	2mA	3mA	4mA	6mA	8mA	10mA	15mA	20mA	30mA	40mA
47 Ω								0.011	0.019	0.042	0.075
100 Ω							0.01	0.022	0.04	0.09	0.16
220 Ω						0.014	0.022	0.05	0.088	0.2	0.35
470 Ω					0.017	0.03	0.047	0.11	0.19	0.42	0.75
1k Ω			0.02	0.016	0.036	0.064	0.1	0.22	0.4	0.9	1.6
2.2k Ω			0.042	0.035	0.079	0.14	0.22	0.5	0.88	2.0	3.5
4.7k Ω		0.019	0.09	0.075	0.17	0.3	0.47	1.1	1.9	4.2	7.5
10k Ω	0.01	0.04	0.20	0.16	0.36	0.64	1.0	2.2	4.0	9.0	16
22k Ω	0.022	0.088	0.42	0.35	0.79	1.4	2.2	5.0	8.8	20	
47k Ω	0.47	0.19	0.9	0.75	1.7	3.0	4.7	11	19		
100k Ω	0.1	0.4	2.0	1.6	3.6	6.4	10	22			
220k Ω	0.22	0.88	4.2	3.5	7.9	14	22				
470k Ω	0.47	1.9	9.0	7.5	17						
1M Ω	1.0	4.0	20	16							
2.2M Ω	2.2	8.8									

IR DISSIPATION 50mA AND ABOVE

The Table gives dissipation in watts, from $W = I^2 R$, for resistance at commonly encountered current values from 50mA to 1A. Dissipation for intermediate resistances can be found by multiplying up, as described in Data Sheet No. 19. For reliable working, use carbon resistors with ratings at least 1.5 times the wattage figure given here or in Data Sheet No. 19.

Resistance	50mA	60mA	80mA	100mA	120mA	140mA	160mA	200mA	300mA	500mA	1A
1Ω				0.01	0.014	0.02	0.026	0.04	0.09	0.25	1.0
2.2Ω			0.014	0.022	0.032	0.043	0.056	0.088	0.2	0.55	2.2
4.7Ω			0.03	0.047	0.068	0.092	0.12	0.19	0.42	1.2	4.7
6.8Ω	0.012	0.017	0.044	0.068	0.098	0.13	0.17	0.27	0.61	1.7	6.8
10Ω	0.017	0.024	0.064	0.1	0.14	0.2	0.26	0.4	0.9	2.5	10
22Ω	0.025	0.036	0.079	0.22	0.32	0.43	0.56	0.88	2.0	5.5	22
47Ω	0.055	0.079	0.14	0.47	0.68	0.92	1.2	1.9	4.2	12	
68Ω	0.12	0.17	0.3	0.68	0.98	1.3	1.7	2.7	6.1	17	
100Ω	0.17	0.24	0.44	1.0	1.4	2.0	2.6	4.0	9.0		
220Ω	0.25	0.36	0.64	2.2	3.2	4.3	5.6	8.8	20		
470Ω	0.55	0.79	1.4	4.7	6.8	9.2	12	19			
680Ω	1.2	1.7	3.0	6.8	9.8	13	17				
1kΩ	1.7	2.4	4.4	10	14	20					
2.2kΩ	2.5	3.6	6.4	22							
4.7kΩ	5.5	7.9	14								
	12										