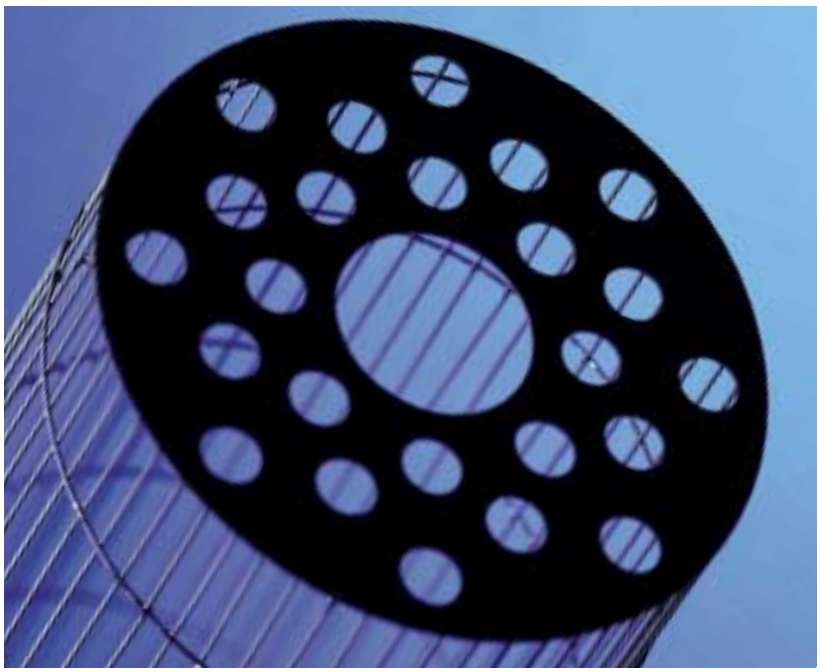
INDUSTRIAL

RF HEATING



Ceramic-metal triodes

THALES

RF HEATING QUALITY

Thales Electron Devices' expertise in power grid tube technology makes us today's leader in the RF industrial heating market. We have established a solid reputation with both equipment makers and users, stemming from our strict emphasis on quality in tube design and manufacture and continuous product performance improvement.

With Thales Electron Devices power grid tubes, customers enjoy a wide choice of power levels (up to more than 1 MW) and frequencies (up to 100 MHz and beyond), as well as a standard of quality, ruggedness and durability which is recognized by users everywhere.

Furthermore, these tubes are fully compatible with commercial standards and can be easily installed in existing generators.

With a large network of local representatives throughout the world, Thales Electron Devices ensures comprehensive product support for all customers.

This document gives the main characteristics of the families of industrial heating ceramic-metal triodes. For more details, contact your local representative.

All these products are designed, developed and manufactured at an ISO 9001 : V2000 registered production site.

CERAMIC-METAL TRIODES

Ceramic-metal triodes air cooled

Output Power	Reference	Typical operating conditions C class						Filament		Maximum ratings					Dimensions (max.)		
		f	V_a	$-V_{g1}$	I_a	I_{g1}	P_{g1}	V_f	I_f	μ	V_a	P_a	P_{g1}	f_{max}	l	d	m
kW		MHz	kV	V	A	A	W	V	A		kV	kW	W	MHz	mm	mm	kg
5	**ITL 2-1**	30	6	470	1.1	0.24	65	6.3	35	21	7.2	1.5	130	160	196	70	1.1
6	**RS 3005 CL**	85	6.3	550	1.29	0.285	95	6.3	33	20	7.2	2.5	150	160	172	122	3
6.7	**ITL 3-1**	30	6.8	520	1.3	0.24	75	6.3	35	21	7.2	3.5	130	160	195	123	2.7
11	**RS 3010 CL**	85	6.5	530	2.25	0.535	160	6.3	66	20	7.2	5	200	150	192	122	3.9
13	**ITL 5-1**	30	6.8	540	2.5	0.43	142	6.3	65	20	7.2	6	200	150	210	123	2.9
18	**RS 3012 CL**	50	10	550	2.3	0.5	155	6	64	35	12	10	200	50	200	159	6.5
20	**RS 3020 CL**	40	10	900	2.5	0.62	150	5.7	135	22	12	10	300	120	220	159	5.6
25	**ITL 9-1**	30	10	610	3.3	0.35	76	5.8	145	22	12	8.5	350	120	220	145	4.4
32	**RS 3026 CL**	40	10	800	4.1	0.7	240	7	115	20	12	15	550	120	242	196	11
33	**ITL 12-1**	30	10	640	4.3	0.53	145	5.8	145	22	12	12	350	120	220	160	6.5
45	**ITL 15-2**	30	12	650	5.0	0.33	75	7.2	180	25	13	17	600	120	265	174	9
60	**RS 3040 CL**	30	12	1 100	6.3	1.2	470	8	185	20	14	25	820	100	282	196	13
75	**ITL 25-1**	30	12	810	8.1	0.86	250	9	180	20	14	30	700	100	314	205	14
85	**ITL 25-3**	30	12	830	9.2	1.1	360	9	180	20	14	30	1 200	100	314	205	14
	ITL 30-2	30	12	715	9.2	1	300	11	240	23	14	28	1 200	100	350	230	20
120	**RS 3060 CL**	30	13	950	12.1	1.75	750	10	190	22	14	35	1 200	100	321	215	18
120	**RS 3080 CL**	30	12	1 055	12.7	2.2	942	11	205	19	14	45	1 250	100	335	215	18.5

The ITL family ceramic-metal air cooled triodes

The RS family ceramic-metal air cooled triodes

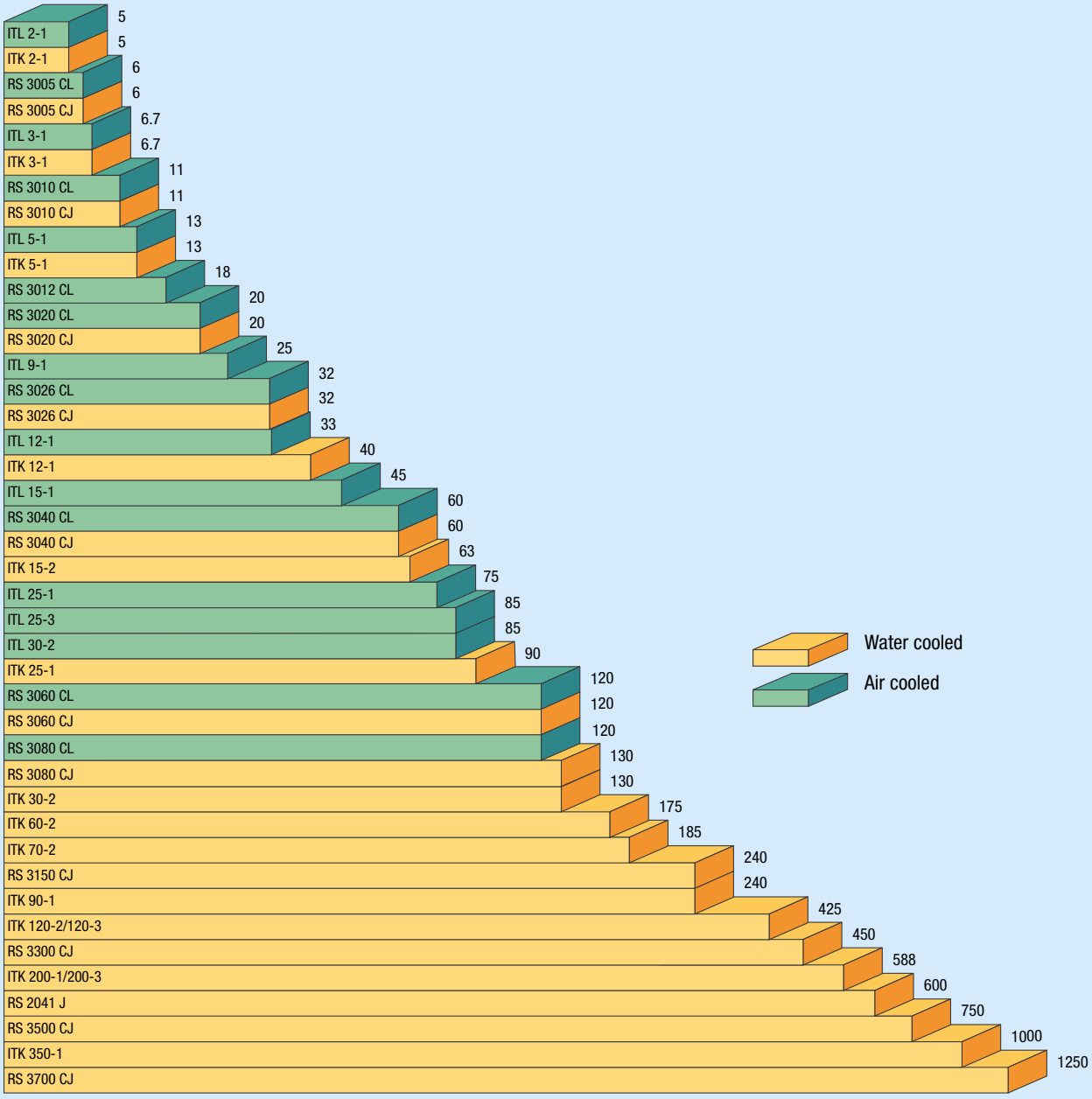
Ceramic-metal triodes water cooled

Output Power	Reference	Typical operating conditions C class						Filament		Maximum ratings					Dimensions (max.)		
		f	V_a	$-V_{g1}$	I_a	I_{g1}	P_{g1}	V_f	I_f	μ	V_a	P_a	P_{g1}	f_{max}	l	d	m
kW		MHz	kV	V	A	A	W	V	A		kV	kW	W	MHz	mm	mm	kg
5	**ITK 2-1**	1.5	6	470	1.1	0.24	65	6.3	35	21	7.2	1.5	80	1.5	235	100	1.5
6	**RS 3005 CJ**	85	6.3	550	1.29	0.285	95	6.3	33	20	7.2	2.5	150	160	217	130	0.9
6.7	**ITK 3-1**	30	6.8	520	1.3	0.24	75	6.3	35	21	7.2	3.5	130	160	218	100	1.6
11	**RS 3010 CJ**	85	6.5	530	2.25	0.535	160	6.3	66	20	7.2	5	200	150	237	130	1.1
13	**ITK 5-1**	30	6.8	540	2.5	0.43	142	6.3	65	20	7.2	6	200	150	240	100	1.8
20	**RS 3020 CJ**	40	10	900	2.5	0.62	150	5.7	135	22	12	20	300	120	247	130	4.1
32	**RS 3026 CJ**	40	10	800	4.1	0.7	240	7	115	20	12	25	550	120	303	150	7.0
40	**ITK 12-1**	30	10	690	5.3	0.69	240	5.8	145	22	12	15	350	120	250	155	3.1
60	**RS 3040 CJ**	30	12	1 100	6.3	1.2	470	8	185	20	14	35	820	100	368	150	8.5
63	**ITK 15-2**	30	12	700	6.8	0.7	220	7.2	180	25	13	20	600	120	295	155	3.8
90	**ITK 25-1**	30	12	850	9.7	1.3	480	9	180	20	14	50	700	100	354	180	6.5
120	**RS 3060 CJ**	30	13	950	12.1	1.75	750	10	190	22	14	40	1 200	100	375	185	7.5
130	**ITK 30-2**	30	12	795	14.4	2.2	890	11	240	23	14	50	1 200	100	374	200	10.3
130	**RS 3080 CJ**	30	12	1 055	12.7	2.2	942	11	205	19	14	60	1 250	100	395	185	8
175	**ITK 60-2**	15	13	870	18	3.5	1 530	13	250	23	14	70	1 800	60	404	200	10.6
185	**ITK 70-2**	30	13	845	18.8	2.5	925	12.2	255	30	15	100	2 500	100	418	190	11
240	**RS 3150 CJ**	15	14	850	22.3	3.1	1 200	15	255	22	15	100	2 000	30	513	220	20
	ITK 90-1	30	14	660	22.1	5.7	1 800	12.6	380	28	17	120	3 000	100	418	190	11
425	**ITK 120-2**	15	17	1 000	33	4.8	2 700	18	330	27	18	150	3 600	30	487	250	18
	ITK 120-3	15	17	1 000	33	4.8	2 700	18	330	27	20	150	3 600	30	526	215	18
450	**RS 3300 CJ**	15	16	730	36.3	6.5	3 000	16	425	35	17	150	4 500	30	733	290	62
588	**ITK 200-1**	10	16.5	1 060	48	7.4	5 100	22	375	27	18	220	6 000	30	539	250	22
	ITK 200-3	10	16.5	1 060	48	7.4	5 100	22	375	27	20	220	6 000	30	578	215	22
600	**RS 2041 J**	10	17	900	45.4	8.2	4 300	20	380	35	18	240	7 000	30	735	290	60
750	**RS 3500 CJ**	15	16	1 300	59.5	9.7	5 100	17.5	510	21	18	300	7 000	30	730	310	67
1 000	**ITK 350-1**	10	18	1 025	77	16	8 800	24	620	28	22	500	10 000	30	705	370	72
1 250	**RS 3700 CJ**	15	16	850	100	16	8 400	13.5	1 300	35	20	500	10 000	30	815	350	80

The ITK family ceramic-metal water cooled triodes

The RS family ceramic-metal water cooled triodes

Power table for the use of ceramic-metal triodes in the industry in kW



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S.091C/ 2006.04 - Photos : Thales Electron Devices

SYMBOLS

d	Diameter.
f	Maximum operating frequency (full power output).
f_{max}	Maximum admissible frequency with reduced power input.
I_a	D.C. average anode current.
I_f	Filament current.
I_{g1}	D.C. average control grid current.
l	Length.
m	Mass.
μ	Amplification factor.
P_a	Anode dissipation.
P_{g1}	Control grid dissipation.
V_a	D.C. anode voltage.
V_f	Filament voltage.
V_{g1}	D.C. control grid voltage.