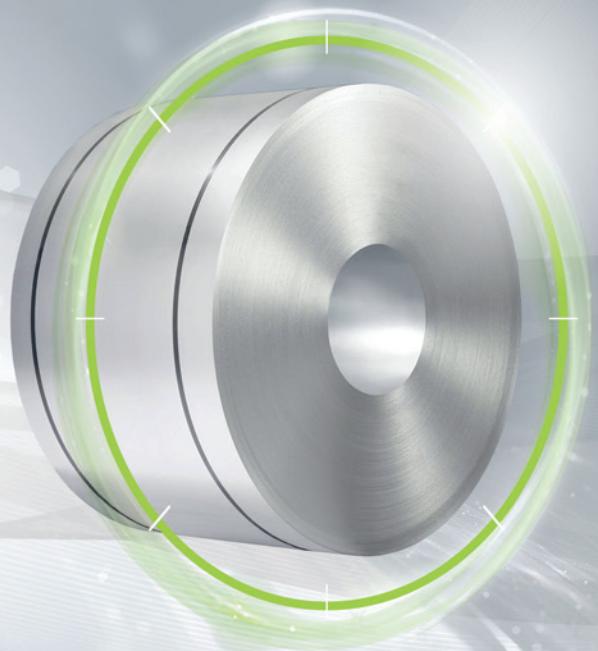


FULLY  
PROCESSED

## isovac 530-65 A

### The perfect solution for direct application

Manufactured in the most modern production lines, this fully processed isovac® grade exhibits highly homogeneous properties across the width and length of the entire strip. The result is excellent and consistent processability in the manufacture of highly efficient electrical components. Upon request, isovac 530-65 A can be supplied with an electrical steel insulation system and can be used directly in as-delivered condition.

#### Convincing advantages:

- » Best processability through consistent mechanical properties and homogeneous, clean surfaces
- » Excellent stackability resulting from high dimensional accuracy in rolling direction and perpendicular to rolling direction (thickness tolerance)
- » Innovative electrical steel insulation systems upon request

voestalpine supplies isovac 530-65 A, an electrical steel of the highest quality. We offer you a customer-focused overall package of products, service and logistics in addition to all the advantages of our integrated metallurgical facility and Steel Service Centers.

**Grade named according to conventional international standards:**

Grade named according to isovac®	DIN EN 10106		IEC 60404-8-4	JIS C2552	GOST 21427.2	ASTM A677	AISI	IS648	GB/T2521.1
	Material No.	Abbreviation							
isovac 530-65 A	1.0824	M530-65A	M530-65A 5	65A530	2312	64F320	-	65C530	65W530

**Mechanical properties:**

Tensile test according to DIN EN ISO 6892-1 and hardness according to DIN EN ISO 6507-1 (Typical values);  
Test direction: Transverse

Grade named according to isovac®	Yield strength	0.2 %-Yield strength	Tensile strength	Elongation	Hardness
	R <sub>eH</sub> [MPa]	R <sub>p0.2</sub> [MPa]	R <sub>m</sub> [MPa]	A <sub>80</sub> [%]	HV5 [-]
isovac 530-65 A	320	300	455	33	155

**Magnetic properties:**

in as-delivered condition (Typical values)

Test direction: Mean value from longitudinal and transverse measurements at 50 Hz (60 Hz), single-sheet test

Grade named according to isovac®	Specific total loss				Magnetic polarization			Relative permeability
	1.0 T P10		1.5 T P15		2500 A/m J25	5000 A/m J50	10000 A/m J100	1.5 T μ <sub>r</sub>
	50 Hz [W/kg]	60 Hz [W/lb]	50 Hz [W/kg]	60 Hz [W/lb]	[T]	[T]	[T]	[-]
isovac 530-65 A	1.90	1.12	4.40	2.60	1.62	1.71	1.82	2100

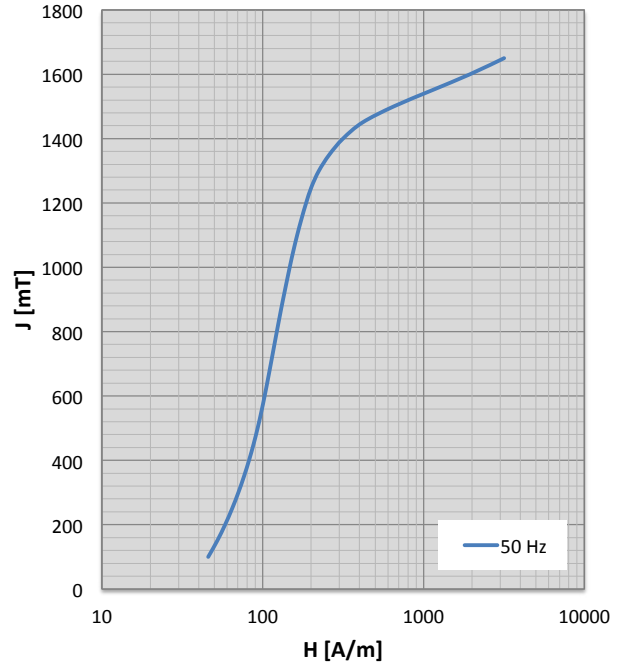
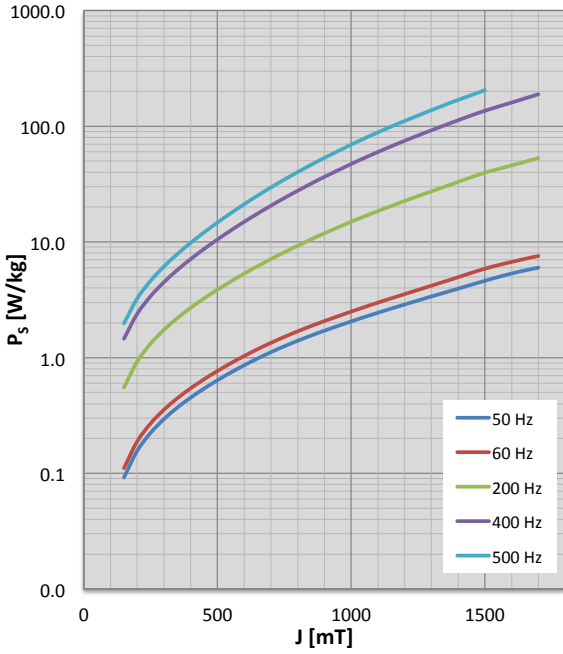
**Physical properties:**

Typical values

Grade named according to isovac®	Density ρ [g/cm³]	Specific electrical resistance ρ <sub>s</sub> [μΩcm]	Thermal conductivity λ [W/mK]
isovac 530-65 A	7.76	35.8	33

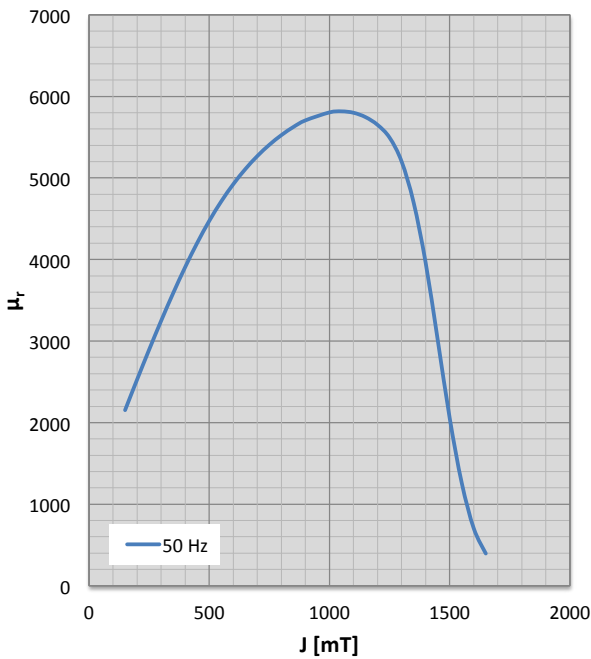
**Characteristics  $P_s/J$  loss curve and characteristics  $J/H$  magnetization curve**

Test direction: Mean value from longitudinal and transverse measurements at indicated frequencies, single-sheet test



**Characteristics  $\mu_r/J$  permeability curve**

Test direction: Mean value from longitudinal and transverse measurements at 50 Hz, single-sheet test



**Frequency dependence of magnetic properties**

Test direction: Mean value longitudinal and transverse at indicated frequencies and polarizations, single-sheet test

50 Hz				60 Hz				200 Hz			
J [mT]	H [A/m]	P <sub>s</sub> [W/kg]	μ <sub>r</sub> [-]	J [mT]	H [A/m]	P <sub>s</sub> [W/kg]	μ <sub>r</sub> [-]	J [mT]	H [A/m]	P <sub>s</sub> [W/kg]	μ <sub>r</sub> [-]
100	46	0.03	1777	100	47	0.03	1775				
150	52	0.09	2155	150	53	0.11	2128	150	59	0.55	1913
200	58	0.16	2528	200	60	0.19	2479	200	68	0.93	2171
250	65	0.22	2894	250	67	0.27	2824	250	77	1.32	2421
300	71	0.29	3249	300	73	0.35	3162	300	86	1.74	2659
350	76	0.37	3588	350	79	0.45	3489	350	95	2.20	2882
400	82	0.45	3907	400	85	0.54	3803	400	103	2.70	3087
450	88	0.54	4204	450	90	0.65	4102	450	112	3.25	3268
500	93	0.64	4473	500	95	0.77	4382	500	120	3.87	3422
550	98	0.74	4713	550	100	0.89	4642	550	128	4.55	3547
600	103	0.86	4924	600	104	1.03	4880	600	137	5.32	3642
650	108	0.98	5108	650	108	1.18	5095	650	145	6.17	3708
700	112	1.11	5268	700	113	1.34	5286	700	154	7.11	3747
750	117	1.25	5407	750	117	1.51	5451	750	164	8.14	3760
800	122	1.40	5525	800	121	1.69	5590	800	175	9.28	3746
850	128	1.55	5625	850	126	1.87	5702	850	187	10.52	3709
900	134	1.71	5706	900	132	2.07	5786	900	200	11.88	3655
1000	147	2.05	5803	1000	145	2.50	5873	1000	229	14.94	3523
1050	155	2.24	5816	1050	152	2.74	5877	1050	244	16.65	3459
1100	164	2.44	5799	1100	160	2.99	5851	1100	260	18.49	3397
1150	174	2.65	5745	1150	170	3.25	5793	1150	276	20.46	3335
1200	186	2.88	5650	1200	181	3.54	5696	1200	293	22.59	3271
1250	201	3.12	5494	1250	195	3.85	5551	1250	311	24.89	3205
1300	223	3.38	5201	1300	214	4.18	5345	1300	330	27.36	3139
1350	259	3.65	4698	1350	243	4.55	5023	1350	354	30.05	3063
1400	316	3.94	3959	1400	294	4.96	4375	1400	383	33.03	2917
1450	417	4.27	3017	1450	397	5.41	3275	1450	440	36.32	2627
1500	652	4.61	2054	1500	647	5.87	2092	1500	644	39.63	2117
1550	1126	4.98	1261	1550	1149	6.30	1223	1550	1128	42.70	1380
1600	1944	5.33	704	1600	2014	6.72	683	1600	1988	45.82	690
1650	3168	5.67	396	1650	3302	7.14	390	1650	3274	49.28	315
1700	4688	5.99	266	1700	4901	7.56	261	1700	4869	53.03	202

**Frequency dependence of magnetic properties**

Test direction: Mean value longitudinal and transverse at indicated frequencies and polarizations, single-sheet test

400 Hz				500 Hz			
J [mT]	H [A/m]	P <sub>s</sub> [W/kg]	μ <sub>r</sub> [-]	J [mT]	H [A/m]	P <sub>s</sub> [W/kg]	μ <sub>r</sub> [-]
100	56	0.55	1440				
150	67	1.46	1647	150	70	1.98	1554
200	78	2.39	1848	200	82	3.25	1734
250	90	3.40	2040	250	94	4.62	1904
300	101	4.49	2217	300	107	6.14	2059
350	113	5.72	2375	350	121	7.86	2195
400	126	7.11	2508	400	135	9.83	2305
450	139	8.69	2611	450	150	12.10	2386
500	152	10.50	2680	500	167	14.72	2431
550	167	12.57	2712	550	184	17.74	2439
600	182	14.91	2711	600	204	21.19	2414
650	199	17.58	2683	650	225	25.13	2366
700	217	20.58	2635	700	247	29.58	2300
750	236	23.94	2572	750	272	34.58	2225
800	258	27.70	2501	800	298	40.17	2148
850	281	31.88	2428	850	327	46.39	2076
900	306	36.50	2355	900	357	53.29	2008
1000	361	47.17	2212	1000	424	69.31	1881
1050	390	53.26	2146	1050	460	78.51	1819
1100	421	59.88	2082	1100	498	88.52	1760
1150	454	67.05	2021	1150	537	99.35	1704
1200	487	74.81	1963	1200	578	111.06	1652
1250	520	83.20	1909	1250	621	123.74	1602
1300	559	92.24	1852	1300	667	137.58	1551
1350	607	101.98	1791	1350	718	152.69	1498
1400	639	112.60	1743	1400	765	168.82	1457
1450	656	124.15	1697	1450	805	185.92	1429
1500	792	136.03	1520	1500	881	205.20	1356
1550	1203	147.79	1121				
1600	2011	160.17	684				
1650	3283	173.95	408				
1700	4894	188.83	275				

Available Dimensions

Grade named according to isovac®	Delivery form	Width [mm]	Length [mm]
isovac 530-65 A	Wide strip / Slit strip	19 – 1590	-
	Cut-to-length sheets	300 – 1590	300 – 5000

Deliverable coating systems

Grade named according to isovac®	Uncoated	C-3	Backlack	C-5	C-6
isovac 530-65 A	✔	✔	☰	✔	✔

✔ Available ☰ On request

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