

TANGO

Output Transformers • Power Transformers • Chokes • Input/Driver Transformers
English Translation of Japanese Product Catalog

TANGO (by Hirata Electric Manufacturing Co., Ltd.) produces high-quality audio transformers for vacuum tube amplifiers. The X and XE series represent their flagship output transformers, featuring Orient Hi-B cut-core construction for excellent magnetic properties, wide bandwidth, low distortion, and high-grade performance.

This catalog covers push-pull and single-ended output transformers, universal types, power transformers, filter chokes, and specialized driver/input transformers. All models are designed for audiophile-grade tube amplifiers using classic tubes such as 300B, 2A3, EL34, KT-88, 6550, 6L6GC, and many others.

OUTPUT TRANSFORMERS — X / XE Series (Orient Hi-B Cut Core)

Push-Pull Types — Secondary: 4Ω, 8Ω, 16Ω

Model	Power (W)	Primary Z _p (Ω)	Response (-3dB)	Primary L (H) Min/Max	DC Current (mA) Total/Unbal.	Loss @16Ω (dB)	Recommended Tubes
X-8P	120 @30Hz	8K	4Hz~60kHz	220 / 970	320 / 6	0.16	EL-156, KT-66
X-5P	120 @30Hz	5K (3.5K)	4Hz~100kHz	150 / 550	420 / 8	0.17	300B, EL-156, KT-88, 6550A, 350B, KT-66, EL-34, 6L6GC
X-3.5P	120 @30Hz	3.5K	4Hz~100kHz	120 / 420	500 / 12	0.16	—
XE-65-1	65 @30Hz	1K	4Hz~80kHz	30 / 60	800 / 25	0.19	6C33C
XE-60-8	60	8K	4Hz~50kHz	210 / 600	220 / 5	0.21	KT-66, 6L6, KT-60T, 7591
XE-60-6.6	60	6.6K	4Hz~60kHz	200 / 500	270 / 5	0.20	—
XE-60-5	60 @30Hz	5K	4Hz~80kHz	160 / 380	270 / 7	0.21	300B, EL-156, KT-88, 6550A, 350B, KT-66, EL-34, 6L6GC
XE-60-3.5	60 @30Hz	3.5K	4Hz~100kHz	130 / 280	280 / 8	0.23	—
XE-45-8	45	8K	5Hz~50kHz	230 / 550	200 / 5	0.24	6L6GC, 7591, CV-807, 6T6
XE-45-5	45	5K	5Hz~70kHz	140 / 340	260 / 6	0.24	6CA7, 6L6GC, 2A3, 6B4G

Notes:

- All models except XE-65 have SG (Screen Grid) tap.
- X-5P has a 1.4Ω secondary tap; with 8Ω load on this tap, primary impedance becomes ~5.5kΩ.
- XE-60 and XE-45 series include cathode NFB winding, usable for overall NFB.
- Case: X series = light gray leather-tone with cage-type R cover. XE-60/XE-45 = gray hammer-net finish.

Single-Ended Types — Secondary: 4Ω, 8Ω, 16Ω

Model	Power (W)	Primary Z _p (Ω)	Response (-3dB)	Primary L (H) Min/Max	DC Current Max (mA)	Loss @16Ω (dB)	Recommended Tubes
X-10S	40	10K	20Hz~55kHz	65 / 80	130	0.25	VT-4C, UV-211, 845
X-5S	40 @30Hz	5K	18Hz~70kHz	35 / 42	200	0.23	PX-25, PX-25A, DA-30, 50
X-3.5S	40 @30Hz	3.5K	15Hz~80kHz	28 / 38	250	0.22	300B, PX-25, 50
X-2.7S	40 @30Hz	2.7K	15Hz~80kHz	25 / 30	300	0.20	300B, 2A3

XE-60-3.5S	30	3.5K	20Hz~100kHz	20 / 26	170	0.20	300B, 50, PX-25
XE-60-2.5S	30	2.5K	20Hz~100kHz	15 / 20	180	0.21	2A3, 300B
XE-60-10SNF	40 @40Hz	10K	30Hz~50kHz	40 / 45	90	0.24	UV-211A, 845
XE-60-5SNF	40 @40Hz	5K	25Hz~70kHz	24 / 26	140	0.21	50, PX-25
XE-60-3SNF	20	3K	20Hz~80kHz	18 / 23	170	0.22	300B, 2A3
XE-20-600S	20	600	30Hz~100kHz	2.2 / 3.0	320	0.34	6C33C

Notes:

- X-10S is a long-size model (180mm height) with balanced proportions.
- XE-60-S series has SG tap. XE-60-SNF has NFB winding.
- XE-20-600S secondary: 4Ω, 6Ω, 8Ω, 16Ω.
- Case: Gray hammer-net finish (X series has cage-type R cover).

Single-Ended Universal Output Transformer (with SG Tap)

Model	Power	Impedance Primary → Secondary	Response (- 3dB)	Primary L (H) Min/Max	DC Current (mA)	Loss (dB)	Recommended Tubes
XE-20S (20W @50Hz)	20W	5K → 8, 16	35Hz~70kHz	16 / 18	160	0.26	300B, 50
		3.5K → 8, 16	35Hz~70kHz			0.33	PX-25, DA-30
		2.5K → 8, 16	25Hz~90kHz			0.33	VT-52, 2A3
	—	—	20Hz~90kHz			0.47	350B, KT-88, KT-66, 6550A

- Case: Gray hammer-net finish.

Output transformers are critical components that determine the sound quality of tube amplifiers. The X and XE series are TANGO's flagship products, recommended with confidence as ultimate output transformers. They utilize the excellent magnetic properties of grain-oriented Orient Hi-B material in a cut-core construction, combined with high-quality insulation materials. Advanced know-how and modern technology deliver wide bandwidth, low distortion, and high-grade performance.

Dimensions (mm) — X / XE Series (Enclosed Type)

Model	A	B	Height	a	b	Weight (kg)
X-10S	125	125	180	80	80	7.7
X-8P, X-5P, X-3.5P, X-5S	125	125	138	80	80	6.4
X-3.5S, X-2.7S	125	125	138	80	80	6.4
XE-20, XE-45	83	78	104	60	55	2.3
XE-60 / XE-65	110	100	114	80	80	4.0

OUTPUT TRANSFORMERS — Additional Series**Single-Ended (Permalloy Core) — Secondary: 4Ω, 6Ω, 8Ω, 16Ω**

Model	Power (W)	Primary Z _p (Ω)	Response (- 3dB)	Primary L (H) Min/Max	DC Current (mA)	Loss (dB)	Recommended Tubes
NY-15-3.5S	15 @30Hz	3.5K (SG)	20Hz~45kHz	23 / 30	200	0.41	300B, PX-25, 50

- Dimensions same as XE-60. Gray hammer-net finish.

Single-Ended (Orient Core) — Secondary: 4Ω, 8Ω, 16Ω

Model	Power (W)	Primary Zp (Ω)	Response (-3dB)	Primary L (H) Min/Max	DC Current (mA)	Loss (dB)	Recommended Tubes
FW-150-10SR	40	10K (SG)	25Hz~35kHz	40 / 53	130	0.27	VT-4C, UV-211, 845
FW-150-35SR	40 @40Hz	3.5K (SG)	20Hz~80kHz	23 / 45	250	0.23	300B, PX-25, EL-34
FX-50-7S	30	7K	25Hz~70kHz	30 / 50	130	0.22	VT-62×5, UV-211, 845
FX-50-5S	30	5K	25Hz~70kHz	25 / 36	170	0.23	DA-30, PX-25, PX-25A, 50
FX-50-3.5S	30 @40Hz	3.5K	25Hz~80kHz	18 / 27	200	0.23	300B, PX-25, 50
FX-50-2.5S	30	2.5K	20Hz~130kHz	14 / 21	250	0.26	300B, 2A3
FW-20-14S	20	14K	30Hz~35kHz	40 / 80	65	0.28	801A, VT-62
FW-20-7S	20	7K	30Hz~60kHz	24 / 30	120	0.24	VT-62×5, 6AQ5, 6F6
FW-20-1.2S	20 @60Hz	1.2K	30Hz~60kHz	4.5 / 6	240	0.33	6C41C, E130L
H-5S	10 @80Hz	5K (SG)	60Hz~80kHz	11 / 17	65	0.40	7189, 6BQ5
M-705	7 @80Hz	5K (SG)	45Hz~70kHz	13 / 18	60	0.43	6BQ5, 6V6

• M-705 secondary: 4Ω, 6Ω, 8Ω. Dimensions same as NC-18 etc.

Push-Pull (Orient Core) — Secondary: 4Ω, 8Ω, 16Ω

Model	Power (W)	Primary Zp (Ω)	Response (-3dB)	Primary L (H) Min/Max	DC Current Total (mA)	Loss (dB)	Recommended Tubes
FW-100-5R	100 @30Hz	5K	5Hz~50kHz	170 / 680	350	0.30	300B, EL-156, KT-88, 6550A
FW-100-5	100	5K	5Hz~50kHz	170 / 680	350	0.30	250B, KT-66, EL-34, 6L6GC
FW-100-3.5R	100 @30Hz	3.5K	5Hz~60kHz	100 / 490	420	0.30	—
FW-100-3.5	100	3.5K	5Hz~60kHz	100 / 490	420	0.30	—
FX-50-16G	50 @30Hz	16K (SG×L)	9Hz~50kHz	550 / 2600	140	0.32	VT-62, 801A
FW-50-5	50	5K	5Hz~60kHz	170 / 640	260	0.30	KT-88, 6550A, EL-34, KT-66
FW-50-3.5	50 @30Hz	3.5K	5Hz~80kHz	100 / 440	330	0.30	6L6GC, 6B4G, 2A3, VT-52
FX-40-10	40 @45Hz	10K	4Hz~40kHz	300 / 900	180	0.27	VT-62, VT-25, 6F6, 6V6
FX-40-8	40	8K	4Hz~50kHz	280 / 580	200	0.24	6V6, 6L6GC, 6G4A, 6F6
FX-40-5	40	5K	4Hz~80kHz	170 / 350	260	0.24	2A3, 6B4G, 6CA7, 6L6GC
CRD-8	25 @50Hz	8K	10Hz~60kHz	85 / 210	160	0.30	7189A, 6BQ5, 6V6
CRD-5	25	5K	10Hz~100kHz	50 / 130	200	0.30	6B4G, 2A3, 6BN8

• FX-50-16G has 4.5G 3×7P secondary tap. FW-100-5R/3.5R have cage-type R cover. FX-50-16G has light gray leather-tone case.

Dimensions (mm) — Additional Series

Model	A	B	Height	a	b	Weight (kg)
FW-150	125	125	138	80	80	6.2
FW-100	125	125	114	80	80	5.9

FX-50-5S/3.5S, FX-50-7S/2.5S, FW-50	117	117	104	80	80	4.6~5.2
FX-40, FW-20	83	78	104	60	55	2.3
CRD	83	75	80	60	55	1.6
H-5S	65	65	70	50	50	0.9

OUTPUT TRANSFORMERS — Universal & Preamp Types

Single-Ended Universal Output Transformers (SG Tap)

Model	Power	Impedance Primary → Secondary	Response (- 1dB)	Primary L (H) Min/Max	DC Current (mA)	Loss (dB)	Recommended Tubes
FW-20S	20W @55Hz	5K → 8	50Hz~70kHz	12 / 18	160	0.34	350B, KT-88, KT-66, VT-52, 2A3, 6B4G
	@45Hz	3.5K → 8	35Hz~80kHz				
	@40Hz	2.5K → 8	25Hz~90kHz				
U-808	20W @50Hz	5K → 8, 16	50Hz~50kHz	11 (21) / 21 (25)	130	0.50	KT-88, 6550A, KT-66, 71A, 7591, 6L6, 2A3, EL34
	@40Hz	3.5K → 8, 16	35Hz~60kHz				
	@35Hz	2.5K → 4, 8	25Hz~65kHz				
U-708	10W @30Hz	2K → 4, 8	20Hz~65kHz	14 / 18	—	0.80	6F6, 6AC5, 6BQ5, 6V6, 7591, EL34
	@70Hz / 60Hz	7K / 5K → 6, 8	55Hz~45kHz / 40Hz~60kHz				
U-608	6W @80Hz	5K → 4, 8	80Hz~70kHz	10 / 16	65	0.35	6F6, 6AC5, 6BQ5, 6V6, 6BM8, 6AR5
		2.5K → 16					

• U-608 has no SG tap. FW-20S and U-708 use Orient core. FW-20S dimensions on previous page.

Push-Pull Types (Small) — Secondary: 4Ω, 8Ω, 16Ω

Model	Power (W)	Primary (Ω)	Response (- 1dB)	Primary L (H) Min/Max	DC Current (mA)	Loss (dB)	Recommended Tubes
U15-8	15 @60Hz	8K	15Hz~100kHz	50 / 230	160	0.30	7189A, 6BQ5, 6V6
U15-5	15	5K	15Hz~120kHz	45 / 140	160	0.30	2A3, 6BM8, 6CA7(T)
U13-10	13	10K	30Hz~50kHz	60 / 270	100	0.36	6AR5, 6AQ5, 6BQ5(T)
U13-8	13 @60Hz	8K	20Hz~75kHz	50 / 230	130	0.33	6BQ5, 6V6
U13-5	13	5K	20Hz~130kHz	35 / 140	160	0.34	6BM8

Dimensions: W94(70) × D83(70) × H85(84) mm | Mounting: W68(52) × D65(56) mm | Weight: 1.8 (1.4) kg | Mounting screws: 4mm.

Preamp Output Transformers (Magnetically Shielded)

Model	Primary Z (Ω)	Secondary Z (Ω)	Turns Ratio (1st:2nd)	Response	DC Current (mA)	Max Output Voltage	Notes
NP-406N (Push-Pull 1st)	40K (R-P same)	600 (CT)	1:0.123 (Full 1st:Full 2nd)	4Hz~30kHz @10kΩ 15Hz~35kHz @40kΩ (-1dB)	40 (2nd side) Max 51	3Vrms @30Hz	Permalloy core Low distortion at normal levels

NP-216N (Push or Single)	20K (5K Split)	600 (150 Split)	1:0.18	20Hz~30kHz (-2dB) @20kΩ, 5mA	12	10Vrms @40Hz	Permalloy core
NP-206 (Single or Push)	20K (5K Split)	600 (150 Split)	1:0.186	20Hz~30kHz (-2dB) @20kΩ, 10mA	20	30Vrms @40Hz	Orient Hi-B cut core High output
NP-8 (Single or Push)	10K (2.5K Split)	600 (CT)	1:0.245	5Hz~50kHz (-2dB) @10kΩ, 5mA	20	30Vrms @30Hz	Orient Hi-B cut core High output

• NP-406N & NP-216N: Permalloy core for low distortion at normal levels. • NP-206 & NP-8: Orient Hi-B cut core for high output capability. • Dimensions same as NC-18 etc. (see later pages).

POWER TRANSFORMERS

Square Case Types (MS-D / ME Series) — Magnetically Shielded

Model	Primary	Secondary 1 (HT)	Secondary 2	Secondary 3 (Filament)	Recommended Use
MS-505	100V	0-360~380V 0.3A (Bridge) DC500mA	0-75~150V 0.18A (Bridge) DC100mA	6.3V 6.3V 6.3V 6.3V 4A each	KT-88, 6550A PP×2, KT-66, EL-156
MS-450D / DR	100V	0-20-300~340V 0.85A (Bridge) DC450mA	70V 60mA + 6.3V 4A	6.3V 6.3V 4A each	KT-88, 6550A PP×2, KT-66, EL-156
MS-380D / DR	100V	0-20-220-420~440V 0.7A (Bridge) DC380mA	70V 60mA + 6.3V 4A	6.3V 6.3V 4A each	KT-88, 6550A PP×2
MS-330D	100V	0-10-145~165~185V 1.2A (Doubler) DC330mA	60V 150mA + 6.3V 3.5A	6.3V 6.3V 3.5A / 2A	KT-88 PP, 6CA7, 6L6GC PP×2
MS-UVD	100V	0-370~400V 0.6A (Doubler) DC160mA	150-0-150V 50mA + 10V 5A	10V 10V 5A each	UV-211A, UV-845 SX2
MS-210DR / LH	100V	370-0-370V 0.37A (Bridge) DC210mA	150-0-150V 50mA + 10.5V 5A	10.5V 10.5V 5A each	UV-211A
ME-275	100V	320~280-0-179-280~320V AC 0-275V / DC CT 300mA Si 260mA	5V 0.25A + 6.3V 5.2A / 3A	0.25-6.3V 5.2A / 3A	2A3, 6B4G (Lug terminals)
ME-225	100V	400~360-0-100-360~400V AC 225mA / DC CT 250mA Si 210mA	5V 0.5A + 6.3V 3.3A	0.5-6.3V 3.3A each	300B, KT-88, KT-66 PP Mono (Lug)
ME-211	100V	370-0-370V 0.22A (Bridge) DC120mA	150-0-150V 50mA + 10V 5A + 6.3V 2A / 3A	10V / 6.3V 5A / 2A / 3A	UV-211A Single/Mono

• MS-505, MS-450DR, MS-380DR, MS-210DR: R-type (rounded corners). • MS-505 case: Light gray leather-tone to match PP output transformer series. • MS-210DR-LH: Gray hammer-net to match X-10S single-ended output transformer. • ME series: Same gray hammer-net finish as XE-60.

Chassis-Mount / Flat Types (Lug) — Magnetically Shielded

Model	Primary	Secondary 1 (HT)	Secondary 2 / 3	Recommended Use
MS-330	100V	0-10-145~165~185V 1.2A (Doubler) DC330mA	60V 150mA + 6.3V 3.5A	6CA7 PP×2
MS-400	100V	0-115~125V AC1.4A (Doubler) DC400mA	320V 100mA + 70V 100mA + 7V 7A + 6.3V 3A	6C33C OTL-E (Lug)
MS-360	100V	10-10-240~260~280V 0.57A (Bridge) DC300mA	80V 60mA + 330V 100mA + 2.5V 5.2A	2A3, 6B4G PP×2
MS-250CT	100V	450~400-0-90-400~450V AC250mA / DC CT 220mA Si 180mA	5V 4A + 5V 2A + 0.6-3~10V 4A	300B SX2
MS-200CT-A	100V	360~320-0-120-320~360V AC250mA / DC CT 200mA Si 180mA	3V 3A + 0.4-5~0.6-3~10V 3A	300B, PX-25 PP Mono / PP×4

MS-160	100V	320~280-0-70-280~320V AC150mA / DC CT 160mA Si 145mA	5V 3A + 2.5V 3A	2A3 PP / SX2
MS-105	100V	480~250-0-250~480V DC CT 110mA Si 100mA	0.5-6.3V 3A + 7.5V 2A	801A, VT-62 SX2
MS-140	100V	380~350~0-90~350~380V AC0- 14A / DC 145mA Si 135mA	0-5~7.5V 2.5A + 5V 3A + 6.3V 2A	VT-62, 300B SX2

• MS-330, 360, 250CT, 200CT-A available on request in square case to match output transformer color scheme. • Orient core used in many models.

Preamp Power Transformers (Lug / Terminal Board)

Model	Primary	HT Secondary	Filament	Notes
EV-3S	100V	260-0-260V AC35mA / DC Si 35mA	15V 1.5A (DC 0.9A) + 0-5~6.3V 2A / 1A	SR shielded, case type, choke also usable
CV-2	100V	260V AC30mA / Bridge DC20mA	15V 1.5A (DC 0.9A)	Cut core, side-mount type

POWER TRANSFORMERS — Terminal Board & Lug Types

Terminal Board Type (伏型)

Model	Primary	HT Secondary	Filament 1	Filament 2 / 3	Recommended Use
ST-220	100V	280~250-0-250~280V AC220mA / DC 220mA Si 210mA	0-5~6.3V 3A	6.3V 2.5A / 1.2A	6BQ5, 6V6 PP×2 / 6B4G, VT-52 SX2
LH-150	100V	300~280-0-280~300V AC140mA / DC 150mA Si 140mA	5V + 0-5V	6.3V 3A	6BQ5 PP / SX2, 6V6
N-12	100V	250~220-0-220~250V AC120mA / DC 120mA Si 120mA	0-5~6.3V 2A	6.3V 2.5A	6BQ5 PP×2, 6BM8

Lug Type (伏型) — Many with Magnetic Shielding (SR)

Model	Primary	HT Secondary	Filament / Other	Notes / Use
MX-520	100V	0~10~160~180~200V AC0.95A (Bridge) DC520mA	300V 100mA + 6.3V 6.5A	SR shielded, 6C33C SX2
ST-350	100V	0~175~350V 0.65A (Bridge) DC350mA	70V 0.1A + 6.3V 5A	EL-34, 6L6GC, 350B PP×2
MX-280	100V	320~280-0-70-280~320V AC280mA / DC 300mA Si 260mA	0~2.5~6.3~5V 5.2A	SR, 2A3/6B4G, 6L6, VT-52
MX-175	100V	450~400~360-0~360~400~450V AC/DC (Choke input 250mA / Condenser 170mA)	5V 3A + 6.3V 3A	SR, 2A3/6B4G PP×2, KT88/KT66 PP
MX-165	100V	530~400~250-0-250~400~530V AC150mA / DC 5R4G 170mA	5V 3A + 7.5V 4.5A + 6.3V 3A	SR, VT-62, VT-25, 10
MX-205	100V	320~280-0~70-280~320V AC205mA / DC 210mA Si 200mA	5V + 6.3V 3A / 2A	6BQ5, 6V6 PP×2, 6F6, 6L6
MX-270	100V	180~160-0~160~180V AC270mA / DC 280mA Si 260mA	5V + 6.3V 3A / 2A	SR, 6C41C / EL30L SX2
ST-230	100V	0~7.5~105~120~135V AC0.83A DC230mA	36V 0.36A + 6.3V 2A	6BQ5/6BM8 PP×2, 6L6GC SX2
MX-135	100/105V	280~250-0-250~280V AC0.135A / DC 140mA Si 130mA	5V + 6.3V 2A	6BQ5/6V6 PP / SX2

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PH-120	100V	280~250-0-250~280V AC120mA / DC 120mA Si 110mA	0-5~6.3V 2A / 1.2A / 3A	6BQ5/6V6 PP, 6F6
PH-100 / S	100V	280~250-0-250~280V AC100mA / DC Si 100mA	0-5~6.3V 2A / 2.5A	PH-100: 7189A/6BQ5; PH-100S: SR preamp
PH-70	100V	280~250-0-250~280V AC70mA / DC Si 70mA	0-5~6.3V 2A / 3A	6BQ5, 6AR5, 6V6, 6AQ5
ST-55S	100/110V	0~20-280~340V 100mA (Bridge) DC55mA	0-6.3~12.6V 2.5A DC1.5A + 0-3.15~6.3V	Preamp, SR shielded
ST-30S	100V	260-0-260V AC30mA / DC Si 30mA	0-15~17V 2A (DC1.2A) + 6.3V 1A	Preamp, SR shielded

• Many MX/ST/PH models available on request in square case matching output transformer colors. • SR = Magnetically shielded (steel case).

Dimensions (mm) — Power Transformers

Model Group	A	B	C	Mounting	Chassis Hole	Weight (kg)
MS-400 / MX-520	120	105	110	36×95	76×88	6.5
MS-330/360/250CT/200CT-A / MX-280/175/165	120	105	95~100	32×95	76×88	5.3~5.7
MS-160/105/140 / MX-205/270	110	96	84	30×87	70×78	3.8
ST-350	115	100	100	28×95	76×85	5.2
ST-230 / ST-220	107	93	84	28/35×87	70×78	3.6~3.7
LH-150	99	83	80	35×82	73×58	2.9
N-12 / PH-100 / PH-70 / MX-135	88~93	76~79	67~73	25~30×72	62×53~59	2.1~2.8
ST-55S	93	79	73	26×72	62×53	2.3
ST-30S	82~83	70	62~76	23~25×65	55~58×46~48	1.4~1.5

CHOKES & COILS

Square Case Chokes (Choke Input Rectification)

Model	Rating	Safe Current	DCR @20°C	Max AC Input (EAC=1)	Ripple Current @1mm
CH-20-150D	20H 150mA	200mA	210 Ω	700V	35mA
CH-12-200D	12H 200mA	260mA	120 Ω	600V	50mA
CH-5-300D	5H 300mA	350mA	45 Ω	500V	100mA

• In choke input, higher AC voltage increases hum and leakage flux compared to capacitor input. • Ripple current is proportional to input AC voltage; lower EAC reduces ripple. • Standard: Black. On request: Light gray leather-tone (PP match) or gray hammer-net (SE match). • Withstand voltage: AC 2kV 1 min.

Filter Chokes (After Capacitor Input Rectification)

Model	Rating	Safe Current	DCR	Notes
MC-15-150D	15H 150mA	200mA	155 Ω	□ High-grade square case
MC-10-200D	10H 200mA	260mA	95 Ω	□ High-grade square case
MC-5-250D	5H 250mA	330mA	67 Ω	□ High-grade square case
MC-3-350D	3H 350mA	450mA	42 Ω	□ High-grade square case
MC-1.5-500D	1.5H 500mA	650mA	20 Ω	□ High-grade square case
EC-20-120	20H 120mA	140mA	300 Ω	Iron cover, magnetically shielded
EC-10-180	10H 180mA	200mA	150 Ω	Iron cover, magnetically shielded
EC-4-280	4H 280mA	300mA	60 Ω	Iron cover, magnetically shielded
0.1mH3.5	0.1mH 3.5A	4A	0.2 Ω	—
0.1H1200	0.1H 1.2A	1.5A	1.9 Ω	—
0.7H500	0.7H 500mA	600mA	10 Ω	—

1H400	1.2H 400mA	460mA	17 Ω	—
3H250	3H 250mA	300mA	44 Ω	—
10H130	10H 130mA	150mA	165 Ω	—
10H100 / C-110	10H 100mA	120mA	160~200 Ω	C series
C-112 / C-115	10H 120~150mA	150~190mA	165~135 Ω	C series
C-512 / C-515 / C-520 / C-525	5H 120~250mA	140~290mA	100~82 Ω	C series

• □ = High-grade square case. © = SR magnetically shielded. • Low DC magnetization inductance drop. Iron cover provides magnetic shielding.
 • Minimal long-term insulation degradation. • Withstand voltage: AC 2kV 1 min. • Dimensions for MC/EC: W80(70)×D80(70)×H93(84) mm, mounting W66(52)×D63(56) mm, weight 1.8(1.4) kg.

DRIVER / INPUT TRANSFORMERS & SPECIAL CHOKES

Driver/Input Transformers — Cut Core, Magnetically Shielded

(For strong drive of output tubes. DC superposition possible on primary.)

Model	Primary Z _p (Ω)	Turns Ratio (1st:2nd)	Response (-2dB @4V)	Max DC (mA)	Primary L (H @ DC)	Max Output Voltage	Driver Example
NC-10 (2nd SE or PP)	5K	1:1+1	40Hz~30kHz (rp=5kΩ, lb=10mA)	15	30H @10mA	200Vrms (G+G) @50Hz	6350# (6SN7 class)
NC-14 (2nd SE or PP)	5K	1+1:1+1	25Hz~40kHz (rp=5kΩ, lb=15mA)	30	50H @15mA	160Vrms (G+G) @40Hz	6SN7 etc.
NO-15 (2nd SE)	10K	1:2	35Hz~35kHz (rp=10kΩ, lb=5mA)	15	60H @5mA	150Vrms @50Hz	6SN7 (rp=rs=12kΩ)
NC-16 (2nd SE or PP)	7K	1+1:2+2	25Hz~20kHz (rp=7kΩ, lb=7mA)	15	70H @7mA	200Vrms (G+G) @40Hz	6SN7 (rp=5~10kΩ)
NC-18 (2nd SE or PP)	8K	1+1:1.5+1.5	25Hz~25kHz (rp=8kΩ, lb=10mA)	15	80H @10mA	200Vrms (G+G) @35Hz	6SN7 (rp=5~10kΩ)
NO-20 (2nd SE)	5K	1:1	18Hz~80kHz (rp=5kΩ, lb=20mA)	30	60H @20mA	150Vrms @10Hz	EL34(T) etc. (rp=1~10kΩ)
NC-19N (2nd SE or PP)	10K	1+1:1.5+1.5	35Hz~40kHz (rp=10kΩ, lb=5mA)	8	70H @5mA	120Vrms (G+G) @50Hz	6SN7 (rp=5~10kΩ)

• NC-19N uses Permalloy core. NO-20 dimensions same as CH-D, weight 2.0 kg.

Push-Pull Primary / Push-Pull Secondary Driver Transformers

Model	Primary Z _p (Ω)	Turns Ratio (1st:2nd)	Response (-1dB @4V)	Primary L (5V 50Hz)	Rated DC (mA)	Max Output @40Hz DC	Driver Example
NC-22	5K	1+1:1+1	5Hz~40kHz	300H	100	3 / 400Vrms	6V6(T), 6F6(T), EL34(T)
NC-9	5K	1+1:2+2	20Hz~25kHz	140H	80	2 / 250Vrms	6V6(T), 6F6(T), EL34(T)

• NC-22 dimensions same as CH-D, weight 1.8 kg.

Line Input Transformers for Main Amplifier (Permalloy Core, Shielded)

Secondary: Single-Ended or Push-Pull

Model	Primary Z (Ω)	Turns Ratio (1st:2nd)	Response (-1dB @0.3V)	Max Output @30Hz	Primary L (1V 50Hz)
NN-11	600 (CT)	1:4+4	3Hz~30kHz	60Vrms	55H
NN-7	600 (CT)	1:2+2	3Hz~30kHz	30Vrms	55H
NN-6	600 (CT)	1:1+1	3Hz~120kHz	15Vrms	55H

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Special Chokes (Cut Core / EL Core, Shielded)

Model	Rating	Safe Current	DCR	Notes
TC-30-50	30H 50mA	80mA	485 Ω	Cut core (TC series)
TC-160-15W	160H 15mA (40H 30mA parallel)	20mA (40mA)	1160 Ω (290 Ω)	Cut core, plate choke usable
TC-60-35W	60H 35mA (15H 70mA parallel)	50mA (100mA)	730 Ω (183 Ω)	Cut core, plate choke usable
TC-10-130W	10H 130mA (2.5H 280mA parallel)	150mA (300mA)	130 Ω (33 Ω)	Cut core
TC-5-180W	5H 180mA (1.3H 360mA parallel)	200mA (400mA)	76 Ω (19 Ω)	Cut core
SC-5-150	5H 150mA	170mA	85 Ω	EL core (SC series)
SC-3-200	3H 200mA	220mA	50 Ω	EL core

• () values when windings connected in parallel. • TC-30-50, TC-160-15W, TC-60-35W usable as plate chokes.

株式会社 平田電機製作所
(Hirata Electric Manufacturing Co., Ltd.)
Head Office: 1-24-7 Nishiochiai, Arakawa-ku, Tokyo 116-0011, Japan
TEL: +81-3-3800-2251 | Factory: Kyoto / Maebashi

Note: Specifications, dimensions, and ratings are subject to change without notice for product improvement. Mounting dimensions do not include mounting screws. Original Japanese catalog: August 1996