

"MT" Series Amorphous Saturable Cores (Low Loss Type)

Brand New

1. Features

Lower Temperature Rise

The new "MT" series of saturable cores, with 30% lower core loss than our "MS" series are well suited for use in power supplies with higher switching frequency ($\geq 250\text{kHz}$).

High efficiency

When "MT" series cores are used as Magnetic Amplifiers (Mag-Amps) in power supplies, they provide higher efficiency at no load and need lower reset current than the same sized "MS" core.



2. Characteristics (Typical Value)

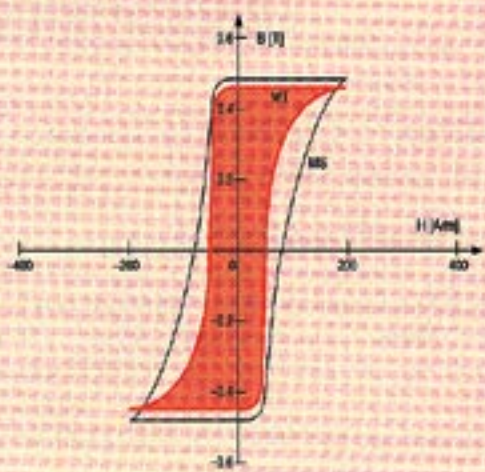


Fig 2-1 Hysteresis Loops of Core Materials at 500kHz

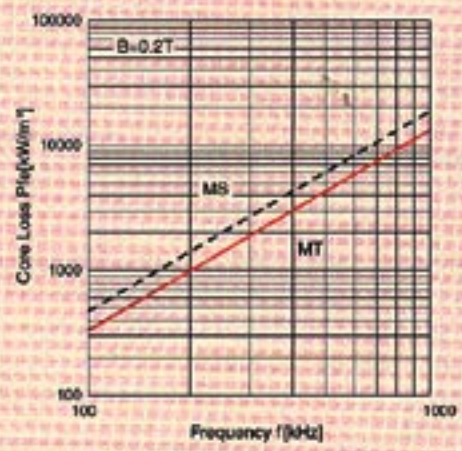


Fig 2-2 Frequency Characteristics of Core Loss

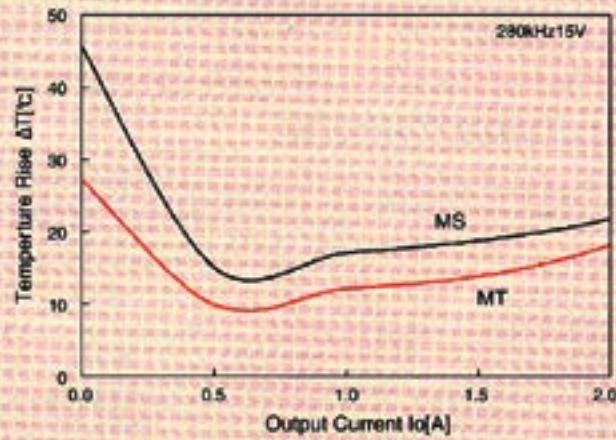


Fig 2-3 Comparison of Core Temperature Rise in a Power Supply

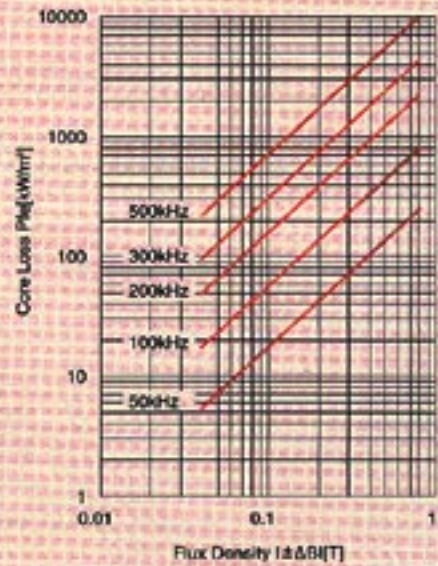


Fig 2-4 Characteristics of Core Loss in "MT" Series

3. Applications

- Magnetic amplifiers for high frequency switching power supplies
- Oscillating transformers for self-exciting inverters
- Other kinds of saturable reactors

4. Standard Specifications

Core Material : Cobalt based amorphous alloy. (TOSHIBA material designation "AMT")

Core Dimensions & Magnetic Characteristics

Type No.	Finished Dimensions ^{*1}			Effective Core Cross Section ^{*2} S[mm ²]	Mean Flux Path Length ^{*2} ℓ[mm]	Handling Power ^{*2} σc · Aw [μWb · mm ²]	Total Flux ^{*3} σc[μWb]	Coercive Force ^{*4} Hc[A/m]	Rectangular Ratio ^{*4} Br/Bm[%]	Insulating Covers ^{*5}
	O.D. [mm]	I.D. [mm]	Height [mm]							
MT7 x 4 x 3W	9.1	3.3	4.8	3.04	18.8	21	3.34	20max	94min	Black Resin Casing
MT8 x 7 x 4.5W	9.5	5.8	6.6	1.43	23.6	33	1.58			
MT9 x 7 x 4.5W	10.5	5.8	6.6	3.04	25.1	70	3.34			
MT10 x 6 x 4.5W	11.5	4.8	6.6	6.28	25.1	98	6.91			
MT10 x 7 x 4.5W	11.5	5.8	6.6	4.56	26.7	105	5.01			
MT12 x 8 x 4.5W	13.8	6.8	6.6	6.28	31.4	201	6.91			
MT14 x 8 x 4.5W	15.8	6.8	6.6	9.42	34.6	301	10.36			
MT15 x 10 x 4.5W	16.8	8.8	6.6	7.85	39.3	426	8.63			
MT18 x 12 x 4.5W	19.8	10.8	6.6	9.42	47.1	777	10.36			
MT21 x 14 x 4.5W	22.8	12.8	6.6	10.99	55.0	1280	12.08			
MT12 x 8 x 3W	13.7	6.4	4.8	4.19	31.4	118	4.60	Red Resin Casing		
MT15 x 10 x 3W	16.7	8.4	4.8	5.23	39.3	258	5.75			

*1: Tolerance ± 0.2mm

*2: Reference Value

*3: Tolerance ± 15%

*4: Measuring Condition 100kHz, 80A/m, RT

*5: UL94V-0 Approved Material

Temperature Range

Storage Temperature	-20 ~ +50 °C	Ambient Temperature
Operating Temperature	-40 ~ +120 °C	Case Surface Temperature

5. Standard Applications

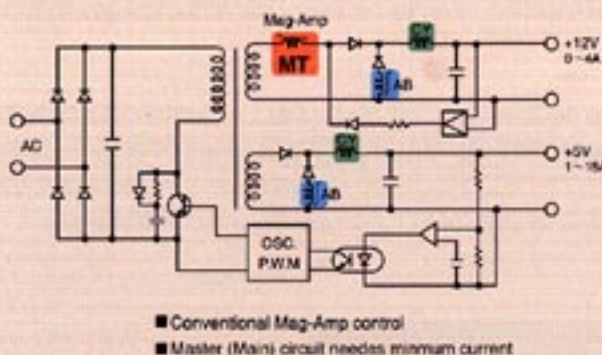


Fig 5-1 Master-Slave Control

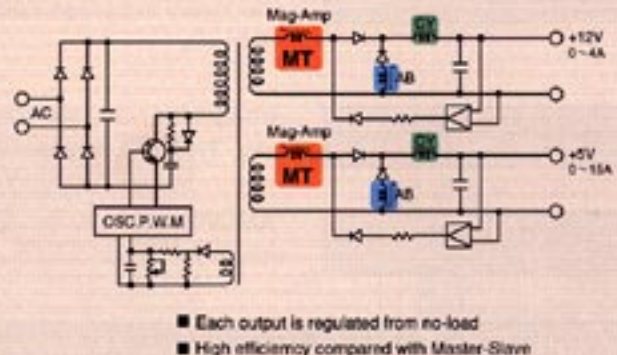


Fig 5-2 Full-Mag-Amp Control