

SWITCHING MODE POWER TRANSFORMERS

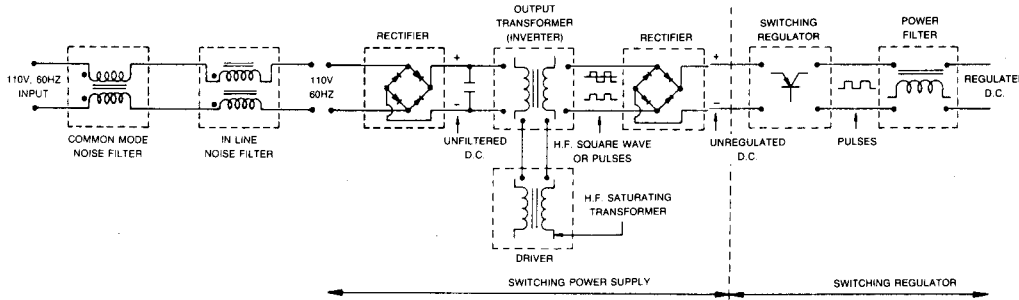
APPLICATIONS

TV, VCR, copy machines, audio equipment, printers, CRT display, game machines, home computers, automobiles (EGI power supply circuit)

SPECIFICATIONS:

Block diagram of typical block filter.

Block diagram of typical switching power supply and regulator.



Power Supply Component	Desired Core Characteristics	Available Shapes
EMI FILTER		
(1) Common mode noise filter	High permeability	1. Ferrite toroids 2. Ferrite shapes (Ungapped)
(2) In-line noise filter	High saturation (B max)	1. Molypermalloy power cores 2. 50 Ni- 50 Fe powder cores 3. Gapped ferrites 4. Powdered iron 5. Si-Fe laminations 6. Kool Mu Powder cores
DRIVER		
	Low Losses	1. Bobbin cores 2. Ni-Fe tape wound cores 3. Ferrite toroids 4. Semi-conductor chips
OUTPUT TRANSFORMER		
(1) High frequency (20) KHz & above)	Low Losses	1. Ferrites (a) pot cores (b) shapes (c) toroids
(2) Low frequency (10 KHz & below)	High Saturation (B max)	2. Ni-Fe tape wound cores 3. Amorphous tape wound cores 4. Cut Cores (a) Ni-Fe (b) Amorphous 5. Ni-Fe laminations
REGULATING INDUCTOR		
(1) Mag. amp regulator	High Saturation (B max)	1. Ni-Fe tape wound core 2. Cobalt-base amorphous tape wound cores 3. Square loop ferrite toroids
(2) Filter inductor		1. Molypermalloy powder cores 2. 50 Ni-50FE powder cores 3. Gapped ferrites 4. Powdered iron 5. Cut cores 6. Si-Fe laminations 7. Kool Mu powder cores

FERRITE CORE SELECTION FOR SWITCHING MODE TRANSFORMER

Ferrite core selection listed by typical power handling capacities (watts) (square wave operation) (see note)

WATTAGE			E Cores	EC Cores	ETD Cores	PQ Cores	CUT Cores	POT Cores	RM Cores	Toroids Cores	EP Cores
@f = 20KHz	@f = 50KHz	@f = 100KHz									
5	8	13	E1187					1811		1306	17
7	10	17					2311			1605	
12	10	27				2016			RM8		
13	20	30	E2425					2213			
15	22	32									
17	27	39									
18	28	43				2020	2318			2106	
19	30	48									20
26	42	58								2206	
28	45	65							RM10	2109	
30	49	70				2620		2616			
33	53	80									
40	61	95	E30				3019				
42	70	100				2625					
48	75	110								2212, 2507	
60	100	150	E375	EC35		3220		3019	RM12		
70	110	170			ETD34					2908	
105	160	250	E40								
110	190	280				3230		3622			
120	180	290		EC41							
130	180	260								3806	
140	210	340	E21								
150	240	380			ETD39						
190	300	470								3610	
200	310	500	E625								
210	350	530				3535					
220	350	530								3813	
230	350	550	42/15								
260	400	600								3615	
280	430	650	E50	EC52				4229			
300	450	700	42/20		ETD44			4529			
340	550	850				4040					
360	580	870								3825	
410	650	1000	E75		ETD49					4416	
550	800	1300	55/21; E60								
650	1000	1600								4916, 4920	
700	1100	1800	55/25								
850	1300	1900								4925	
900	1500	2000		EC70							
1000	1600	2500								6113	
1000	1700	2700									
1400	2500	3200								4932	
1600	2600	3700								7313	
2800	4200	6500								8613	

Note: Assuming Core Loss to be Approximately 100mW/cm³.
 B levels used in this chart are: @ 20 KHz—2000 gauss; @ 50 KHz—1300 gauss; @ 100 KHz - 900 gauss
 Customer variations and specifications are welcome. All different style of core and bobbins are available.