

# MATERIAL GRADES

Ferrites are magnetic ceramic materials composed of metal oxides with Iron oxide as their main constituent. Ferrites have now been firmly established as one of the most important class of magnetic materials and are indispensable in Electrical, Electronics and Communication Engineering. Ferrites which exhibit temporary magnetic properties under the influence of an electrical field are called Soft Ferrites. Soft Ferrites allow easy magnetisation and also rapid reversal of the magnetisation in response to rapid alteration of energising field.

MATERIAL CHARACTERISTICS						
PARAMETERS	SYMBOL	UNIT	CONDITION @	MSB-5S	MGQ5C	HM070
Ac Permeability			25°C	3000 <sup>±25%</sup>	5300 <sup>±25%</sup>	7000 <sup>±25%</sup>
Saturation Flux Density	Bm	mT	25°C	480	440	430
		Gauss	25°C	4800	4400	4300
Residual Flux Density	Br	mT	25°C	180	100	120
		Gauss	25°C	1800	1000	1200
Coercive Force	Hc	A/m	25°C	11.9	8.0	8
		Oe	25°C	0.15	0.10	0.1
Core Loss	Pc	mw/cc	16KHz/150mT/100°C 25KHz/200mT/100°C 100KHz/200mT/100°C 16KHz/200mT/40°C	75 Max.		
Relative Loss Factor 0.1 MHz	$\tan \delta / \mu_{iac}$ X 10 <sup>-6</sup>		0.01 MHz	≤ 2.5	≤ 15	≤ 5.0
Curie Temperature	T	°C		≥ 210	≥ 150	≥ 130
Density	Ds	gm/cc		4.85	4.85	4.8

Core Form OR 30 - 20-10H

# MATERIAL GRADES

MATERIAL CHARACTERISTICS							
PARAMETERS	SYMBOL	UNIT	CONDITION @	MSB-7C	MSB5F(H)	MSB3C	HP400
Ac Permeability			25°C	2400 ±25%	1800 ±25%	2200 ±25%	2400±25%
Saturation Flux Density	Bm	mT	25°C	500	500	510	490
		Gauss	25°C	5000	5000	5100	4900
Residual Flux Density	Br	mT	25°C	150	160	180	140
		Gauss	25°C	1500	1600	1800	1400
Coercive Force	Hc	A/m	25°C	12.7	15.9	15	12
		Oe	25°C	0.16	0.2	0.18	0.14
Core Loss	Pc	mw/cc	16KHz/150mT/100°C 25KHz/200mT/100°C 100KHz/200mT/100°C 16KHz/200mT/40°C	40max 95max 600max	60max	500max	400max
Relative Loss Factor 0.1 MHz	$\tan \delta / \mu_{iac}$ X 10 <sup>-6</sup>		0.01 MHz	≤2.0	≤4.0	≤3.5	≤5.0
Curie Temperature	T	°C		≥220	≥220	≥200	≥200
Density	Ds	gm/cc		4.85	4.85	4.85	4.9

### MATERIAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Temperature	Value	Tolerance	Unit
Initial Permeability		f = 10kHz	25	3500	± 25%	—
Loss Factor	tan	f = 100 kHz	25	10 X 10 <sup>-6</sup>		—
Saturation Flux Density	Bs	f = 10kHz	25	475		mT
		= 800 A/m	100	350		mT
Curie Temperature	Tc			190		°C
Density	d			4.8		gm/cc
Power Loss	Pcv	f = 100 kHz	25	400		mW/cc
		B = 200mT	60	630		mW/cc
			100	850		mW/cc
		f = 25 kHz	25	80		mW/cc
		B = 200mT	60	95		mW/cc
			100	140		mW/cc

