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Suggested Magnetics

GENERAL DESCRIPTION

It is the purpose of this document to provide a list of suggested magnetics for use with the Microchip LAN family of products. The manufacturer, part number, package, number of cores, operating temperature range, and configuration are included for each suggested magnetic. Each product family table is categorized into "Qualified Magnetics" and "Suggested Magnetics" as defined below:

QUALIFIED MAGNETICS

Magnetics listed under this heading have been tested in order to verify proper operation with the specific Microchip device listed with it. The testing accomplished has been either formal UNH 100BASE-TX PMD testing, UNH 10BASE-T MAU testing and/or in-house testing performed by Microchip. The designer can assume with a high degree of confidence, that with proper PCB design techniques, the combinations of Microchip devices and magnetics presented in this category will perform to the highest standards.

SUGGESTED MAGNETICS

Magnetics listed under this heading have *not* been tested in order to verify proper operation with the specific Microchip device listed with it. This category of magnetic has been evaluated by the contents of the vendor supplied data sheet and legacy performance only. However, the designer can assume with some degree of confidence, that with proper PCB design techniques, the combinations of Microchip devices and magnetics presented in this category will perform to high standards. Magnetics in this category have been targeted for future Qualification Testing. Magnetics in this category may or may not advance to the Qualified Magnetics category. It is important to note, there is the remote possibility that a Suggested Magnetic, upon failing Qualification Testing, may be removed from the Suggested Magnetic category at any time by Microchip.

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LAN8187, LAN8700, LAN8710, LAN8720, LAN9131, LAN9132, LAN9210, LAN9211, LAN9215, LAN9217, LAN9218, LAN9220, LAN9221, LAN9303, LAN9303M, LAN9311, LAN9312, LAN9313, LAN9420, LAN9500, LAN9500A, LAN9512, LAN9513, LAN9514					
Qualified Magnetics					
Vendor	**Part Number**	**Package**	**Cores**	**Temp**	**Configuration**
Pulse	H1102	16-pin SOIC	4	0° - +70° C	HP Auto-MDIX
Halo	TG110-RP55N5	16-pin SOIC	4	0° - +70° C	HP Auto-MDIX
Halo	HFJ11-RP26E-L12RL	Integrated RJ45	4	0° - +70° C	HP Auto-MDIX POE
Delta	RJSE1R5310A	Integrated RJ45	4	0° - +70° C	HP Auto-MDIX
Suggested Magnetics					
Pulse	J0011D01B	Integrated RJ45	4	0° - +70° C	HP Auto-MDIX
Midcom	000-7219-35	Cardbus	4	0° - +70° C	HP Auto-MDIX
Bothhand	TS6121C	16-pin SOIC	4	0° - +70° C	HP Auto-MDIX
Bothhand	LU1S041X-43	Integrated RJ45	4	0° - +70° C	HP Auto-MDIX

LAN8187i, LAN8700i, LAN8710i, LAN8720i, LAN9215i, LAN9218i, LAN9221i, LAN9303i, LAN9303Mi, LAN9311i, LAN9313i, LAN9420i, LAN9500i, LAN9500Ai, LAN9512i, LAN9513i, LAN9514i					
Qualified Magnetics					
Vendor	**Part Number**	**Package**	**Cores**	**Temp**	**Configuration**
Pulse	HX1188	16-pin SOIC	4	-40° - +85° C	HP Auto-MDIX
Halo	TG110-RPE5N5	16-pin SOIC	4	-40° - +85° C	HP Auto-MDIX
Halo	HFJ11-RPE26E-L12RL	Integrated RJ45	4	-40° - +85° C	HP Auto-MDIX POE
TDK	TLA-6T717W	Integrated RJ45	4	-40° - +85° C	HP Auto-MDIX
Delta	LFE8505T	16-pin SOIC	4	-40° - +85° C	HP Auto-MDIX
Suggested Magnetics					
Midcom	000-7090-37R	16-pin SOIC	4	-40° - +85° C	HP Auto-MDIX
Midcom	MIC66211-5171T-LF3	Integrated RJ45	4	-40° - +85° C	HP Auto-MDIX POE
Elec & Eltek	820-M0323R	16-pin SOIC	4	-40° - +85° C	HP Auto-MDIX

LAN7500					
Qualified Magnetics					
Vendor	**Part Number**	**Package**	**Cores**	**Temp**	**Configuration**
Halo	HFJ11-1G02E	Integrated RJ45	8	0° - +70° C	HP Auto-MDIX
Suggested Magnetics					
Halo	TG1G-S002NZRL	24-pin SOIC-W	8	0° - +70° C	HP Auto-MDIX

LAN8810i, LAN7500i					
Suggested Magnetics					
Vendor	**Part Number**	**Package**	**Cores**	**Temp**	**Configuration**
Halo	TG1G-E012NZRL	24-pin SOIC-W	8	-40° - +85° C	HP Auto-MDIX

LAN89218, LAN89303					
Suggested Magnetics					
Vendor	**Part Number**	**Package**	**Cores**	**Temp**	**Configuration**
Halo	TG110-AE050N5	16-pin SOIC	4	-40° - +85° C	HP Auto-MDIX
Halo	TG110-AEX50N5LF	16-pin SOIC	4	-40° - +125° C	HP Auto-MDIX

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LAN83C185, LAN9115, LAN9116, LAN9117, LAN9118					
Qualified Magnetics					
Vendor	**Part Number**	**Package**	**Cores**	**Temp**	**Configuration**
Bel Fuse	S558-5999-46	16-pin SOP	5	0° - +70° C	10/100 Legacy
Elec & Eltek	820-00278H	16-pin SOP	5	0° - +70° C	10/100 Legacy
Suggested Magnetics					
Pulse	H1086	16-pin SOP	5	0° - +70° C	10/100 Legacy
Pulse	H1012	16-pin SOP	5	0° - +70° C	10/100 Legacy
Pulse	H1138	16-pin SOP	5	0° - +70° C	10/100 Legacy
Pulse	PE-68515L	16-pin SOP	5	0° - +70° C	10/100 Legacy
Pulse	H1089	16-pin SOP	4	0° - +70° C	10/100 Legacy
Pulse (Valor)	ST6118T	16-pin SOP	5	0° - +70° C	10/100 Legacy
Halo	TG22-3506NL	16-pin SOP	5	0° - +70° C	10/100 Legacy
Halo	TG22-3506ND	16-pin SOP	5	0° - +70° C	10/100 Legacy
Midcom	000-6241-37R	16-pin SOP	5	-40° - +85° C Note 1	10/100 Legacy
Midcom	000-6181-37R	16-pin SOP	5	-40° - +85° C Note 1	10/100 Legacy
YCL	20PMT04	16-pin SOP	5	0° - +70° C	10/100 Legacy
YCL	PT163035	16-pin SOP	5	0° - +70° C	10/100 Legacy
Transpower (Coev)	HB614	16-pin SOP	5	0° - +70° C	10/100 Legacy
Transpower (Coev)	HB614-LP	16-pin SOP	5	0° - +70° C	10/100 Legacy
XFMRS	XFATM6	16-pin SOP	5	-40° - +85° C Note 1	10/100 Legacy
TDK	TLA-6T103	16-pin SOP	5	0° - +70° C	10/100 Legacy
TDK	TLA-6T103LF	16-pin SOP	5	0° - +70° C	10/100 Legacy
Delta	LF8200M	16-pin SOP	5	+25° C	10/100 Legacy

LAN91C111					
Qualified Magnetics					
Vendor	**Part Number**	**Package**	**Cores**	**Temp**	**Configuration**
Pulse	J1012F21C	Integrated RJ45	4	0° - +70° C	10/100 Legacy
Halo	TG110-S050N2	16-pin SOIC	4	0° - +70° C	HP Auto-MDIX
Suggested Magnetics					
Bel Fuse	S558-5999-U7	16-pin SOIC	4	0° - +70° C	HP Auto-MDIX
Bel Fuse	0810-1X1T-03	Integrated RJ45	5	0° - +70° C	10/100 Legacy
Bel Fuse	0817-1G1T-21	Integrated RJ45	4	0° - +70° C	HP Auto-MDIX
Pulse	H1086	16-pin SOP	5	0° - +70° C	10/100 Legacy
Pulse	H1012	16-pin SOP	5	0° - +70° C	10/100 Legacy
Pulse	PE-68515L	16-pin SOP	5	0° - +70° C	10/100 Legacy
Pulse	H1089	16-pin SOP	4	0° - +70° C	10/100 Legacy
Pulse (Valor)	ST6118T	16-pin SOP	5	0° - +70° C	10/100 Legacy
Pulse	H1102	16-pin SOIC	4	0° - +70° C	HP Auto-MDIX
Pulse	J1012F01C	Integrated RJ45	4	0° - +70° C	10/100 Legacy
Halo	TG22-3506NL	16-pin SOP	5	0° - +70° C	10/100 Legacy
Halo	TG22-3506ND	16-pin SOP	5	0° - +70° C	10/100 Legacy
Halo	TG110-S055N2	16-pin SOIC	4	0° - +70° C	HP Auto-MDIX
Halo	TG110-S050P1	CardBus	2	0° - +70° C	Single Channel
Halo	TG110-S050P2	CardBus	4	0° - +70° C	HP Auto-MDIX
Halo	TG110-S050J2	CardBus	4	0° - +70° C	HP Auto-MDIX
Midcom	000-6241-37R	16-pin SOP	5	-40° - +85° C Note 1	10/100 Legacy
Midcom	000-6181-37R	16-pin SOP	5	-40° - +85° C Note 1	10/100 Legacy
Midcom	JFM24111-0101	Integrated RJ45	4	0° - +70° C	HP Auto-MDIX
YCL	20PMT04	16-pin SOP	5	0° - +70° C	10/100 Legacy
YCL	PH163112	16-pin SOIC	4	+25° C	HP Auto-MDIX
PCA	EPF8033GM	16-pin SOP	5	0° - +70° C	10/100 Legacy
PCA	EPF8143S	16-pin SOIC	4	0° - +70° C	HP Auto-MDIX
Tamura	TTC-8139	16-pin SOIC	4	0° - +70° C	HP Auto-MDIX

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LAN91C111I					
Suggested Magnetics					
Vendor	**Part Number**	**Package**	**Cores**	**Temp**	**Configuration**
Pulse	HX1188	16-pin SOIC	4	-40° - +85° C	HP Auto-MDIX
Pulse	HX1198	16-pin SOIC	4	-40° - +85° C	HP Auto-MDIX
Halo	TG110-E050N5	16-pin SOIC	4	-40° - +85° C	HP Auto-MDIX
Halo	TG110-E055N5	16-pin SOIC	4	-40° - +85° C	HP Auto-MDIX

LAN91C96 @ +5V Operation					
Suggested Magnetics					
Vendor	**Part Number**	**Package**	**Cores**	**Temp**	**Configuration**
Bel Fuse	0556-3873-03	16-pin DIL	4	0° - +70° C	10BASE-T (LPF)
Bel Fuse	A556-2006-00	16-pin DIL	3	0° - +70° C	10BASE-T (LPF)
Bel Fuse	A556-2006-03	16-pin DIL	4	0° - +70° C	10BASE-T (LPF)
Bel Fuse	A556-2006-DE	16-pin DIL	2	0° - +70° C	10BASE-T (LPF)
Bel Fuse	S556-5999-02	16-pin SOP	4	0° - +70° C	10BASE-T (LPF)
Bel Fuse	S556-5999-DE	16-pin SOP	2	0° - +70° C	10BASE-T (LPF)
Bel Fuse	A553-1006-AB	16-pin DIL	3	0° - +70° C	10BASE2 & 5
Bel Fuse	S553-1006-AE	16-pin SOIC	3	0° - +70° C	10BASE2 & 5
Bel Fuse	S556-9003-11	PCMCIA	4	0° - +70° C	10BASE-T (LPF)
Pulse	PE-65421	16-pin DIL	4	0° - +70° C	10BASE-T (LPF)
Pulse	PE-68026	16-pin SOP	4	0° - +70° C	10BASE-T (LPF)
Pulse	PE-68011	16-pin SOP	4	0° - +70° C	10BASE-T (LPF)
Pulse	PE-68056	16-pin SOP	3	0° - +70° C	10BASE-T (LPF)
Pulse	PE-64103	16-pin DIL	3	0° - +70° C	10BASE2
Pulse	PE-64108	16-pin DIL	3	0° - +70° C	10BASE2 & 5
Pulse	PE-65728	16-pin SOIC	3	0° - +70° C	10BASE2 & 5
Pulse (Fil Mag)	78Z034C	16-pin DIL	3	0° - +70° C	10BASE-T (LPF)
Pulse (Fil Mag)	78Z1120B-01	16-pin DIL	2	0° - +70° C	10BASE-T (LPF)
Pulse (Fil Mag)	78Z1122B-01	16-pin DIL	4	0° - +70° C	10BASE-T (LPF)
Pulse (Fil Mag)	23Z91SM	16-pin SOIC	3	0° - +70° C	10BASE2 & 5
Pulse (Valor)	FL1012	16-pin DIL	3	+25° C	10BASE-T (LPF)
Pulse (Valor)	PT3877	16-pin DIL	2	+25° C	10BASE-T (LPF)
Halo	FD02-101G	16-pin DIL	2	0° - +70° C	10BASE-T (LPF)
Halo	FD12-101G	16-pin DIL	3	0° - +70° C	10BASE-T (LPF)
Halo	FD22-101G	16-pin DIL	4	0° - +70° C	10BASE-T (LPF)
Halo	TD01-1006K	16-pin DIL	3	+25° C	10BASE2 & 5
Halo	TD01-1006B	16-pin DIL	3	+25° C	10BASE2 & 5
Halo	TG01-1006N	16-pin SOIC	3	+25° C	10BASE2 & 5
Halo	TG01-1006P	PCMCIA	3	+25° C	10BASE2 & 5

LAN91C96 @ +5V Operation					
Suggested Magnetics					
Vendor	Part Number	Package	Cores	Temp	Configuration
YCL	20F001N	16-pin DIL	3	+25° C	10BASE-T (LPF)
YCL	20F001	16-pin DIL	2	+25° C	10BASE-T (LPF)
YCL	20LF43	16-pin SOP	4	+25° C	10BASE-T (LPF)
YCL	20LF43S	16-pin SOP	4	+25° C	10BASE-T (LPF)
YCL	16PT-006A	16-pin DIL	3	+25° C	10BASE2 & 5
YCL	16PT-004A	16-pin DIL	3	+25° C	10BASE2 & 5
YCL	16PT-006S	16-pin SOIC	3	+25° C	10BASE2 & 5
PCA	EPE6192G	16-pin SOP	4	0° - +70° C	10BASE-T (LPF)
PCA	EPA1885-5	16-pin SOIC	3	+25° C	10BASE2 & 5
Tamura	TTC-8128	16-pin SOP	4	0° - +70° C	10BASE-T (LPF)
Tamura	TTC-8121	16-pin SOIC	3	0° - +70° C	10BASE2 & 5

LAN91C96 @ +3.3V Operation					
Qualified Magnetics					
Vendor	Part Number	Package	Cores	Temp	Configuration
Pulse	PE-68056	16-pin SOP	3	0° - +70° C	10BASE-T (LPF)

LAN91C96I @ +5V Operation					
Suggested Magnetics					
Vendor	Part Number	Package	Cores	Temp	Configuration
Bel Fuse	A556-2006-02	16-pin DIL	4	-40° - +85° C	10BASE-T (LPF)
Pulse	EX2001	16-pin SOP	4	-40° - +85° C	10BASE-T (LPF)

Note 1: The LAN83C185, LAN9115, LAN9116, LAN9117, LAN9118, LAN91C111, LAN8187, LAN8700, LAN9210, LAN9211, LAN9215, LAN9217, LAN9218, LAN9131, LAN9132, LAN9311, LAN9312, LAN9313, LAN9420, LAN9500 are rated for the Commercial Temperature (0° - +70° C) range only.

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APPENDIX A: APPLICATION NOTE REVISION HISTORY

TABLE A-1: REVISION HISTORY

Revision Level & Date	Section/Figure/Entry	Correction
DS00003016A (03-22-19)	Replaces previous SMSC version Rev. 3.1 (06-27-11)	
Rev. 3.1 (06-27-11)	Third Table	Removed LAN8810 & LAN8820 from table heading. Heading is now "LAN7500".
	Fourth Table	Removed LAN8820i from table heading. Heading is now "LAN8810i, LAN7500i".
	Fifth Table	Removed LAN88710 from table heading. Heading is now "LAN89218, LAN89303".
Rev. 3.0 (03-15-10)	First Table	Added LAN9303, LAN9303M, LAN9500A, LAN9513
	Second Table	Added LAN9303i, LAN9303Mi, LAN9500Ai, LAN9513i
	Third Table	Added new table for LAN8810, LAN8820, LAN7500 with Halo magnetics
	Fourth Table	Added new table for LAN8810i, LAN8820i, LAN7500i with Halo magnetics
	Fifth Table	Moved down to accommodate new tables, added LAN88710, LAN89303, and new Halo magnetic
Rev. 2.97 (08-21-09)	First Table	Added LAN9512, LAN9514, LAN8710, LAN8720
	Second Table	Added LAN8710i, LAN8720i
	Third Table	Added new table for LAN89218 with Halo magnetics

Note the following details of the code protection feature on Microchip devices:

- Microchip products meet the specification contained in their particular Microchip Data Sheet.

- Microchip believes that its family of products is one of the most secure families of its kind on the market today, when used in the intended manner and under normal conditions.

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- Microchip is willing to work with the customer who is concerned about the integrity of their code.

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