



IC Selection Guide for Gigabit Ethernet Transformer Modules

Talema manufactures a broad range of Isolation Transformer Modules for 10Base-T, 100Base-T, 1000Base-T, AUI and ATM applications. Many of the modules include a common mode choke for noise attenuation matched to the specified transceiver and are designed for extended temperature range (-40°C to +85°C) applications.

ENVIRONMENT

All TALEMA International Group manufacturing facilities are RoHS compliant and all chokes, inductors and HF components are produced in an EMS facility which is certified to ISO-14001:2004.



IC Manufacturer	IC Part Number	Talema Part Number	Turns Ratio	Common Mode Choke	Shunt Inductor	Package Style L x W x H (mm) 17.5 x 16 x 5.8
Broadcom (Allayer)	AL1023	TGS-100B	1 : 1	Y	Y	24 pin SOIC
Broadcom	BCM5204, BCM5400, BCM5401	TGS-100A TGS-100B	1 : 1 1 : 1	Y Y	N Y	24 pin SOIC 24 pin SOIC
	BCM5411, BCM5421, BCM5701	TGS-100B	1 : 1	Y	Y	24 pin SOIC
Level One (Intel)	LXT1000	TGS-100A TGS-100B	1 : 1 1 : 1	Y Y	N Y	24 pin SOIC
ILucent	LU8X31, LU8X32, LU8X24FT	TGS-100B	1 : 1	Y	Y	24 pin SOIC
Marvell Semiconductor	88E1000, 88E1000S, 88E1010, 88E1010S, 88E1020, 88E1020S, 88E1040	TGS-100A TGS-100B	1 : 1 1 : 1	Y Y	N Y	24 pin SOIC
	88E1011	TGS-100A	1 : 1	Y	N	24 pin SOIC
	88E1040, 88E1040S, 88E1041, 88E1041S, 88E1042, 88E1042S	TGS-100A TGS-100B	1 : 1 1 : 1	Y Y	N Y	24 pin SOIC
National Semiconductor	DP83891	TGS-100A TGS-100B	1 : 1 1 : 1	Y Y	N Y	24 pin SOIC
	DP83861, DP83892	TGS-100B	1 : 1	Y	Y	24 pin SOIC



TGS Series • 1000Base-T Single and Dual Port Interface Transformer Modules

Features

- Supports 1:1 Turns Ratio Transceivers for long haul Gigabit Ethernet 10/100/1000Base-T
- Meets requirements of IEEE 802.3ab standard for 1000Base-T
- Modules support 4 pairs of category 5 UTP cable
- Consistent and reliable coplanarity
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C

Electrical Specifications @ 25°C

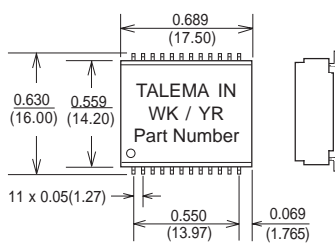
Inductance: 350µH minimum @ 100kHz, 100mV, 8mA
 Minimum isolation voltage: 1500 Vrms
 Operating Temperature Range: -40°C to +85°C
 Storage Temperature: -40°C to +125°C
 Standard Packing: Tape and Reel



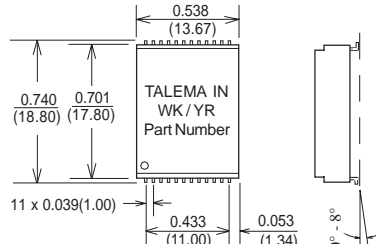
TGS Series Single and Dual Port SMD 1000Base-T Isolation Transformer Modules

Part Number	Number of Ports	Turns Ratio ±2%	Insertion Loss (dB Typ)	Return Loss (dB Min)					Crosstalk (db Min)			Differential to Common Mode Rejection (dB Min)		V _P (Vrms)	Schematic
				Tx	1-100 MHz	1-30 MHz	40 MHz	50 MHz	60-80 MHz	100 MHz	30 MHz	60 MHz	100 MHz		
TGS-100A	1	1 : 1	-1.0	-18	-18	-16	-12	-10	-45	-37	-33	-39	-33	1500	A
TGS-100B	1	1 : 1	-1.0	-18	-18	-16	-12	-10	-45	-37	-33	-39	-33	1500	B
TGS-100C	1	1 : 1	-1.1	-18	-18	-16	-12	-10	-43	-37	-33	-39	-33	1500	C
TGS-200A	1	1 : 1	-1.0	-18	-18	-16	-12	-10	-45	-40	-33	-39	-33	1500	A
TGS-200B	1	1 : 1	-1.0	-18	-18	-16	-12	-10	-45	-40	-33	-39	-33	1500	B
TGS-300D	2	1 : 1	-1.4	-16	-14.4	-13.1	-12	-10	-43.5	-37.5	-33	-40	-35	1500	D
TGS-300E	2	1 : 1	-1.4	-16	-14.4	-13.1	-12	-10	-43.5	-37.5	-33	-40	-35	1500	E
TGS-300F	2	1 : 1	-1.4	-18	-14.4	-13.1	-12	-10	-43	-37	-33	-40	-35	1500	F

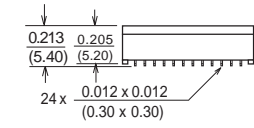
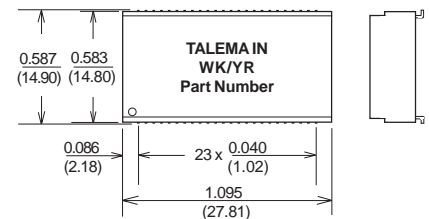
TGS-100



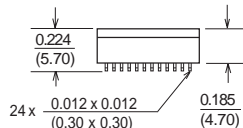
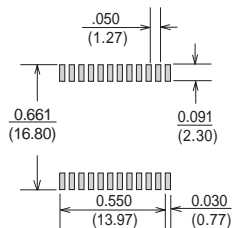
TGS-200



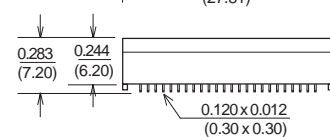
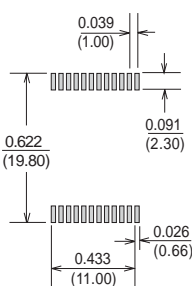
TGS-300



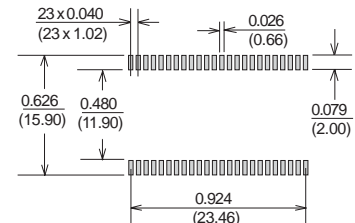
Suggested Pad Layout



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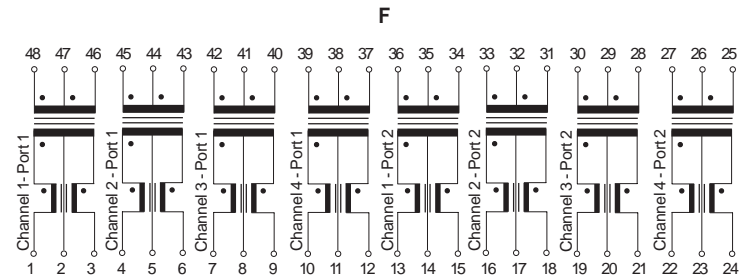
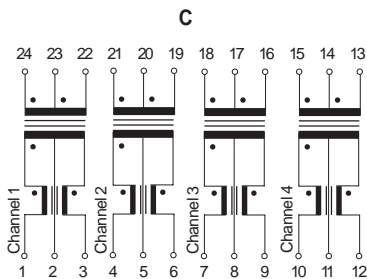
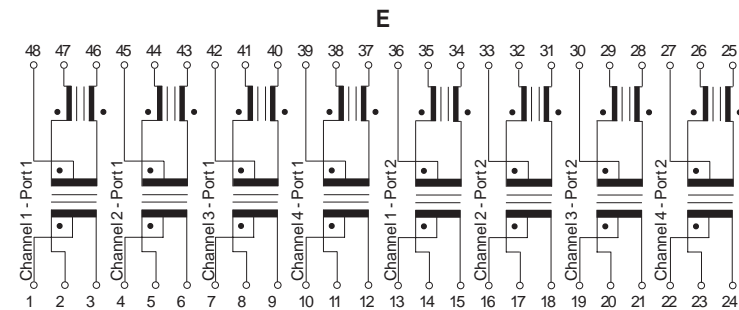
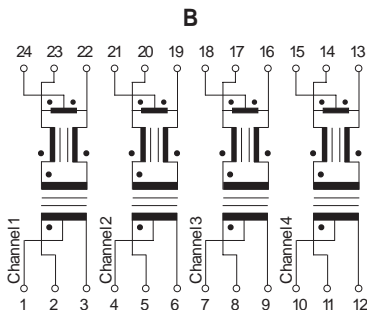
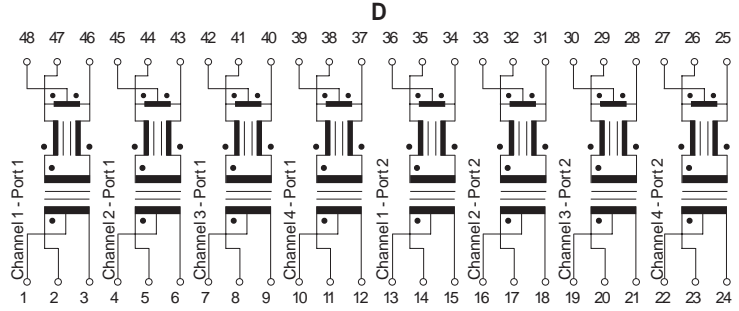
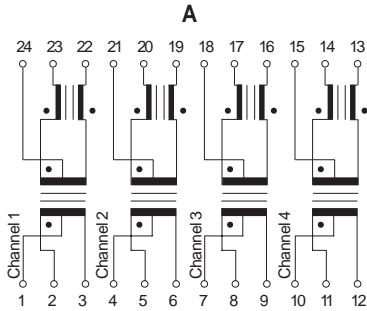
Surface coplanarity will be 0.004 (0.01) maximum
 Dimensions: Inches (Millimeters)
 Tolerance: ±0.010 (0.25) unless specified otherwise

Dimensions & Schematics • Single & Dual Port 1000Base-T Transformer Modules

Surface coplanarity will be 0.004 (0.01) maximum

Dimensions: Inches (Millimeters)
Tolerance: ± 0.010 (0.25) unless specified otherwise

Schematics



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