



## IC - Transformer Selection Guide for T1/E1/CEPT/ISDN-PRI Quad Ports

IC Manufacturer	IC Part Number	Application	Turns Ratio Pri:Sec ±2%		Talema Part Number
			Transmit	Receive	
Mindspeed (Conexant)	BT8510	T1/E1	1:1/1.26	1:2CT	MJQ-007-40
	CN8380		1:2CT	1CT2	MJQ-020-40
	BT8370, BT8375, BT8376	Better RI	1:1.36CT	1:2CT	MJQ-001-40
	BT8370, BT8375, BT8376	Low Power	1:1.15	1:2CT	MJQ-002-40
Cirrus Logic (Crystal)	61318	120 E1	1:2CT	1:1CT	MJQ-003-40
	61577	T1/E1	1:2CT	1:2CT	MJQ-006-40
	61304A/5A/535A/547A/75	T1	1:1.15	1:2CT	MJQ-002-40
	61304A/5A/535A/547A/75	75 E1	1:2CT	1:1CT	MJQ-003-40
	61304A/5A/535A/547A/75	120 E1	1:1/1.26	1:2CT	MJQ-007-40
	61582, 61583		1:1.14	1:1.14CT	MJQ-009-40
	61310, 61581		1:2CT	1:1CT	MJQ-003-40
	61881		1:1.15	1:2CT	MJQ-002-40
	61584, 61584A	IQ3	1:2CT	1:2CT	MJQ-006-40
	61584, 61582, 61583, 61583A	IQ5	1:1.14	1:1.14CT	MJQ-009-40
Maxim (Dallas)	DS2196		1:2CT	1:1CT	MJQ-003-40
	DS2151, DS2152, DS2153, DS2154		1:1.15	1:2CT	MJQ-002-40
	DS2151, DS2152, DS2153, DS2154		1:1.36CT	1:2CT	MJS-001-40
	DS2148, DS21Q48	3V	1:2CT	1:1CT	MJQ-003-40
	DS2148, DS21Q48	5V	1:1.36CT	1:2CT	MJQ-001-40
	DS21352, DS21Q352, DS21354, DS21Q354		1:2CT	1:1CT	MJQ-003-40
	DS21552, DS21Q552, DS21554, DS21Q554		1:1.15	1:2CT	MJQ-002-40
	DS21552, DS21Q552, DS21554, DS21Q554		1:1.36CT	1:2CT	MJQ-001-40
			1:2CT	1:2CT	MJQ-006-40
Exar	T5683A, 59L91, T5894, T5897, T5997	-	1:2CT	1:2CT	MJQ-006-40
	T5791, T5993, T5994, T5995		1:1/1.26	1:2CT	MJQ-007-40
	T5684, T7288, 81L27, 82L24, 82D20		1:1.36CT	1:2CT	MJQ-001-40
	83L30, 83L34, 83L38		1:2CT	1:2CT	MJQ-006-40
Infineon (Siemens)	PEB2254, PEB2255	E1/T1/J1	1CT:1.41	1CT:1.41	MJQ-016-40
	PEB22504, PEB22554	3.3V	1:2.4	1:1	MJQ-022-40
	PEB22504	5V	1:1.5	1.4:1.1	MJQ-026-40
	PEB2256	3.3V E1/T1/J1	1:2.4	1:1	MJQ-022-40
Intel (Level One)	LXT300, LXT301	-	1:2CT	1:2CT	MJQ-006-40
	LXT304, LXT305, LXT307	E1/T1	1:2CT	1:2CT	MJQ-006-40
	LXT304, LXT305, LXT307	T1	1:1.15	1:2CT	MJQ-002-40
	LXT304, LXT305, LXT307	75E1, 120E1	1:1/1.26	1:2CT	MJQ-007-40
	LXT310, LXT317, LXT318		1:2CT	1:1CT	MJQ-003-40
	LXT331	E1/T1	1:2CT	1:1CT	MJQ-003-40
	LXT331, LXT332		1:2CT	1:2CT	MJQ-006-40
	LXT331, LXT332		1:1.15	1:2CT	MJQ-002-40
	LXT334, LXT335	E1/T1	1:2CT	1:2CT	MJQ-006-40
	LXT334, LXT335	120/75 E1	1:1.36CT	1:2CT	MJQ-001-40
	LXT334, LXT335	75 E1	1:1/1.26	1:2CT	MJQ-007-40
	LXT336		1:2CT	1:2CT	MJQ-006-40
	LXT350, LXT351, LXT359	E1/T1	1:2CT	1:1CT	MJQ-003-40
	LXT350, LXT351		1:1.15	1:2CT	MJQ-002-40
	LXT360, LXT361, LXT362, LXT363	T1 / E1	1:2CT	1:1CT	MJQ-003-40
	LXT360, LXT361, LXT362, LXT363		1:1.15	1:2CT	MJQ-002-40
	LXT380/381/384/386/388	T1 / E1	1:2CT	1:1CT	MJQ-003-40
	LXT380/381/384/386/388	T1 / E1	1:2CT	1CT2	MJQ-020-40
LXT3104, LXT3108		1:2CT	1:1CT	MJQ-003-40	
Lucent	T7288, T7290A	CEPT	1:1.36CT	1:2CT	MJQ-001-40
	T7289A	DS1	1:1.15	1:2CT	MJQ-002-40
	T7688, T7690, T7698	CEPT	1:1.36	1:1.36CT	MJQ-012-40
	T7688, T7690, T7698	DS1	1:1.14	1:1.14CT	MJQ-009-40
	T7693, T7697	CEPT	1:2.42	1:2.42	MJQ-028-40
	TLIU04C1	DS1	1:1.14	1:1.14CT	MJQ-009-40
	TLIU04C1	CEPT	1:1.36	1:1.36CT	MJQ-012-40
Zarlink (Mitel)	MT9071, MT9076		1:2.42	1:2.42	MJQ-028-40
	MT9075, MT9076		1:2.4	1:1	MJQ-022-40
	MT9074, MT9075		1:2CT	1:1CT	MJQ-003-40
PMC-Sierra	PM4341, PM6341, PM4314	-	1:1.36CT	1:2CT	MJQ-001-40
	PM4318	-	1:2CT	1:2CT	MJQ-006-40
	PM4351, PM4354	Comet	1:2.42	1:2.42	MJQ-028-40

**Notes:**

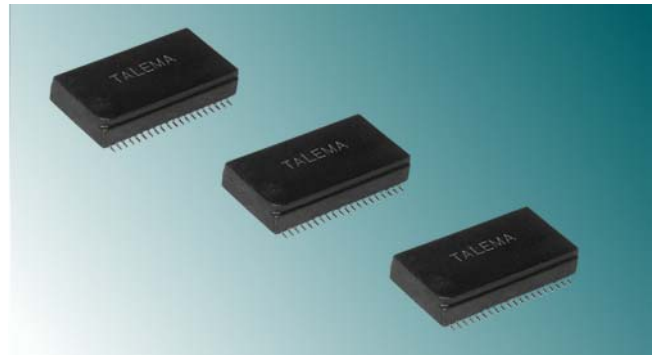
- Dallas IC's use either a 1:1.15 or a 1:1.36 ratio transformer depending on the application. Consult the Dallas application notes or contact Talema.
- P/N MJQ-007-J - To obtain a 1:1 secondary ratio connect the following secondary contacts: 40-39, 35-34, 30-29 and 25-24; a secondary ratio of 1:1.26 is obtained by connecting contacts: 40-38, 35-33, 30-28 and 25-23.



## MJQ Series • T1/CEPT/E1/PRI Transformer Modules for Quad Ports

### Features

- designed for optimum compatability with all established interface IC's - see listing on last page
- module contains eight transformers for Quad T1/E1 Ports
- SMD design provides consistent and reliable coplanarity - fully pick and place compatible
- controlled parameters ensure full compliance with ITU-T G.703 when matched with recommended IC
- ideal for all 1.544 and 2.048 Mbs interface applications
- manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- 1500Vrms minimum isolation voltage
- extended operating temperature: -40° to +85°C



- fully RoHS compliant and meets lead free reflow level J-STD-020C

### Electrical Specifications @ 25°C

Turns Ratio: **Bold** = IC side windings

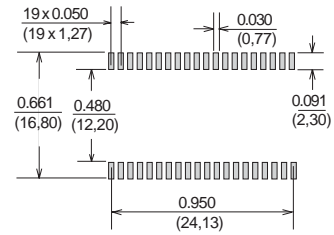
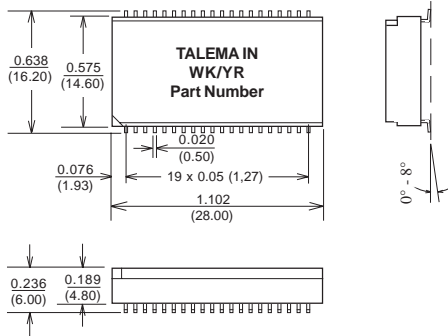
### MJQ Transformer Modules for Quad T1/E1 Ports

Part Number	Transformer	Turns Ratio (Pri:Sec +/-2%)	OCL (mH Min.)	L <sub>L</sub> (μH Max)	C <sub>www</sub> (pF Max)	DCR (mOhms)		Pins		Schematic
						Pri	Sec	Primary	Secondary	
MJQ-001-40	Transmit	<b>1:1.36CT</b>	1.2	0.6	35	390	550	24-25, 29-30, 34-35, 39-40	16-18, 11-13, 6-8, 1-3	C
	Receive	<b>1:2CT</b>	1.2	0.6	35	390	780	4-5, 9-10, 14-15, 19-20	36-38, 31-33, 26-28, 21-23	
MJQ-002-40	Transmit	<b>1:1.15</b>	1.2	0.6	35	390	450	1-2, 6-7, 11-12, 16-17	39-40, 34-35, 29-30, 24-25	A
	Receive	<b>1:2CT</b>	1.2	0.6	35	390	780	21-23, 26-28, 31-33, 36-38	18-20, 13-15, 8-10, 3-5	
MJQ-003-40	Transmit	<b>1:2CT</b>	1.2	0.6	35	390	780	1-2, 6-7, 11-12, 16-17	38-40, 33-35, 28-30, 23-25	B
	Receive	<b>1:1CT</b>	1.2	0.6	35	390	390	21-22, 26-27, 31-32, 36-37	18-20, 13-15, 8-10, 3-5	
MJQ-006-40	Transmit	<b>1:2CT</b>	1.2	0.6	35	390	780	4-5, 9-10, 14-15, 19-20	36-38, 31-33, 26-28, 21-23	C
	Receive	<b>1:2CT</b>	1.2	0.6	35	390	780	24-25, 29-30, 34-35, 39-40	16-18, 11-13, 6-8, 1-3	
MJQ-007-40	Transmit	<b>1:1/1.26</b>	1.2	0.6	35	390	490	1-2, 6-7, 11-12, 16-17	38-40, 33-35, 28-30, 23-25	B
	Receive	<b>1:2CT</b>	1.2	0.6	35	390	780	21-22, 26-27, 31-32, 36-37	18-20, 13-15, 8-10, 3-5	
MJQ-009-40	Transmit	<b>1:1.14</b>	1.2	0.6	35	390	440	1-2, 6-7, 11-12, 16-17	39-40, 34-35, 29-30, 24-25	A
	Receive	<b>1:1.14CT</b>	1.2	0.6	35	390	440	36-38, 31-33, 26-28, 21-23	3-5, 8-10, 13-15, 18-20	
MJQ-012-40	Transmit	<b>1:1.36</b>	1.2	0.4	20	390	540	1-2, 6-7, 11-12, 16-17	39-40, 34-35, 29-30, 24-25	A
	Receive	<b>1:1.36CT</b>	1.2	0.5	20	390	540	36-38, 31-33, 26-28, 21-23	3-5, 8-10, 13-15, 18-20	
MJQ-015-40	Transmit	<b>1:1.15</b>	1.2	0.6	35	390	450	1-3, 6-8, 11-13, 16-18	38-40, 33-35, 28-30, 23-25	E
	Receive	<b>1:1.15</b>	1.2	0.6	35	390	450	4-5, 9-10, 14-15, 19-20	36-37, 31-32, 26-27, 21-22	
MJQ-016-40	Transmit	<b>1CT:1.41</b>	1.2	0.6	35	420	580	1-3, 6-8, 11-13, 16-18	39-40, 34-35, 29-30, 24-25	C
	Receive	<b>1CT:1.41</b>	1.2	0.6	35	420	580	21-23, 26-28, 31-33, 36-38	19-20, 14-15, 9-10, 4-5	
MJQ-017-40	Transmit	<b>1:2</b>	1.2	0.6	35	390	780	1-3, 6-8, 11-13, 16-18	38-40, 33-35, 28-30, 23-25	E
	Receive	<b>1:2</b>	1.2	0.6	35	390	780	4-5, 9-10, 14-15, 19-20	36-37, 31-32, 26-27, 21-22	
MJQ-020-40	Transmit	<b>1:2CT</b>	1.2	0.6	35	390	780	4-5, 9-10, 14-15, 19-20	36-38, 31-33, 26-28, 21-23	C
	Receive	<b>1CT:2</b>	1.2	0.6	35	390	780	1-3, 6-8, 11-13, 16-18	39-40, 34-35, 29-30, 24-25	
MJQ-021-40	Transmit	<b>1:2</b>	1.2	0.6	35	390	780	1-2, 9-10, 11-12, 19-20	39-40, 31-32, 29-30, 21-22	D
	Receive	<b>1:2CT</b>	1.2	0.6	35	390	780	23-25, 26-28, 33-35, 36-38	16-18, 13-15, 6-8, 3-5	
MJQ-022-40	Transmit	<b>1:2.4</b>	1.0	0.5	35	390	390	1-2, 8-9, 11-12, 18-19	39-40, 32-33, 29-30, 22-23	F
	Receive	<b>1:1</b>	1.0	0.5	35	410	900	24-25, 27-28, 34-35, 37-38	16-17, 13-14, 6-7, 3-4	
MJQ-023-40	Transmit	<b>1:1.70</b>	1.2	0.8	35	390	670	1-2, 6-7, 11-12, 16-17	39-40, 34-35, 29-30, 24-25	A
	Receive	<b>1:1.36CT</b>	1.2	0.6	35	390	540	21-23, 26-28, 31-33, 36-38	18-20, 13-15, 8-10, 3-5	
MJQ-024-40	Transmit	<b>1:1.36CT</b>	1.2	0.6	35	390	540	24-25, 29-30, 34-35, 39-40	16-18, 11-13, 6-8, 1-3	C
	Receive	<b>1:1CT</b>	1.2	0.6	35	390	390	4-5, 9-10, 14-15, 19-20	36-38, 31-33, 26-28, 21-23	
MJQ-026-40	Transmit	<b>1:1.5</b>	1.0	0.5	35	390	580	1-2, 8-9, 11-12, 18-19	39-40, 32-33, 29-30, 22-23	F
	Receive	1.41:1	1.0	0.5	35	390	390	24-25, 27-28, 34-35, 37-38	16-17, 13-14, 6-7, 3-4	
MJQ-028-40	Transmit	<b>1:2.42</b>	1.2	0.6	35	390	940	1-3, 6-8, 11-13, 16-18	38-40, 33-35, 28-30, 23-25	E
	Receive	<b>1:2.42</b>	1.2	0.6	35	390	940	4-5, 9-10, 14-15, 19-20	36-37, 31-32, 26-27, 21-22	
MJQ-029-40	Transmit	<b>1:2.1CT</b>	1.2	0.6	35	390	810	1-2, 6-7, 11-12, 16-17	38-40, 33-35, 28-30, 23-25	B
	Receive	<b>1:2.1CT</b>	0.6	0.6	35	280	590	21-22, 26-27, 31-32, 36-37	18-20, 13-15, 8-10, 3-5	
MJQ-030-40	Transmit	<b>1:2.45CT</b>	1.2	0.6	35	390	960	1-2, 6-7, 11-12, 16-17	38-40, 33-35, 28-30, 23-25	B
	Receive	<b>1:2.45CT</b>	0.6	0.6	35	280	690	21-22, 26-27, 31-32, 36-37	18-20, 13-15, 8-10, 3-5	
MJQ-031-40	Transmit	<b>1:2/2.4</b>	1.0	1.0	35	410	900	1-2, 9-10, 11-12, 19-20	38-40, 33-31, 30-28, 23-21	G
	Receive	<b>1:0.79/1</b>	1.0	1.0	35	390	390	37-36, 35-34, 27-26, 25-24	3-5, 6-8, 13-15, 16-18	

# Packaging & Dimensions for SMD Quad Port Transformer Modules

## MJQ Series Quad Module Package

### Suggested Pad Layout



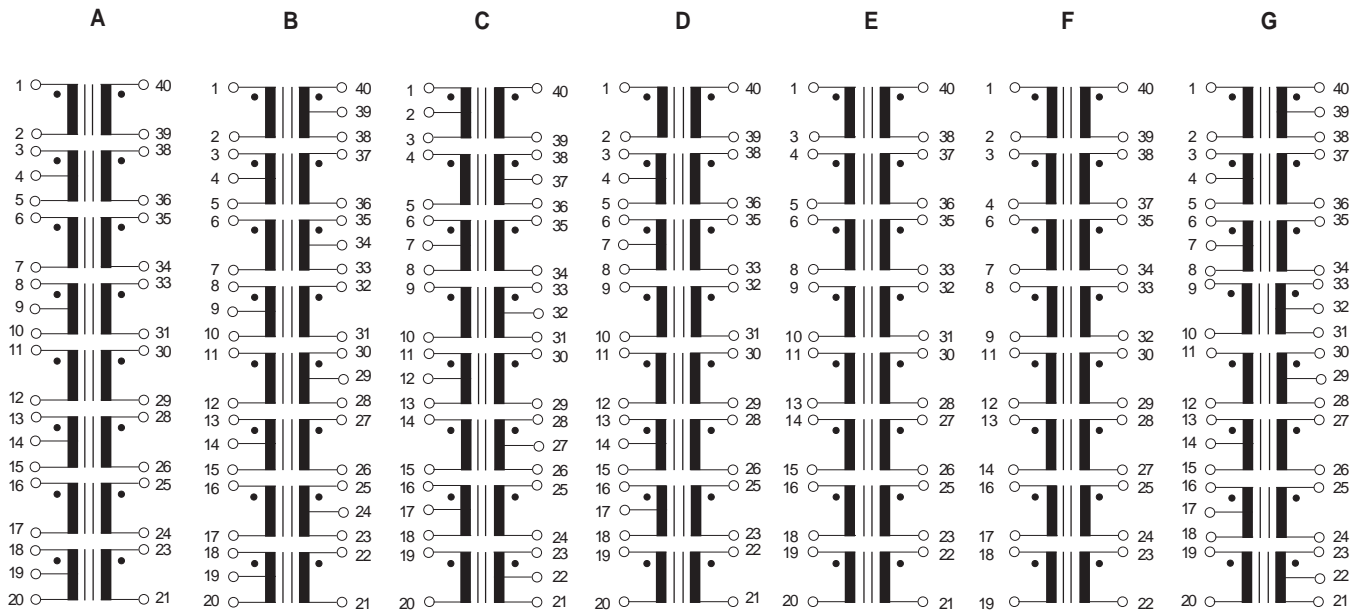
Surface coplanarity will be <math><0.004 (0.10)</math>

Weight: ~5 grams

Dimensions: Inches (Millimeters)

Tolerance:  $\pm 0.010 (0.25)$  unless specified otherwise

## Schematics



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