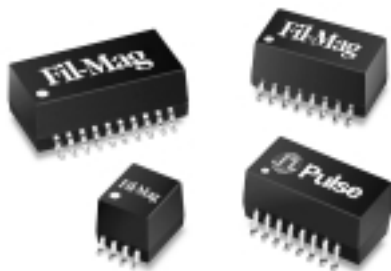


TOKEN RING ISOLATION TRANSFORMERS

Designed for 4 and 16 Mbps Applications



- ⊕ Dual low-profile surface mount packages
- ⊕ Low cost front-end solution
- ⊕ Ideal for concentrator and adapter card applications

Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

Part Number	Turns Ratio (±2%)	Sine Wave Inductance OCL (μH MIN)	Rise Time (ns MAX)	Interwinding Capacitance (pF MAX)	Leakage Inductance (μH MAX)	DC Resistance (Ω MAX)		Schematic	Mechanical
						Pri	Sec		
SURFACE MOUNT									
PE-65736	1:1	75	—	15	0.18	0.3	0.3	T1	SMT2
PE-65737	1:1.21:1:1.21	75	—	15	0.18	0.22	1.0	T1	SMT2
PE-65738	1:1	50	—	—	—	—	1.0	T5	SMT2
PE-67562	1:1:2CT dual	710	—	15	0.70	—	—	T3	SMT2
23Z110SM	1:1:2:2	75	3	14	0.30	0.2	0.4	T2	SMT4
23Z111SM	1.22:1.22:1:1 ±5%	100	3	10	0.20	0.3	0.3	T6	SMT4
23Z112SM	1:1:2:2	60	3	14	0.30	0.2	0.4	T1	SMT3
23Z116SM	1:1:1:1	75	3	20	0.60	0.6	0.6	T2	SMT4
23Z126SM	1:1:1:1 ±3%	75 ±30%	5	25	0.20	1.0	1.0	T1	SMT3
23Z133SM	1.22:1.22:1:1 ±5%	250	3	15	0.50	0.4	0.4	T1	SMT3
23Z354SM	0.5:0.5:1.22:1.22	75	—	15	0.20	0.5	0.5	T2	SMT4
23Z807SM	1:1:2:2 ±3%	225	5	15	0.30	0.4	0.4	T4	SMT1

NOTE: Transformers are packaged in tubes, unless Tape & Reel is specified. Please add the suffix "T" for all Tape & Reel orders. For example: PE-67562T.



- ⊕ IEEE 802.5 compatible
- ⊕ Single and dual low profile packages
- ⊕ Proven reliable designs
- ⊕ Recommended by Texas Instruments since 1984

Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

Part Number	Turns Ratio (±5%)	Sine Wave Inductance OCL (μH MIN)	Rise Time (ns MAX)	Interwinding Capacitance Cww (pF MAX)	Leakage Inductance LL (μH max)	DCR (Ω MAX)	Primary Pins	Schem.	Mech.
THROUGH HOLE									
PE-63838-001	1:1:2:2	500 ²	15	20 ³	0.7 ³	.80	1-2/3-4	T2	TH1
PE-64974-001	1:1:1:1	2600 ²	15	30 ¹	0.5 ¹	1.0	1-2/3-4/5-6/7-8	T1	TH2
PE-65871	1:1:1:1	500 ¹	9	20 ¹	0.2 ¹	.25	1-2/3-4	T2	TH1
PE-67537	1:1:2:2	900	—	—	—	1.2	1-2/3-4	T2	TH1
PE-67541	1:1:1:1	1200 ²	—	—	—	1.0	1-2/3-4/5-6/7-8	T1	TH2
23Z111	1.22:1.22:1:1	100 (±20%)	3.0	10	0.2	.30	1-2/3-4	T6	TH4
23Z806	1:1:1:1 ±3%	750	5.0	25	0.2	1.00	1-2/3-4/5-6/7-8	T1	TH3

NOTES:

1. Measured at 20 mVrms, 100 KHz.
2. Measured at 20 mVrms, 10 KHz.
3. Measured at 50 mV, 100 KHz.
4. Insertion Loss is 0.5 dB MAX from 1-16 MHz. Return Loss is 15 dB MIN from 10-16 MHz and 20 dB MIN from 1-5 MHz.

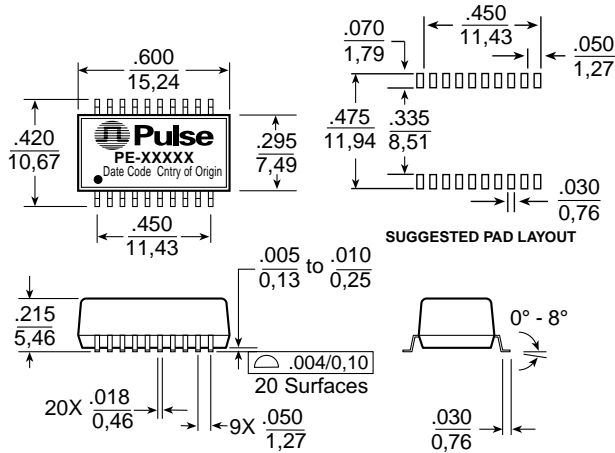
TOKEN RING ISOLATION TRANSFORMERS

Designed for 4 and 16 Mbps Applications



Mechanicals - Surface Mount

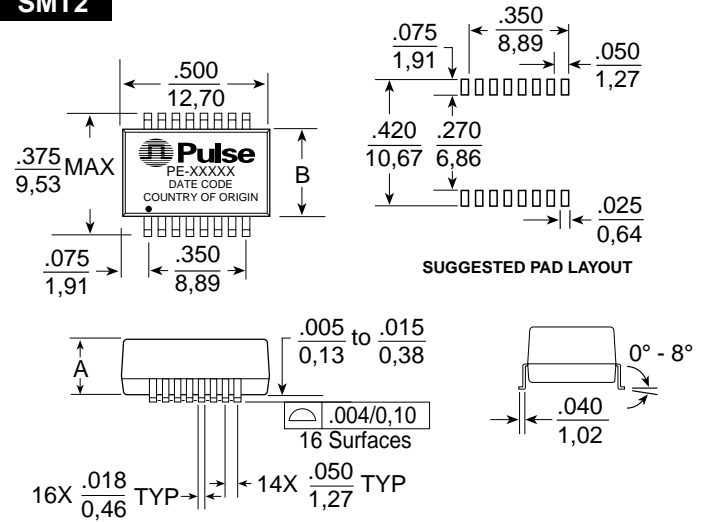
SMT1



Weight1.39 grams
Tube40/tube
Tape & Reel500/reel

Dimensions: $\frac{\text{Inches}}{\text{mm}}$
Unless otherwise specified,
all tolerances are $\pm \frac{.010}{0,25}$

SMT2



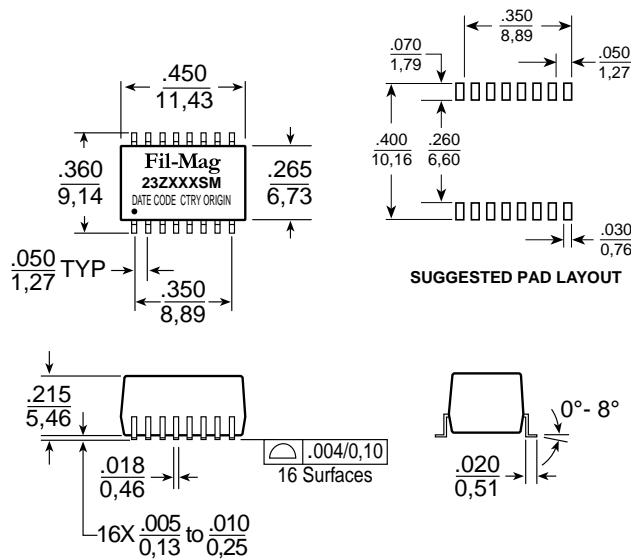
Weight1.1 grams
Tube40/tube
Tape & Reel900/reel

Dimensions: $\frac{\text{Inches}}{\text{mm}}$
Unless otherwise specified,
all tolerances are $\pm \frac{.010}{0,25}$

Dimensions: Inches (mm)

Part #	A (MAX)	B (MAX)
PE-65736	.200(5,08)	.285(7,24)
PE-65737	.200(5,08)	.285(7,24)
PE-65738	.200(5,08)	.285(7,24)
PE-67562	.245(6,22)	.270(6,86)

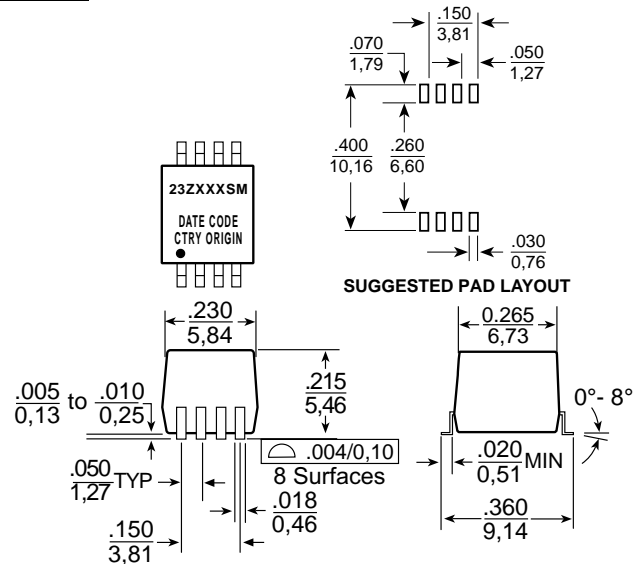
SMT3



Weight0.82 grams
Tube50/tube
Tape & Reel750/reel

Dimensions: $\frac{\text{Inches}}{\text{mm}}$
Unless otherwise specified,
all tolerances are $\pm \frac{.005}{0,13}$

SMT4



Weight0.45 grams
Tube100/tube
Tape & Reel750/reel

Dimensions: $\frac{\text{Inches}}{\text{mm}}$
Unless otherwise specified,
all tolerances are $\pm \frac{.005}{0,13}$

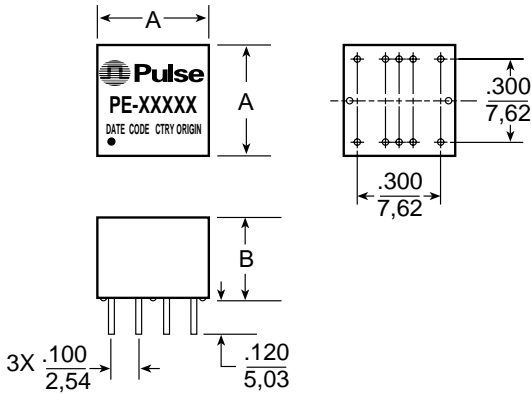
TOKEN RING ISOLATION TRANSFORMERS

Designed for 4 and 16 Mbps Applications



Mechanicals - Through Hole

TH1



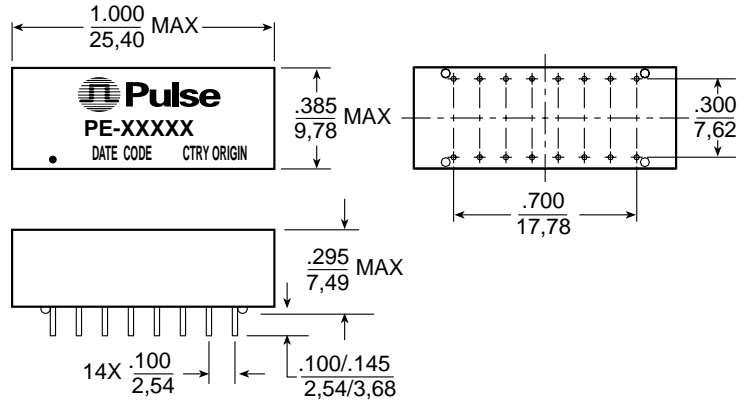
Weight1.8 grams
Tube40/tube

Dimensions: Inches (mm)

Part #	A (MAX)	B (MAX)
PE-63838-001	.500/12,70	.370/9,40
PE-65871	.500/12,70	.265/6,73
PE-67537	.400/10,16	.300/7,62

Dimensions: $\frac{\text{Inches}}{\text{mm}}$
Unless otherwise specified,
all tolerances are $\pm \frac{.010}{0,25}$

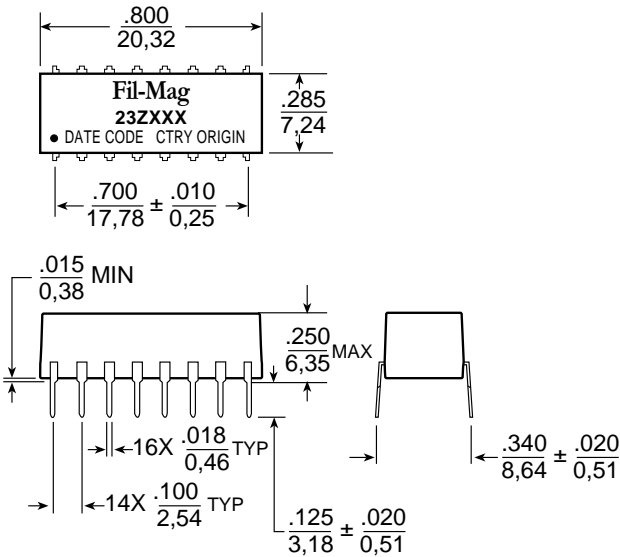
TH2



Weight3.1 grams
Tube20/tube

Dimensions: $\frac{\text{Inches}}{\text{mm}}$
Unless otherwise specified,
all tolerances are $\pm \frac{.010}{0,25}$

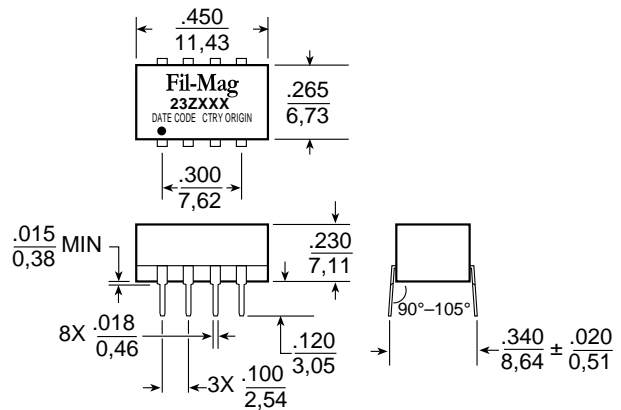
TH3



Weight1.8 grams
Tube28/tube

Dimensions: $\frac{\text{Inches}}{\text{mm}}$ Unless otherwise specified, all tolerances are $\pm \frac{.005}{0,13}$

TH4



Weight0.90 grams
Tube50/tube

Dimensions: $\frac{\text{Inches}}{\text{mm}}$ Unless otherwise specified, all tolerances are $\pm \frac{.005}{0,13}$

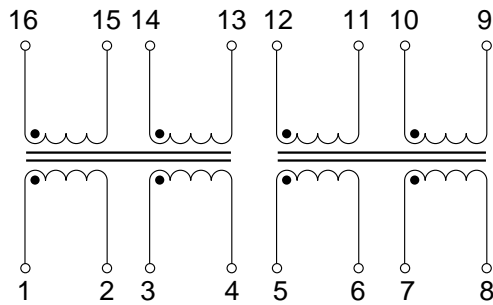
TOKEN RING ISOLATION TRANSFORMERS

Designed for 4 and 16 Mbps Applications

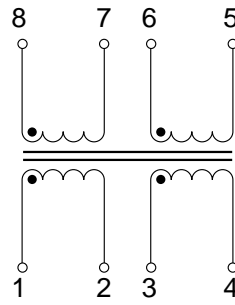


Schematics

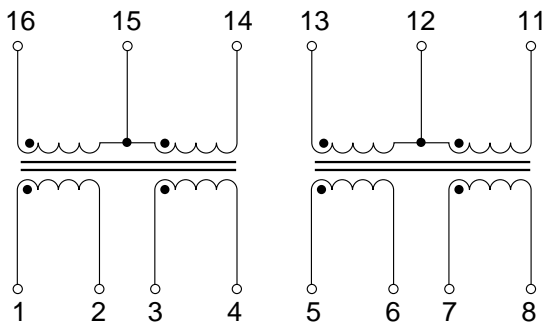
T1



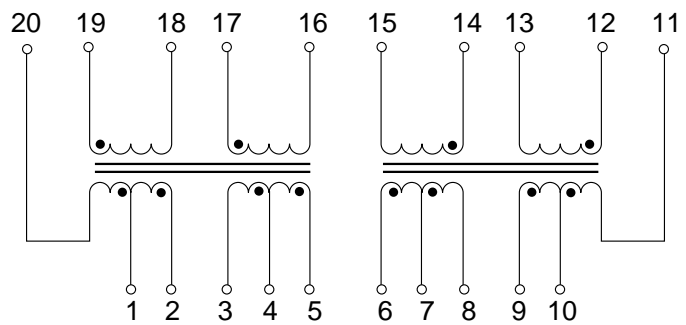
T2



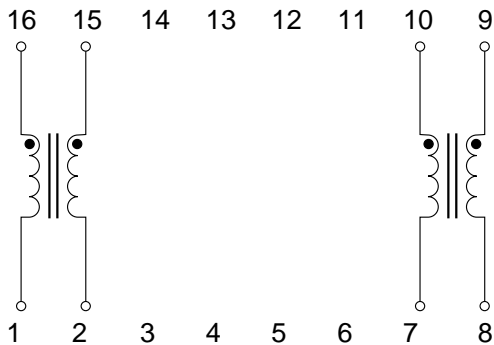
T3



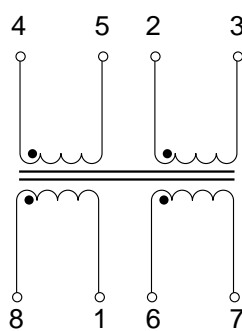
T4



T5



T6



TOKEN RING ISOLATION TRANSFORMERS

Designed for 4 and 16 Mbps Applications

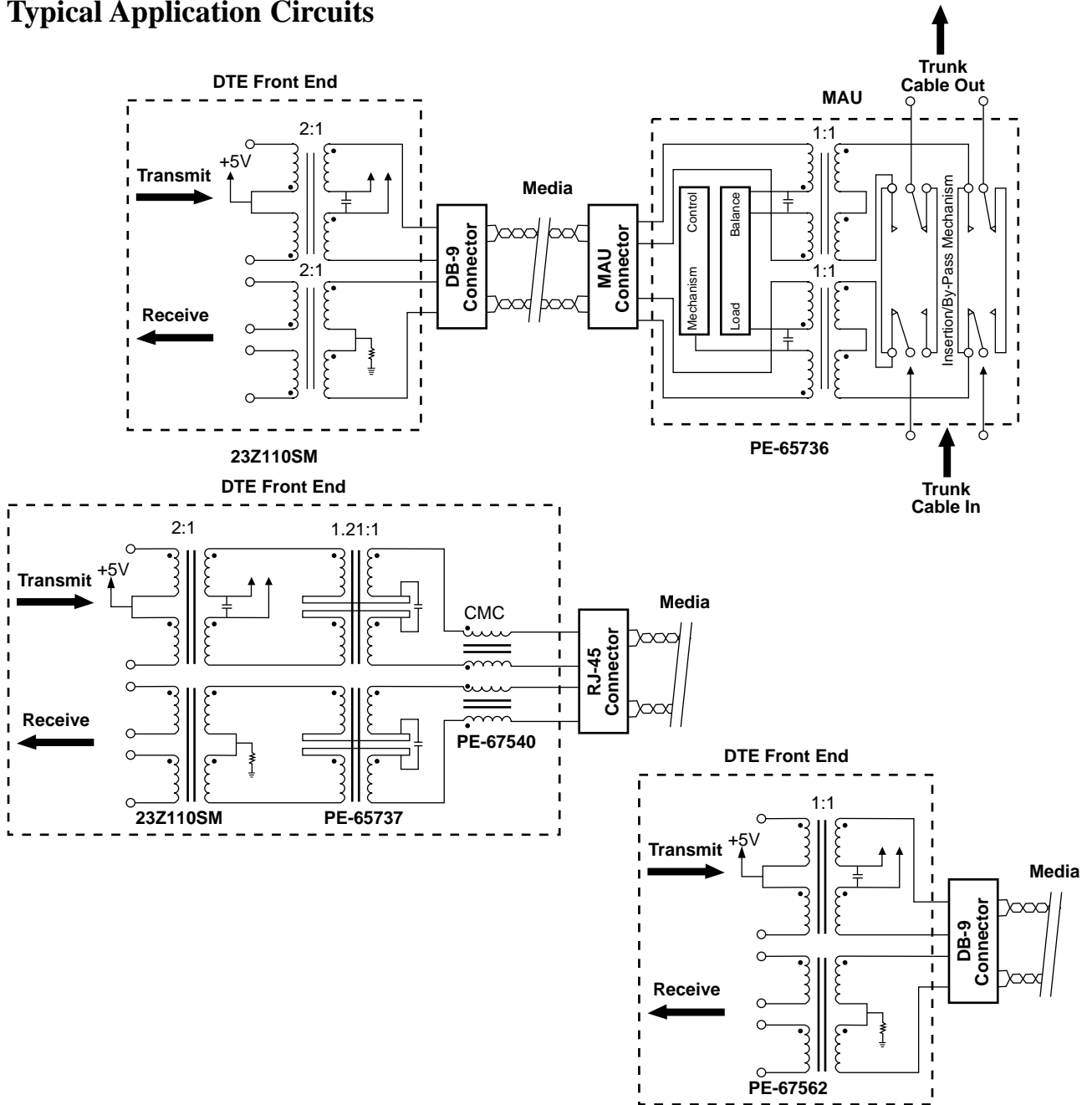


Application Notes for Surface Mount:

These transformers are designed for use in Token Ring applications that support both 4 Mbps and 16 Mbps data rates. The varying turns ratios allow for maximum design flexibility in either DTE or MAU applications.

For information on combined filter and transformer modules that support either IBM and National Semiconductor, or Texas Instruments Token Ring chip sets, contact Pulse today.

Typical Application Circuits

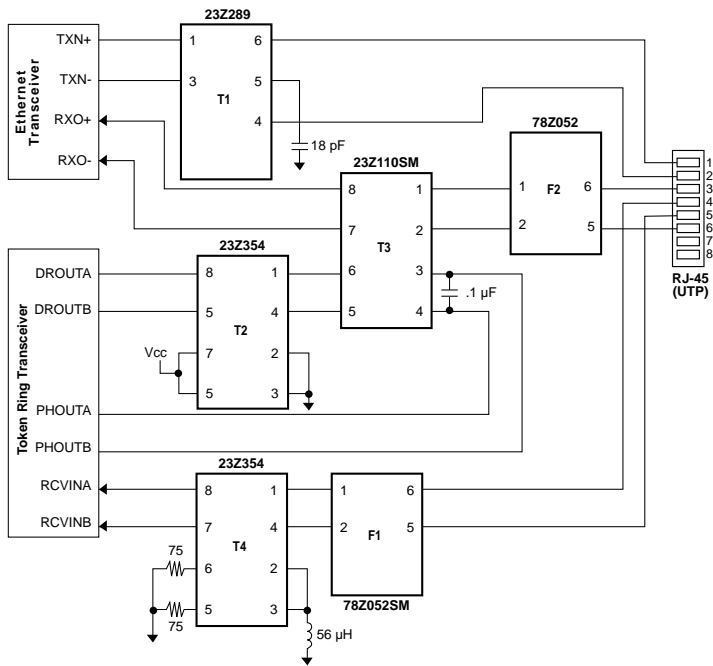


TOKEN RING ISOLATION TRANSFORMERS

Designed for 4 and 16 Mbps Applications



Typical Application Circuits



Application Note for Surface Mount:

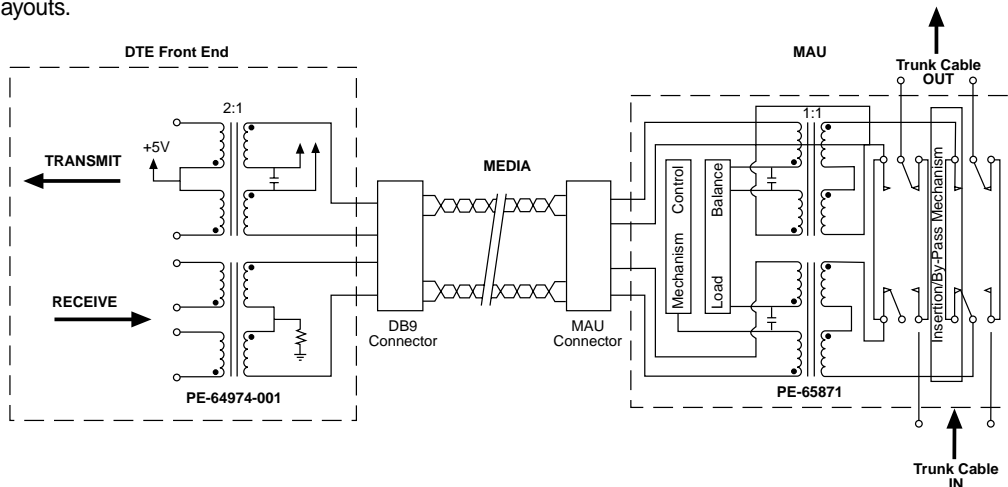
A combined Token Ring and 10Base-T application circuit is shown below. The suggested application circuit supports either Token Ring UTP or 10Base-T Ethernet media interface. The 23Z354SM was designed to provide isolation and impedance matching for dual protocol UTP media applications. The application circuit provides all necessary components to implement a complete magnetics and media interface for 10Base-T and Token Ring UTP media.

Transformers T2 and T4 provide isolation and impedance matching for Token Ring UTP media interface. Transformer T3 provides phantom interface to the media. Filter F2 provides the necessary differential filtering in compliance with IEEE 802.5 and FCC emission requirements. An identical F1 filter, included in the receiver path, eliminates high frequency noise on the receive channel and protects against FCC radiated emissions.

Application Note for Through Hole:

These transformers are specifically designed for use in IEEE 802.5 Token Ring applications at either 4 Mbps or 16 Mbps data rates. The varying turns ratios allow the product to be used in either DTE or MAU applications. Single and dual package options provide further flexibility for board layouts.

The 23Z111 and 23Z379 can provide 100 Ω to 150 Ω impedance transformation. The PE-63838-001, PE-67537, 23Z110, 23Z112, 23Z379, and the 23Z807 can provide 600 Ω to 150 Ω conversion. The 23Z111 and 23Z807 provide taps for 100 Ω and 150 Ω outputs.



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