



November 13, 1978

Mid-West Transformer Co.  
1642 N. Halsted  
Chicago, Illinois 60614  
Attn: Paul W. Ziegler

Dear Paul,

This letter is your authority to release drawings and samples of the Mattel Video transformer, part number 663P2A (Mattel part number 2609-9549) to Jerrold, a division of General Instruments.

Jerrold has executed a Confidential Disclosure Agreement with Mattel. Any purchases by Jerrold are to be limited to 2,000 pieces until additional authorization is given by Mattel. Jerrold is responsible for all charges and costs incurred via their requests and your sale to them should be based upon your standard policies and procedures.

Thank you for your cooperation. If you have any questions, please contact me.

Sincerely yours,

Howard L. Cohen  
Director of Purchasing

HLC/mem

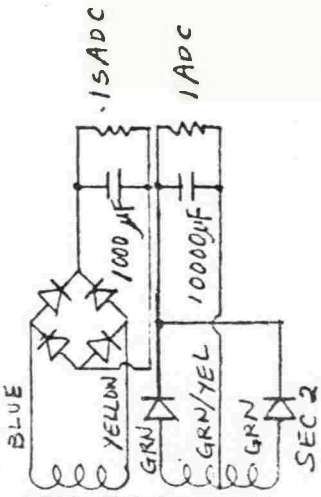
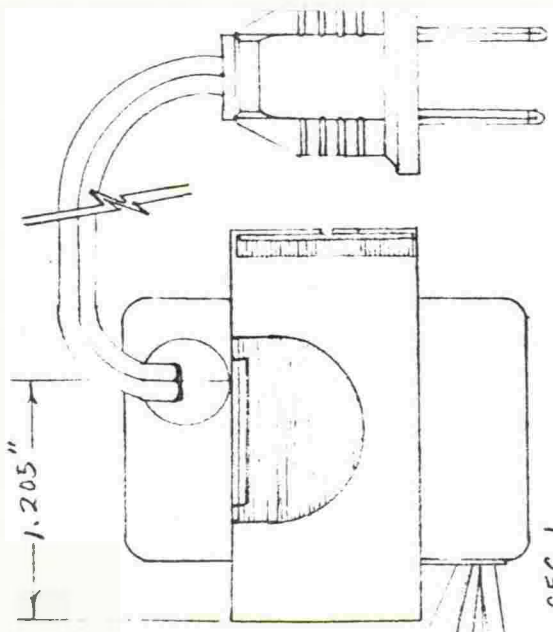
cc: David Chandler ✓  
Jeff Rochlis

LINE CORD SHOULD BE per UL 696 & 18 ga.  
 PRIMARY TO INCLUDE FUSE, PICO TEMP #61261.

LINE CORD  
 72" ±2"

.565" MAX  
 .031"  
 1.435" MAX

.906" MAX  
 2.50" MAX

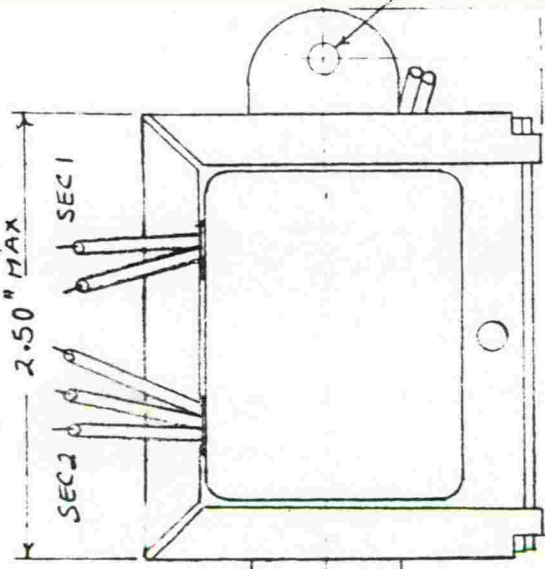


EXCITING CURRENT: 80 MA MAX  
 EXCITING WATTS: 1 WATT MAX

SECONDARY #1 OUTPUT 14V AC ± .15A DC BRIDGE 1K π  
 SECONDARY #2 OUTPUT 16V CT ± 1A DC FW CT 1K mfc

LEADS MEASURED FROM SLOT TO  
 TIB +1/2"-0. SK&T 1/2"±1/8"  
 SEC 1S BLUE  
 SEC 1F YEL  
 SEC 2S GRN  
 SEC 2F GRN/YEL  
 ALL 8"

969"  
 2.0" MAX  
 .187" DIA



2.875"  
 3.30"

TOLERANCE UNLESS OTHERWISE SPECIFIED		DESCRIPTION
FRACTIONAL	± 1/64"	MATERIAL
DECIMAL	± .005"	
ANGULAR	± 3°	
HOLES	± .002"	
REMOVE ALL BURRS		
DATE 10/18/78		
DRAWN VD		SCALE
APPROD.		REF. DWGS.
USED ON		

MATTEL PART NO. 2609 - 9549

LEAD INSULATION: FR-1 YES TEMP. RATING 105°C MATERIALS VINYL MAT THICKNESS .05 0'

IMPREGNANT: TYPE VARNISH NO., P.D. GEORGE #777

	WINDG INFORMATION	WIRE GAUGE & INSULATION	INTERLAYER INSULA
		SNS(SINGLE NYLON POLYURETHANE)	N/A (NOT APPLICABLE) K(KRAFT PAPER) M(MYLAR)
(1)	<u>PRI</u>	<u>30SNS</u>	<u>.0015K</u>
(2)	<u>SEC 1</u>	<u>28SNS</u>	<u>.002K</u>
(3)	<u>SEC 3</u>	<u>23SNS</u>	<u>.003K</u>
(4)			
(5)			
(6)			
(7)			
(8)			

INTERWINDG INSUL:	(WINDINGS)	INSULATION MATERIAL & THICKNESS	
		K(KRAFT PAPER)	M(MYLAR)
CORE TO	<u>PRI</u>	<u>.028" GUMMED KRAFT + .005" NOMEX M</u>	
<u>PRI</u> TO	<u>SEC 1</u>	<u>.0015"K + .005" NOMEX M + .002"K</u>	
<u>SEC 1</u> TO	<u>SEC 2</u>	<u>.003" M + .004" K</u>	

INSULATION UNDER LEAD CONNECTIONS: (PRIMARY) .006" M + .005" NOMEX M  
 INSUL. UNDER XOVERS (MAT & THICKNESS) 1/8" MIN SPACE + .0025" MYLAR TAPE  
 INSUL. OVER XOVERS (MAT & THICKNESS) .007" MYLAR MATT TAPE  
 OUTER WRAPPER: .007" GUMMED KRAFT  
LINE CORD (UL 696 TYPE)



SIGNATURE Yang Pak  
 MID-WEST TRANSFORMER CO

DATE: 9-22-78

# MID-WEST TRANSFORMER CO.

333 BARRON BOULEVARD  
GRAYSLAKE, ILLINOIS 60030



AREA CODE 312 223-8686

DR. CHANDLER  
Mattel Inc.  
5150 Rosecrans Avenue  
Hawthorne, Cal. 90250

1-3-79

Subj.: Your part 2609-9549, our part 663P2A

Dear Dr. Chandler:

Attached are 2 final samples as we submitted them to UL, Chicago, for Class 2 UL 506 listing. The units are identical to the previously supplied samples with the exception of the position of the two secondary windings. The low power secondary (blue to yellow leads) is now on the outside of the coil. This change was necessary to effect a more rapid heat flow to the thermal protector. The previous position resulted in a marginal performance under shorted condition (temperature rise on the core before the protector opened was averaging 120°C against a 120°C max.). It is now 65°C on this winding and 50°C on the green to green winding.

We expect the UL-Testing completed by middle of February 1979.

Very truly yours

MID-WEST TRANSFORMER CO.

*Ernest Finkbeiner*  
Ernest Finkbeiner  
VP Eng.

cc: Mr. Cliff Perry  
Dresco

# MID-WEST TRANSFORMER CO.

333 BARRON BOULEVARD  
GRAYSLAKE, ILLINOIS 60030



AREA CODE 312 223-8686

March 8, 1979

Mattel, Inc.  
5150 Rosecrans Avenue  
Hawthorne, California 90250  
Attn: Mr. Cliff Perry

SUBJECT: Your part 2609-9549; Mid-West part #663P2A

Dear Cliff:

We have immediately redesigned this part to meet the voltage requirements given to me in our phone conversation of 3-6-79. The new requirements are:

SEC #1 16.0V CT @ 1.3A DC  
SEC #2 15.5V @ .4A DC

The new parameters result in a DC-Power increase from 18.1 Watts to 27.2 Watts or 55%. This increase would normally double the temperature rise which is approximately 40°C on the old unit with the 18.1 Watt Output. A temperature rise of twice that (approx. 80°C) would exceed the UL 506 temperature limits as well as the rating of the insulation system used. However, by selection of a specially formulated impregnation procedure and compound, we are able to produce the new part in the same size and configuration with a temperature rise of only 55°C which is well within the limiting factors, providing that you can accept the increase of 15°C in your apparatus.

This is all the more desirable since a drastic increase in size would present problems with the UL 506 which requires that the short circuit currents on any combination of shorting secondary leads is less than eight Amperes one minute after power turn on. The new design is very marginal when Sec #1 (16.0V CT winding) is shorted from the center-tap to either end. However, we are hopeful to solve this problem.

We are forwarding to you six samples 663P2A/1 for your evaluation. Please advise as soon as possible.

Very truly yours,

MID-WEST TRANSFORMER CO.

*Ernest Finkbeiner*

Ernest Finkbeiner  
Vice President/Engineering

ah

CC: Dr. Chandler  
Dresco

**MID-WEST TRANSFORMER CO.**

333 BARRON BOULEVARD  
GRAYSLAKE, ILLINOIS 60030



AREA CODE 312 223-8686

March 21, 1979

Mattel Electronics  
5150 Rosecrans Avenue  
Hawthorne, California 90250  
Attn: Dr. David P. Chandler

SUBJECT: New Power Transformer SK-JHL-001

Dear Dr. Chandler:

We have received your drawing and find that the transformer could be built in the following dimensions:

Lamination size 2-1/2" x 3"

1" stack

Mounting Standard Horizontal Channel frame 2-5/8" high,  
3-1/8" length (excluding mounting feet), and 2-3/4" across  
side shields.

Please let us know if we should prepare samples and to what UL Spec the unit has to be shipped.

It would be helpful to us to know the RMS Voltage across the green leads.

Very truly yours,

MID-WEST TRANSFORMER CO.

A handwritten signature in cursive script, appearing to read "Ernie".

Ernest Finkbeiner  
Vice President/Engineering

ah

cc: Mr. Cliff Perry  
Dresco

**MID-WEST TRANSFORMER CO.**

333 BARRON BOULEVARD  
GRAYSLAKE, ILLINOIS 60030



AREA CODE 312 223-8686

April 9, 1979

Mattel Electronics  
5150 Rosecrans Avenue  
Hawthorne, California 90250  
Attn: Dr. David P. Chandler

SUBJECT: NEW POWER TRANSFORMER; Your letter dated March 15, 1979

Dear Dr. Chandler:

We have made a preliminary sample of subject part which is being forwarded to you under separate cover. The voltages may not be exactly what you want since we do not know the insertion losses of your regulators. However, we believe them to be close enough for a preliminary test. We assume that the plug-in outlet has to be part of the transformer. The dimension across the endbells can be reduced somewhat. We used a standard extra deep endbell.

Production units can be made with an inbetween draw that still fits the geometry.

Very truly yours,

MID-WEST TRANSFORMER CO.

*Ernest Finkbeiner*

Ernest Finkbeiner  
Vice President/Engineering

ah

cc: Dresco Industries



April 19, 1979

Mr. Ernest Finkbiner  
Mid West Transformer Company  
333 Barron Boulevard  
Grayslake, Illinois 60030

Dear Ernest:

Attached are revised, preliminary specifications for the power transformer discussed with your representative Ron Barrett on 4/16/79.

We would appreciate your best estimates as to size, weight, and cost. Also, details pertinent to recommended mounting brackets.

As regards the female receptacle shown on figure 2, would appreciate information and/or samples of typical, and hopefully readily available, parts which might be used.

Very truly yours,

John H. Lishman  
Engineering

JHL/mu



# MATTEL ELECTRONICS

June 22, 1979

Mr. Ernest Finkbiner  
MID WEST TRANSFORMER COMPANY  
333 Barron Boulevard  
Grayslake, Illinois 60030

Dear Ernest:

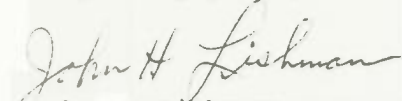
Attached are revised specifications dated 6/19/79 for the power transformer to be used in our Keyboard Component product. Your representative, Ron Barrett, was advised of the change on 6/22/79.

We would appreciate your best estimates of any changes in size, weight, or cost over the transformer configuration sampled and bid to us on 5/25/79 per our preliminary 4/2/79 specification.

We require at least 6 samples of the new configuration unit as soon as possible. This request was made through Ron Barrett on 6/22/79.

We have received only one sample female receptacle for consideration (reference Figure 2). While the size appears suitable, we query whether this receptacle can be obtained molded to the pig tail much as the plug is molded to the line cord.

Very truly yours,

  
John H. Lishman,  
Engineering

JHL:sp

cc: T. Perez - Mattel  
D. Chandler - Mattel  
R. Barrett - Dresco Industries, Inc.

