April 1983
PRELIMINARY

EUROTECHNIQUE

ET 42 X 32 Familly
32,768 BIT (4096 × 8) Mask Programmable ROM

General Description

These 4096 words by 8 bit static mask programmable ROM are fabricated using EUROTECHNIQUE'S high speed, low power, silicon gate XMOS technology. This provides complete DTL/TTL compatibility and single power supply operation.

All ROM have an OE input (CS1) which enables or three states the output buffer, that allows convenient memory expansion.

ET 42532 and ET 42732 have a $\overline{CE}$ input (active low) which provides a power-down (standby) mode, allowing a 75 % reduction in power, with no increase in access time.

ET 42232 and ET 42332 provide a CS2 input which has same function as CS1.

Programming memory content and control inputs is accomplished by changing one mask during fabrication.

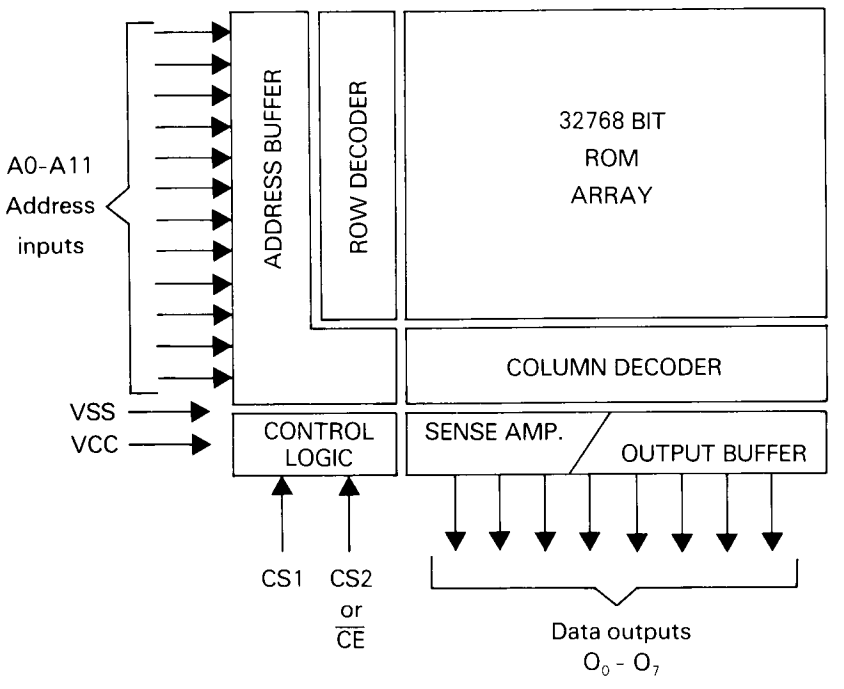
Features

- Fast access time
- Full static operation
- Single + 5 V power supply
- All inputs and outputs directly DTL/TTL compatible
- Three-state output for buses interface
- Control inputs fully programmable : ($\overline{CE}$ excepted) active low, high or no connection
- ET 42232, ET 42532 : Pin compatible with 2532 EPROM
- ET 42332, ET 42732 : Pin compatible with 2732 EPROM
- ET 42532, ET 42732 : Provide standby mode

Applications :

- Microprocessors instruction store
- Control logic
- Table look-up

Block diagram



Pin names :

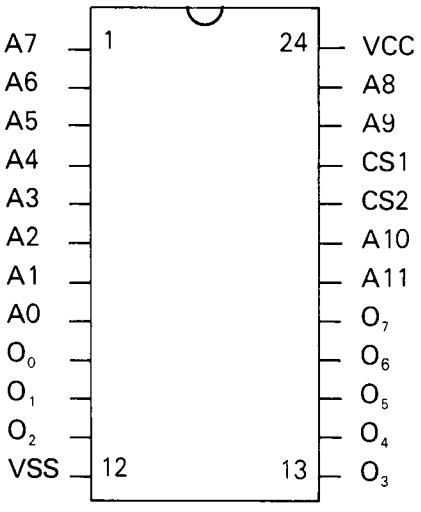
CS1	= OE/$\overline{OE}$/NC* : output enable
CS2	= OE/$\overline{OE}$/NC* : output enable
$\overline{CE}$	= Chip enable - ET 42532 - ET 42732
A0-A11	= Address inputs
O_0-O_7	= Data outputs
VCC	= Power + 5V
VSS (GND)	= Ground

* Customer defined mask programmable chip select.

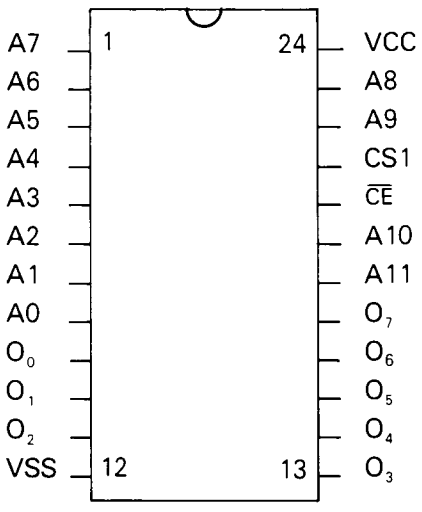
N.C : No connection

Connection diagrams

ET 42232

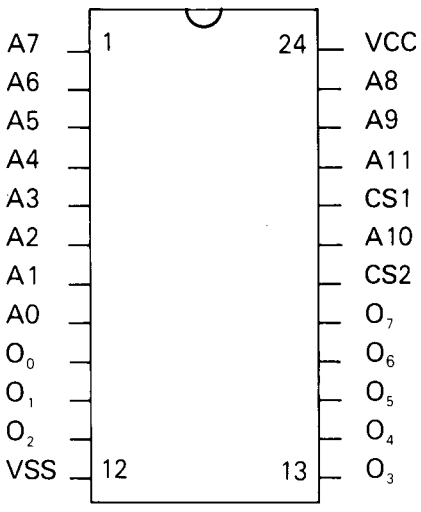


ET 42532

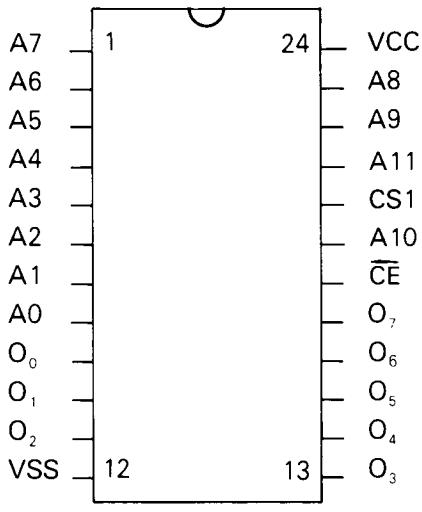


2532 Eprom Pin compatible

ET 42332



ET 42732



2732 Eprom Pin compatible

Absolute Maximum Ratings (Note 1)

Temperature under Bias	− 10°Cto + 80°C
Storage Temperature	− 65°Cto + 125°C
All Input and Output Voltages	− 0,5Vto + 7 V
Power Dissipation	1 W
Lead Temperature (Soldering, 10 seconds)	300°C

READ OPERATION

D C Operating Characteristics TA = 0°C to 70°C, VCC = 5V ± 10 %, VSS = OV

Symbol	Parameter	Conditions	Min.		Max.	Units
ILI	Input Load Current	VIN = 5.5V	− 10		+ 10	mA
ILO	Output Leakage Current	Vout = 5.5V/output = Hi-Z	− 10		+ 10	mA
ICC1	VCC Current Standby	ET 42532 ET 42732 / $\overline{CE}$ = VIH			15	mA
ICC2	VCC Current Active	Active mode			70	mA
VIL	Input Low Voltage		− 0.5		0.8	V
VIH	Input High Voltage		2.0		VCC + 1	V
VOL	Output Low Voltage	IOL = 3.2 mA			0.4	V
VOH	Output High Voltage	IOH = − 440 uA	2.4			V

AC Characteristics TA = 0°C to 70°C, VCC = 5V ± 10‰, VSS = 0V

Symbol	Parameter	Max	Units	
TACC	Address Access Time	200	nS	
TCE	Chip Enable Access Time	200	nS	ET 42532 ET 42732
TOE	Output Enable Access Time	100	nS	
TOFF	Output buffer Turn off delay	100	nS	

Capacitance (Note 2) TA = 25°C, f = 1 MHz

Symbol	Parameter	Conditions	Max	Units
CIN	Imput Capacitance	VIN = 0V	6	pF
COUT	Output Capacitance	VOUT = 0V	8	pF

AC Test Conditions

Input Rise and Fall Times : ⩽ 20 ns
Input Pulse Levels : 0.8V to 2.0V
Timing Measurement Reference Level :
Inputs = 1,5V
Outputs = 0.8V and 2V

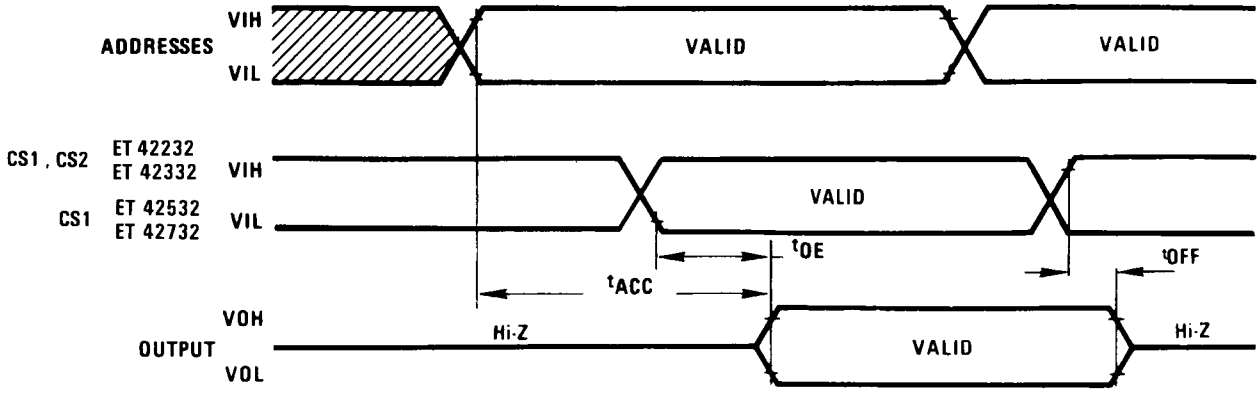
Output load : Sinking 3.2 mA with 100pF (including scope and fixture)
Sourcing 0.44mA with 100 pF (including scope and fixture)

Note 1 : "Absolute Maximum Ratings" are those values beyond which the safety of the device cannot be guaranteed except for "Operating Temperature Range" they are not meant to imply that the devices should be operated at these limits. The table of "Recommended DC Operating Conditions" provides conditions for actual device operation.

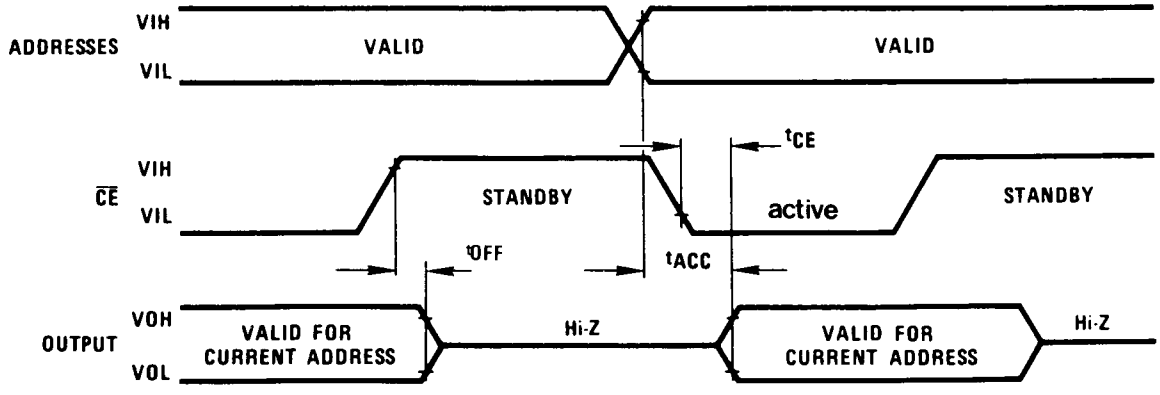
Note 2 : Capacitance measured with Boonton Meter or effective capacitance calculated from the equation C = IΔt/ΔV. Capacitance is guaranteed by periodic testing.

Switching Time Waveforms

Read Cycle — ET 42232, ET 42332; ET 42532 with $\overline{CE}$ = VIL; ET 42732 with $\overline{CE}$ = VIL



Read Cycle - Standby Power Down Mode — ET 42532, CS1 = Valid; ET 42732, CS1 = Valid



Ordering information : to be mailed to our local sales office.

Pin compatibility with	Product	CS1			CS2			Option 1 (Product option)	Option 2 (CS1 option)	Option 3 (CS2 option)
		N.C. Connect	Active High	Active Low	N.C. Connect	Active High	Active Low			
2532 EPROM	ET 42232			X			X	Ø	Ø	Ø
				X		X		Ø	Ø	1
				X	X			Ø	Ø	2
			X				X	Ø	1	Ø
			X			X		Ø	1	1
			X		X			Ø	1	2
		X					X	Ø	2	Ø
		X				X		Ø	2	1
		X			X			Ø	2	2
	ET 42532			X				2	Ø	2
			X					2	1	2
		X						2	2	2
2732 EPROM	ET 42332			X			X	1	Ø	Ø
				X		X		1	Ø	1
				X	X			1	Ø	2
			X				X	1	1	Ø
			X			X		1	1	1
			X		X			1	1	2
		X					X	1	2	Ø
		X				X		1	2	1
		X			X			1	2	2
	ET 42732			X				3	Ø	2
			X					3	1	2
		X						3	2	2

Selected Product/options :

Product name	OPTION 1 =	OPTION 2 =	OPTION 3 =

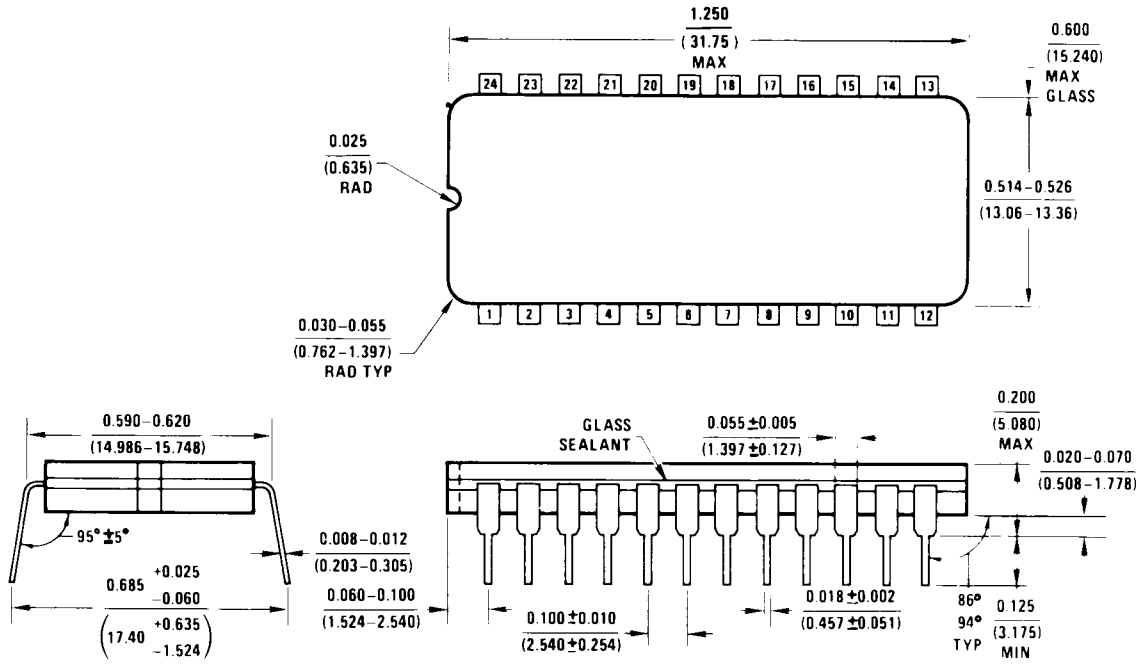
To be filled with desired option number, according to selected product (refer to table shown above).

ROM code support :

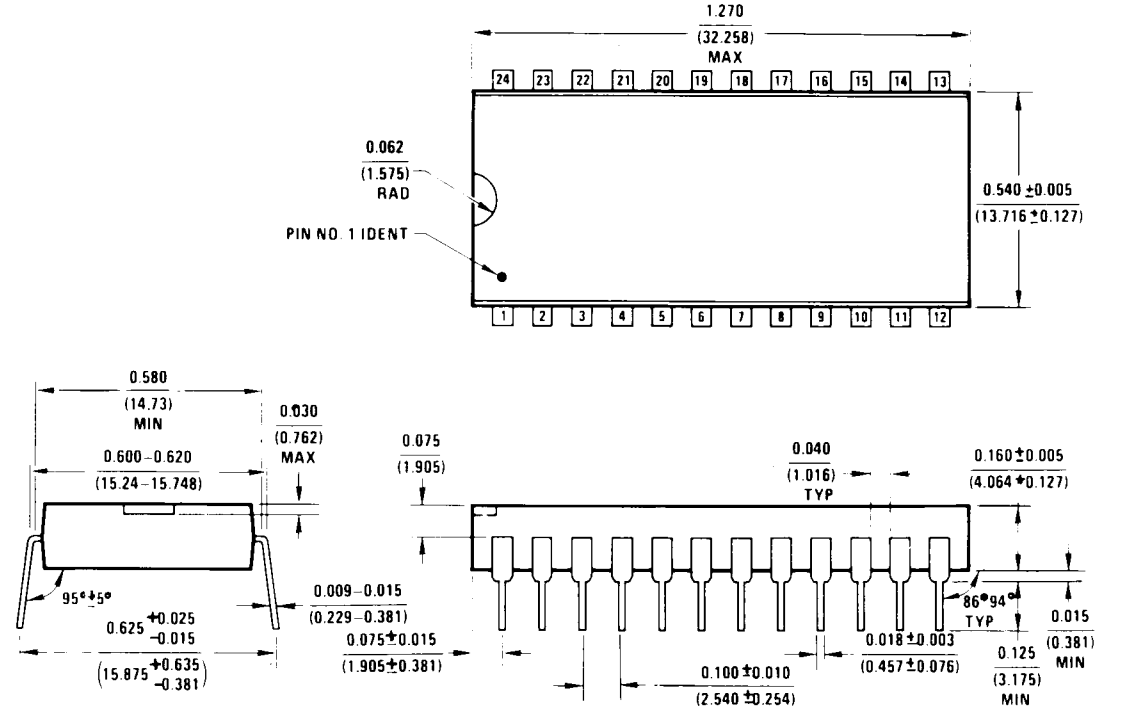
☐ 1 × 2532 EPROM
☐ 1 × 2732 EPROM

Note : Customer will submit an extra blank eprom of the same type with the ROM code support eprom.

Physical Dimensions inches (millimeters)



Ceramic Dual-in-Line Package (J)
Order Number ET 42232J ET 42532J
ET 42332J ET 42732J
ET Package Number J24A



Molded Dual-In-Line Package (N)
Order Number ET 42232N ET 42532N
ET 42332N ET 42732N
ET Package Number N24A

EUROTECHNIQUE

Eurotechnique : 3, place Gustave Eiffel, Silic
209, 94518 Rungis Cedex, France,
Tél. (1) 687.23.03, Telex : 201068

Eurotechnique Semiconductor Ltd : 4 th floor
Lambourne House, 7 Western Road, Romford,
Essex RM 1 3LD, UK, Tel. (708) 27.488,
Telex :896683

E.T.S. Eurotechnique Semiconductor Verkaufs -
GmbH, Neusser Strasse 9, D-8000 Munich 40,
Germany, Tel. (89) 36.30.85/86,
Telex : 528283

Headquarters, International Sales Office and Factory : Eurotechnique B.P. 2, 13790 Rousset, France, tel. (42) 23.98.01, telex : 440.306 F