

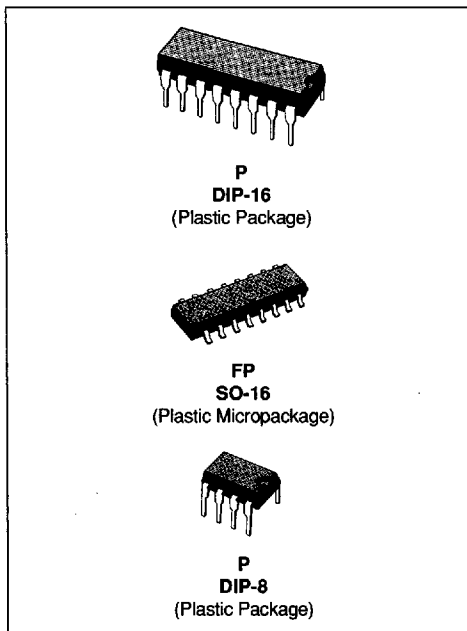


SWITCHED CAPACITOR MASK PROGRAMMABLE FILTER

- CAUER TYPE
- 6TH ORDER
- STOPBAND ATTENUATION : 32dB (typ)
- PASSBAND RIPPLE : 0.15dB (typ)
- CLOCK TO CUT-OFF FREQ. RATIO : 400
- CLOCK FREQUENCY RANGE : 4 TO 1800kHz
- CUT-OFF FREQUENCY RANGE : 10Hz to 4.5kHz

* According to spectrum aliasing phenomenon, the TSG8531 must be considered as a highpass filter only in the range $[F_c, F_i/2]$, where F_i is the internal sampling frequency.

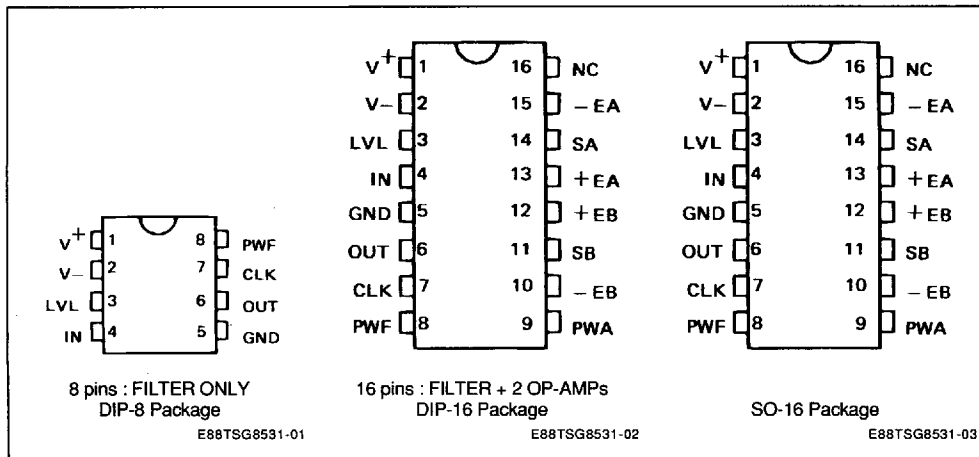
Note : For general characteristics, see TSG85XX specifications. For non standard quality level, consult SGS-THOMSON general ordering information.



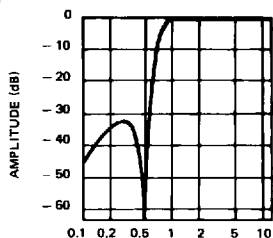
DESCRIPTION

The TSG8531 is a HCMOS highpass* elliptic filter.

PIN CONNECTIONS



AMPLITUDE RESPONSE CURVE



NORMALIZED FREQUENCY
E88TSG8531-04

FILTER SPECIFICATIONS

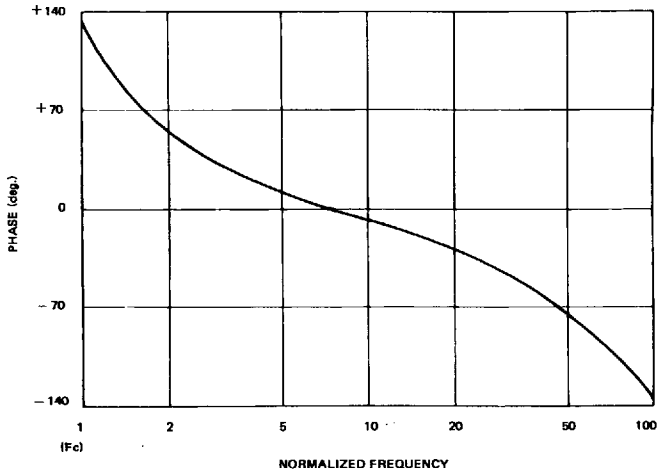
Highpass Filter : TSG8531 ; Type : Cauer ; Order : 6.

$V^+ = 5V$, $V^- = -5V$, $T = 25^\circ C$, $R_L = 5k\Omega$, $C_L = 100pF$, $I_{PWF} = 100\mu A$

Symbol	Parameter		Typ.	Tested Limits	Unit
Fe	External Clock Frequency		4 1800(*)		kHz (min) kHz (max)
Fi	Internal Sampling Freq.		2 900(*)		kHz (min) kHz (max)
Fe/Fc	Clock to Cutoff fr. Ratio		400 \pm 1%		
Fc	Cutoff Frequency		0.01 4.5(*)		kHz (min) kHz (max)
G _o	Passband Gain		-0.1 0.1		dB (min) dB (max)
A _p	Passband Ripple	[Fc, 30Fc] Fe = 400kHz	0.15	0.4	dB (max)
A _s	Stopband Attenuation	F < 0.55Fc Fe = 400kHz	32	30	dB (min)
V _{off}	Output DC Offset Voltage	LVL = 0V	\pm 100	\pm 200	mV (max)
LVL	DC Level Adjustment		\pm 300		mV
LG	Level gain		0.1		
R _{PWF}	PWF Resistance		10 72		k Ω (min) k Ω (max)
I _{PWF}	Input Current on PWF		50 250		μA (min) μA (max)
I ⁺	V ⁺ Supply Current	Fe = 100kHz I _{pwa} = 0 μA	3.5	5	mA (max)
I ⁻	V ⁻ Supply Current		3.5	5	mA (max)
PSRR ⁺	V ⁺ Supply Rejection Ratio	Fe = 40kHz	36		dB
PSRR ⁻	V ⁻ Supply Rejection Ratio	Fin = 1kHz	48		dB
R _{IN}	Input Resistance		3		M Ω
C _{IN}	Input Capacitance		20		pF
V _o	Output Voltage Swing		+ 3.5 - 4.5		Vp-p (max)
V _n	Output Noise	BW = 2kHz Fe = 40kHz	178		μV_{rms}
SNR	Signal to Noise Ratio	V _{in} = 2V _{rms}	80		dB

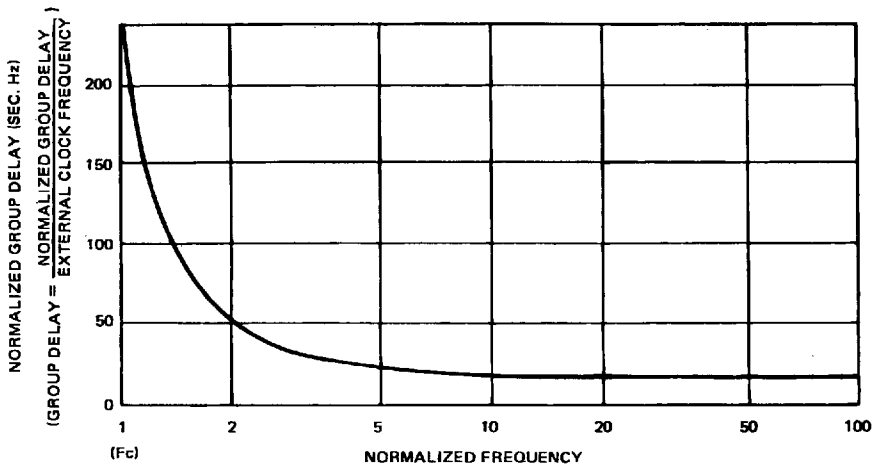
(*) At maximum Fe : - stopband attenuation A_s > 30dB for F < 0.55Fc
(with I_{pwr} = 250 μA) - passband ripple : A_p = 0.3dB
- passband gain : G_o = -1dB

PHASE RESPONSE CURVE (in passband)



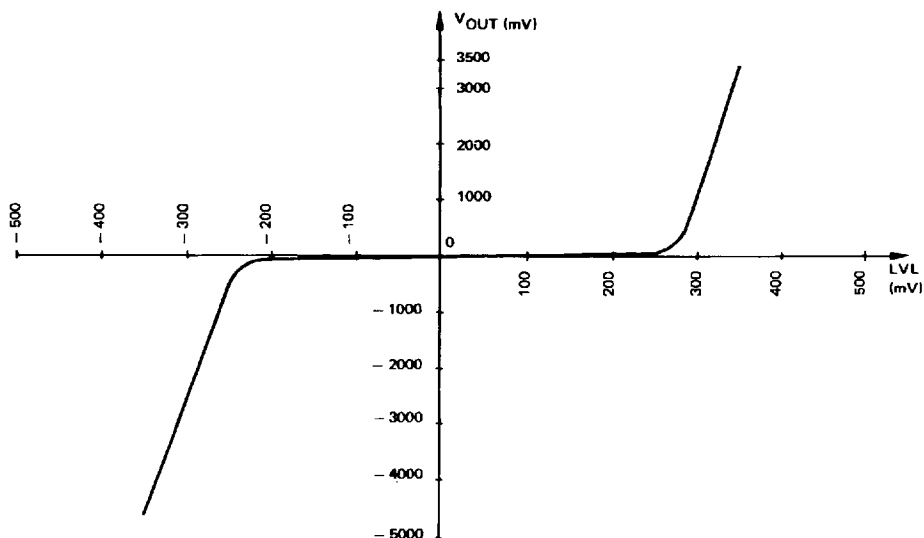
E88TSG8531-05

GROUP DELAY CURVE (in passband)



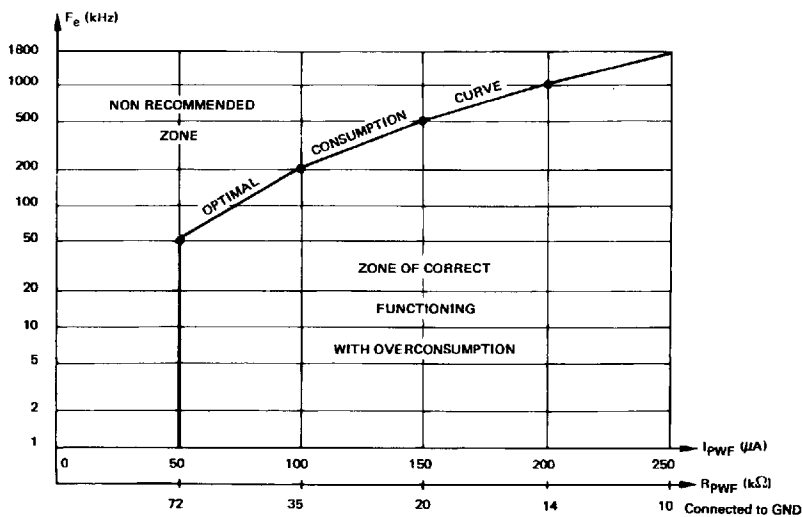
E88TSG8531-06

OUTPUT DC VOLTAGE ADJUSTMENT FROM LVL PIN



E88TSG8531-07

USER'S GUIDE FOR I_{PWF} AND R_{PWF} CHOICE

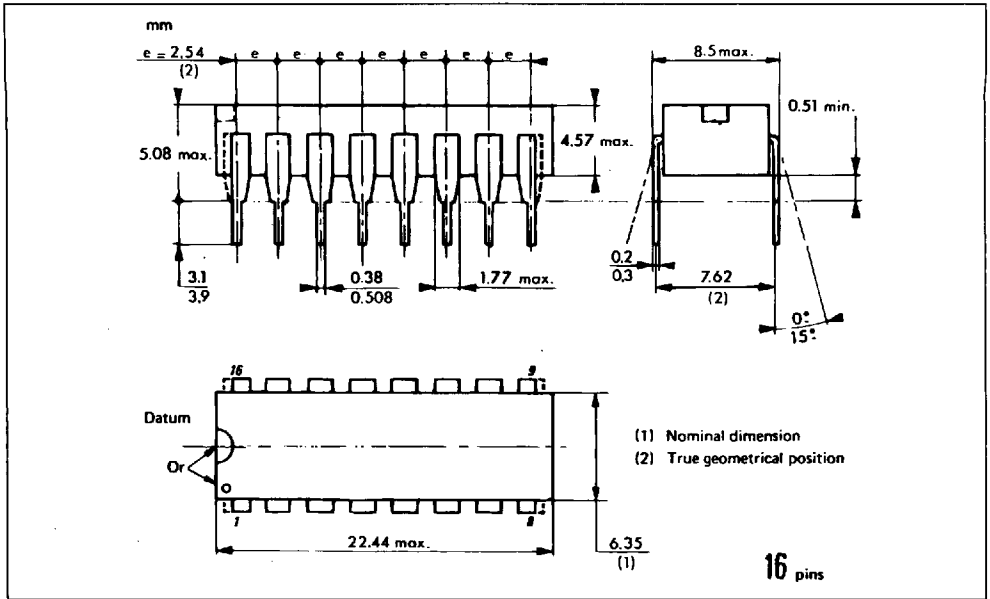


E88TSG8531-08

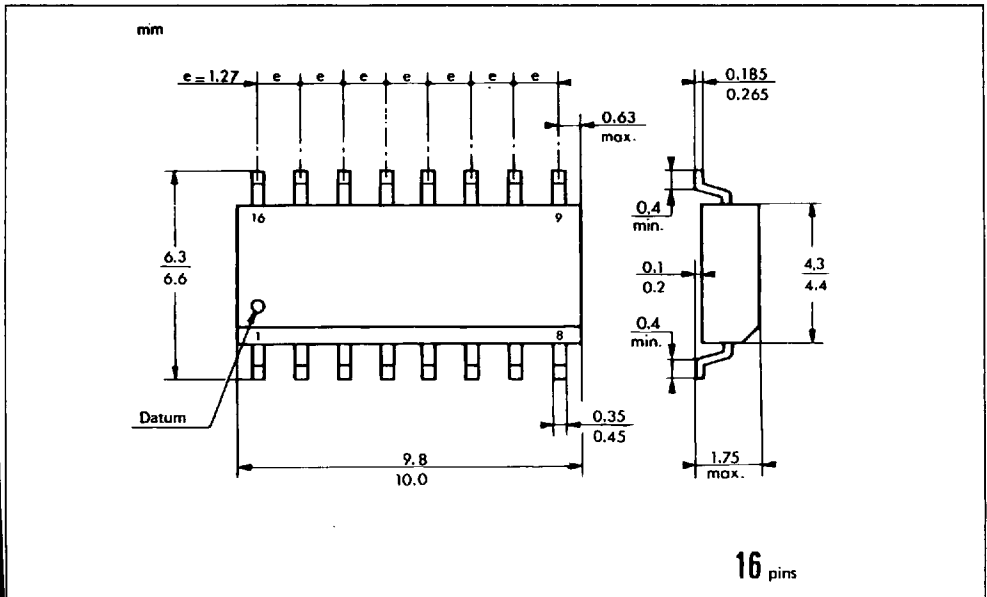
PACKAGE MECHANICAL DATA

S G S-THOMSON

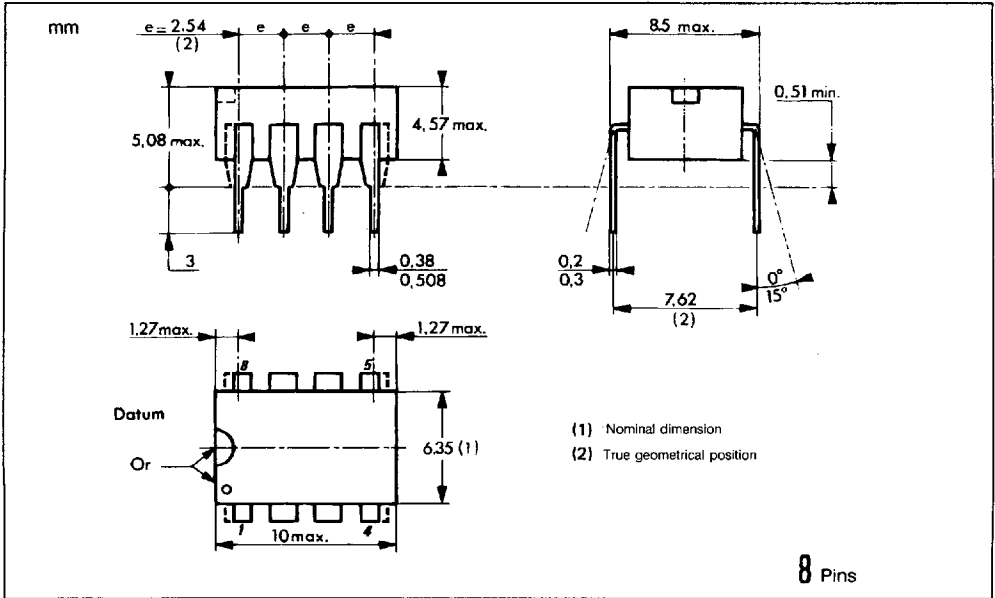
16 PINS - Plastic Dip



16 PINS - Plastic Micropackage



8 PINS - Plastic Dip



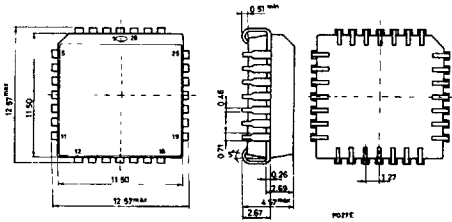
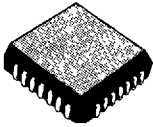
ORDER CODES

Plastic	16 Pins Package : TSG8531XP
Ceramic	16 Pins Package : TSG8531XC
Cerdip	16 Pins Package : TSG8531XJ
Plastic	8 Pins Package : TSG85311XP

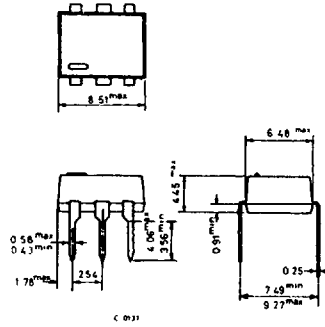
X : Temperature Range =

- C : $0^\circ\text{C} + 70^\circ\text{C}$
- I : $-25^\circ\text{C} + 85^\circ\text{C}$
- V : $-40^\circ\text{C} + 85^\circ\text{C}$
- M : $-55^\circ\text{C} + 125^\circ\text{C}$

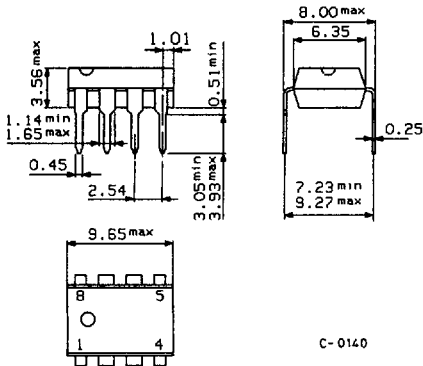
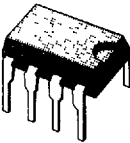
PLCC-28 Plastic Chip Carrier



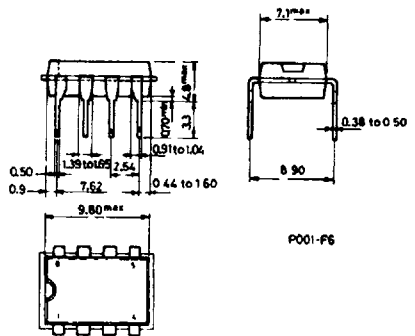
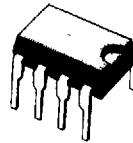
DIP-6



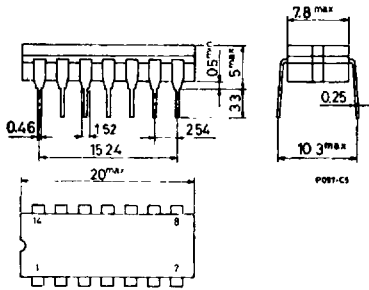
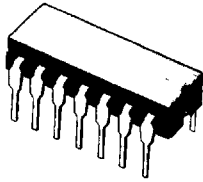
Minidip A Plastic



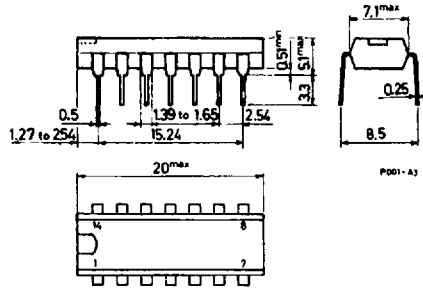
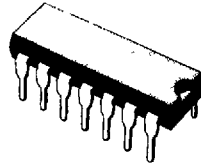
8 lead Plastic Minidip



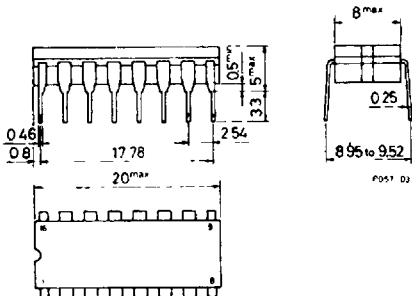
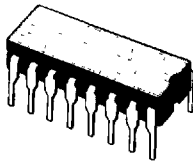
14 lead Ceramic Dip



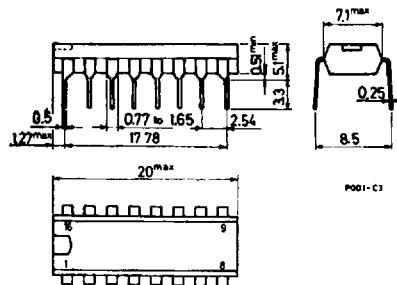
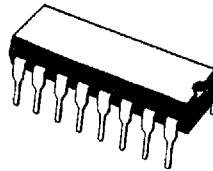
14 lead Plastic Dip



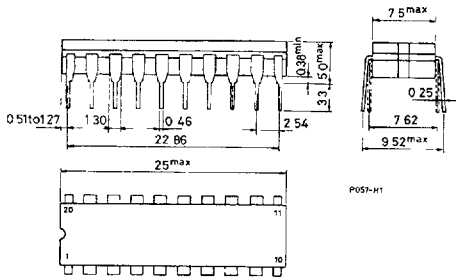
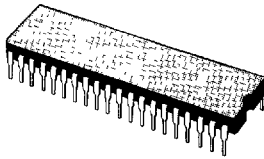
16 lead Ceramic Dip



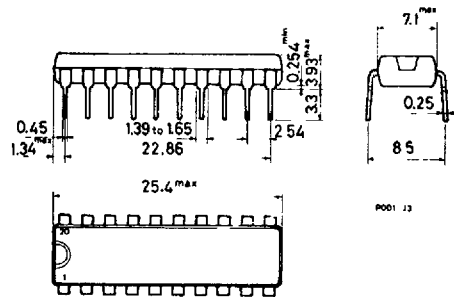
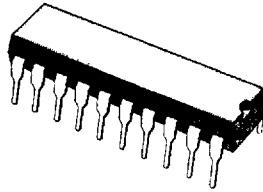
16 lead Plastic Dip (0.25)



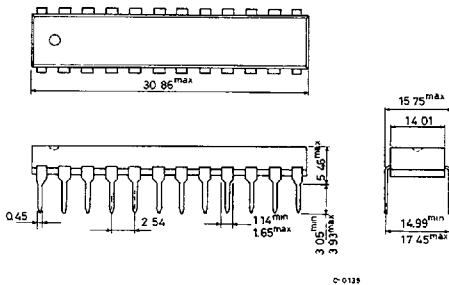
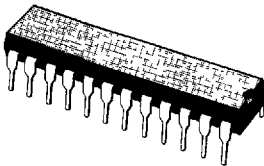
DIP-20 Ceramic



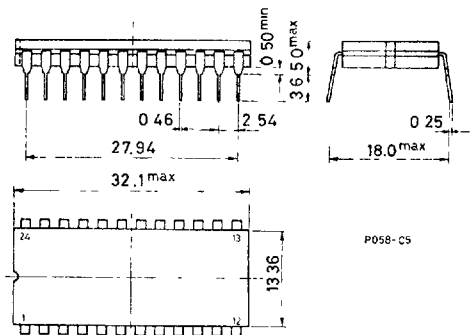
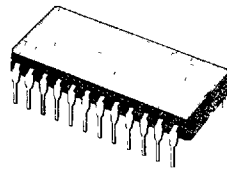
20 lead Plastic Dip (0.25)



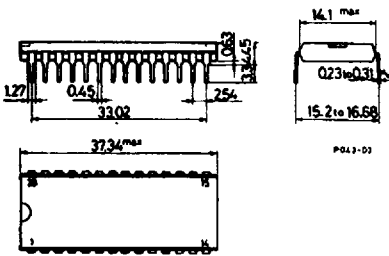
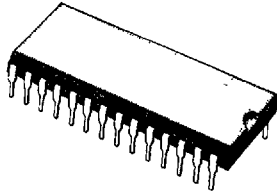
DIP-24 Plastic



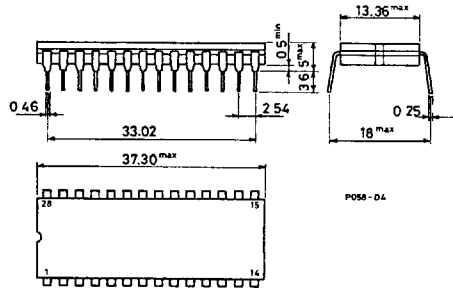
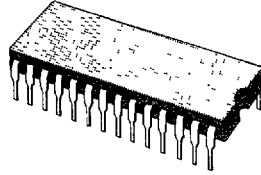
DIP-24 Ceramic (0.25)



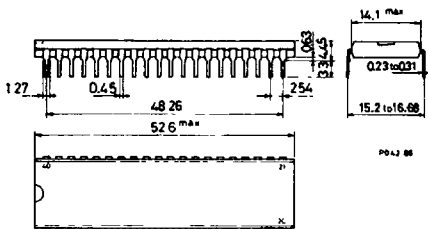
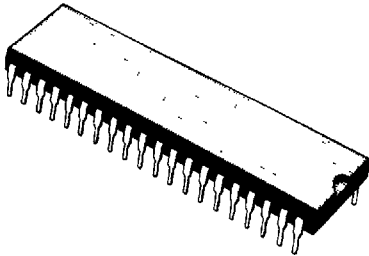
28 lead Plastic Dip



DIP-28 Ceramic (0.25)



40 lead Plastic Dip



TO-99

