

SWITCHED CAPACITOR MASK PROGRAMMABLE FILTER

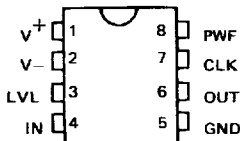
- CHEBYCHEV TYPE
- 6TH ORDER
- STOPBAND ATTENUATION : 60dB (typ) AT $0.25 \times F_c$
- PASSBAND RIPPLE : 0.45dB (typ)
- CLOCK TO CUT-OFF FREQ. RATIO : 500
- CLOCK FREQUENCY RANGE : 5 TO 1800kHz
- CUT-OFF FREQUENCY RANGE : 10Hz TO 3.6kHz

* According to spectrum aliasing phenomenon, the TSG8532 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

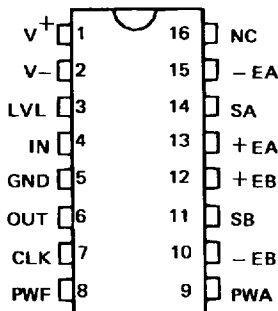
DESCRIPTION

The TSG8532 is a HCMOS highpass* polynomial filter.

PIN CONNECTIONS

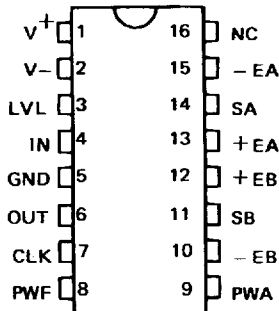
8 pins : FILTER ONLY
DIP-8 Package

E88TSG8532-01



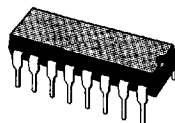
16 pins : FILTER + 2 OP-AMPS
DIP-16 Package

E88TSG8532-02

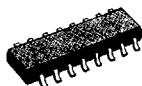


SO-16 Package

E88TSG8532-03



P
DIP-16
(Plastic Package)



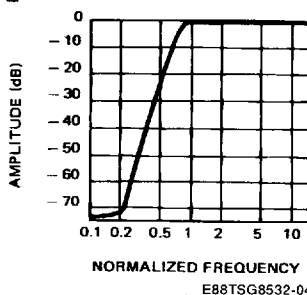
FP
SO-16
(Plastic Micropackage)



P
DIP-8
(Plastic Package)

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AMPLITUDE RESPONSE CURVE



FILTER SPECIFICATIONS

Highpass Filter : TSG8532 ; Type : Chebychev ; 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		5 1800(*)		kHz (min) kHz (max)
Fi	Internal Sampling Frequency		2.5 900(*)		kHz (min) kHz (max)
Fe/Fc	Clock to Cutoff fr. Ratio		500 $\pm$ 1%		
Fc	Cutoff Frequency		0.01 3.6(*)		kHz (min) kHz (max)
G _o	Passband Gain		- 0.4 0		dB (min) dB (max)
A _p	Passband Ripple	[1Fc, 45Fc] Fe = 500kHz	0.45	0.8	dB (max)
A _s	Stopband Attenuation	F < 0.25Fc Fe = 500kHz	60	55	dB (min)
V _{off}	Output DC Offset Voltage	LVL = 0V	$\pm$ 80	$\pm$ 200	mV (max)
LVL	DC Level Adjustment		$\pm$ 75		mV (max)
LG	Level gain		- 2.7		
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	3.4	5	mA (max)
I ⁻	V ⁻ Supply Current		3.4	5	mA (max)
PSRR ⁺	V ⁺ Supply Rejection Ratio	Fe = 50kHz Fin = 1kHz	49		dB
PSRR ⁻	V ⁻ Supply Rejection Ratio		46		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 = 50kHz Vin = 2Vrms	88		μV rms
SNR	Signal to Noise Ratio		85		dB

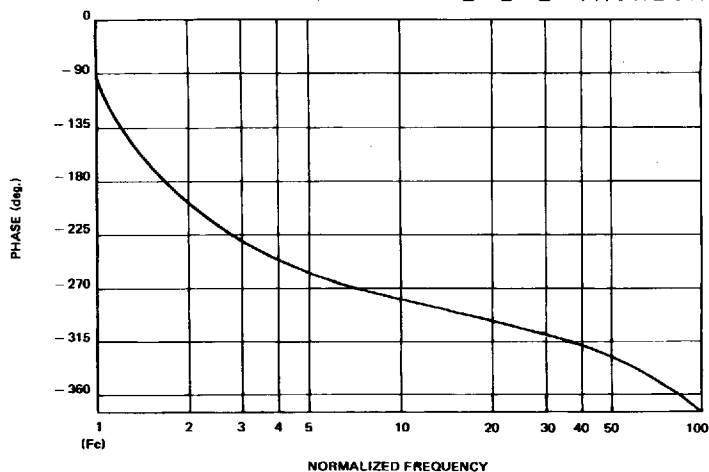
(*) At maximum Fe :

(with I_{pwt} = 250 μA)

- passband ripple : A_p = 0.8dB
- passband gain : G_o = - 0.8dB

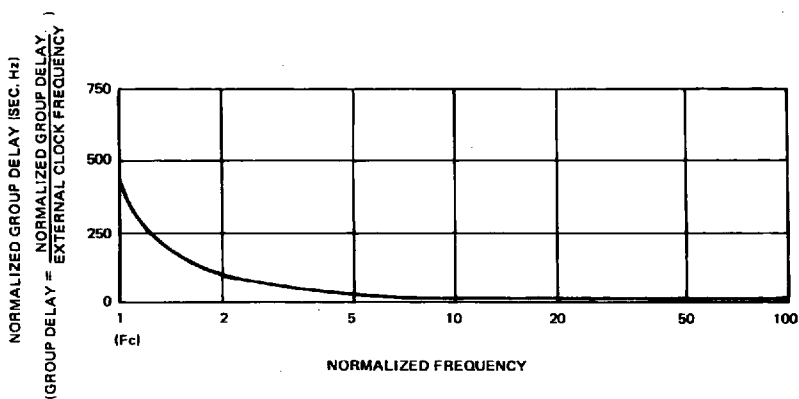
PHASE RESPONSE CURVE (in passband)

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E88TSG8532-05

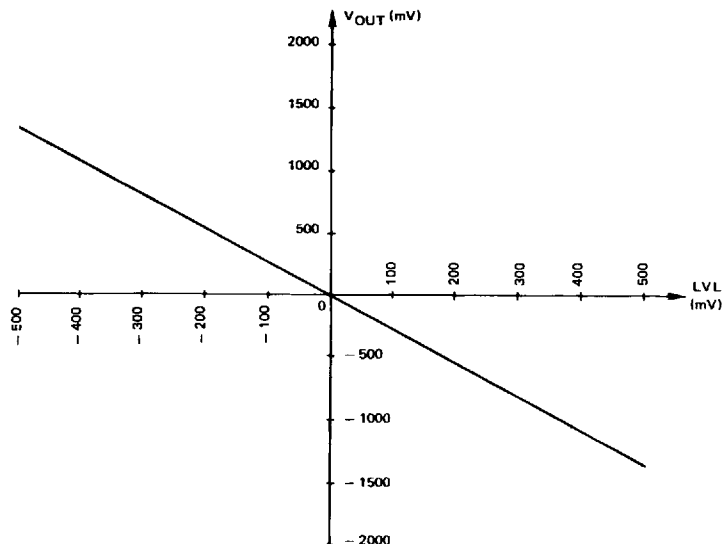
GROUP DELAY CURVE (in passband)



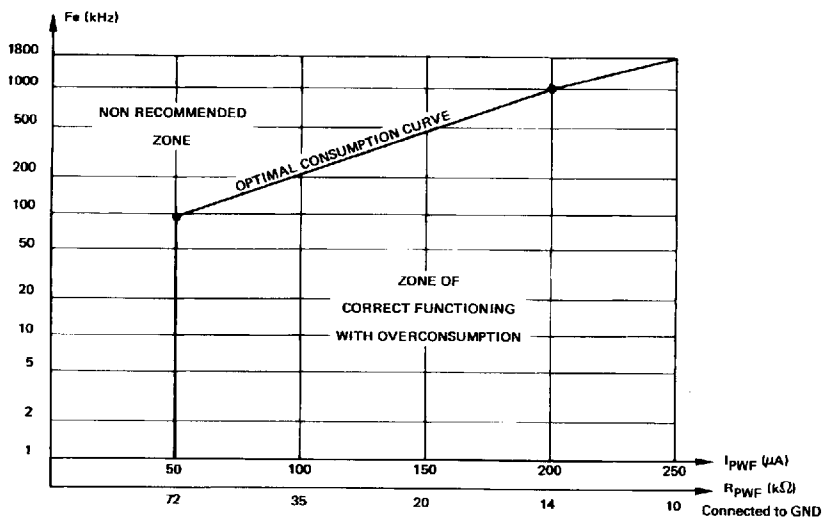
E88TSG8532-06

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OUTPUT DC VOLTAGE ADJUSTMENT FROM LVL PIN



E88TSG8532-07

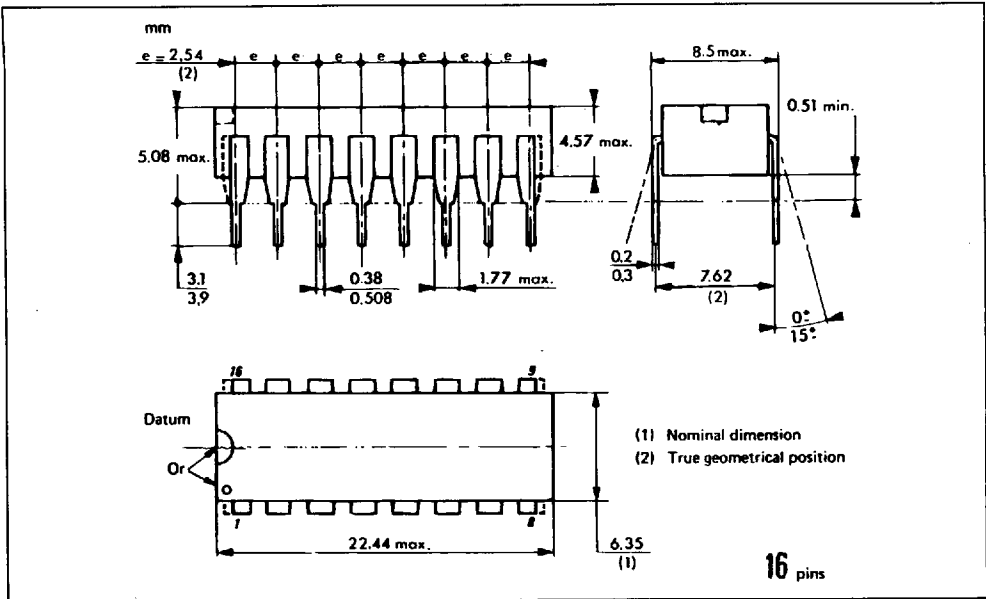
USER'S GUIDE FOR I_{PWF} AND R_{PWF} CHOICE

E88TSG8532-08

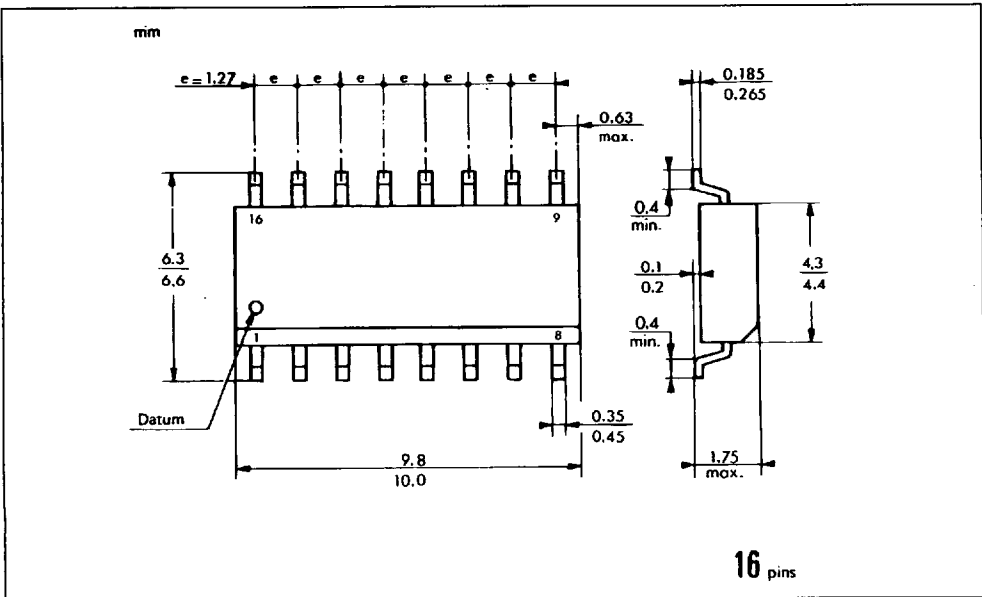
PACKAGE MECHANICAL DATA

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16 PINS - Plastic Dip

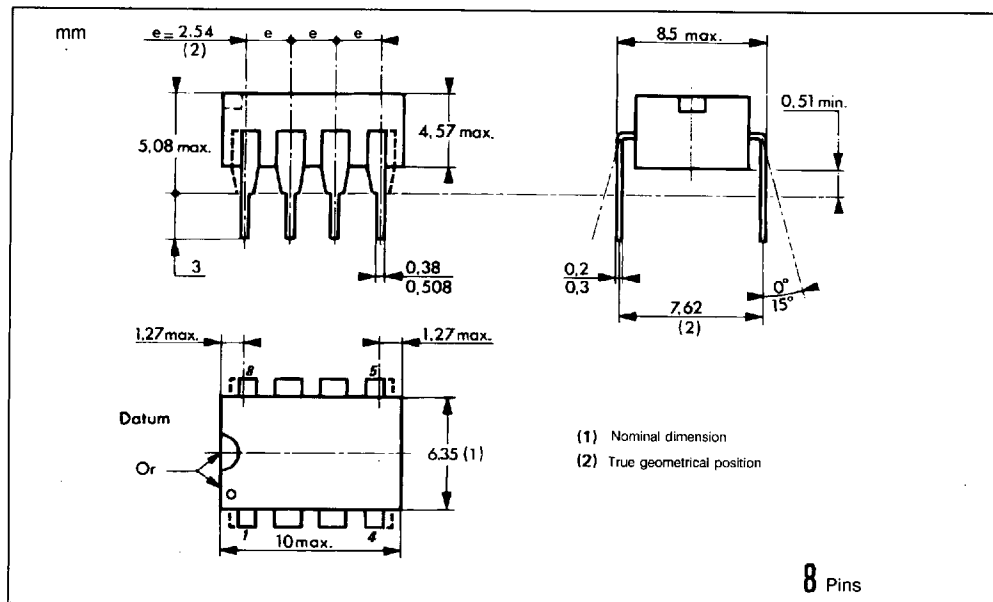


16 PINS - Plastic Micropackage



8 PINS - Plastic Dip

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ORDER CODES

Plastic	16 Pins Package : TSG8532XP
Ceramic	16 Pins Package : TSG8532XC
Cerdip	16 Pins Package : TSG8532XJ
Plastic	8 Pins Package : TSG85321XP

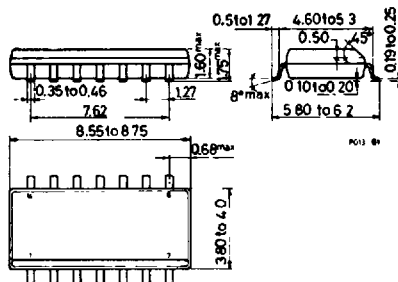
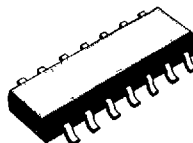
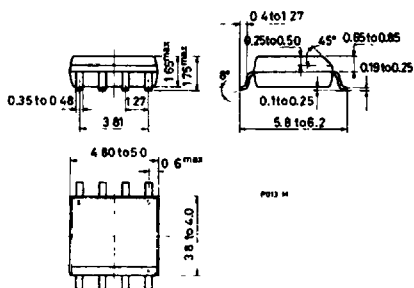
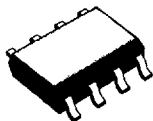
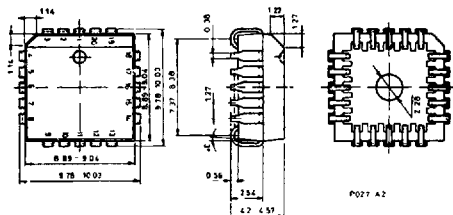
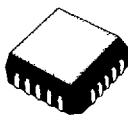
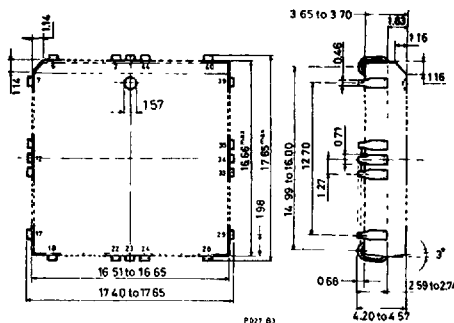
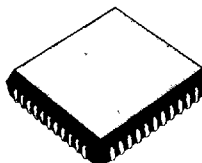
X : Temperature Range = C : 0°C + 70°C
 I : -25°C + 85°C
 V : -40°C + 85°C
 M : -55°C + 125°C

SO-8J

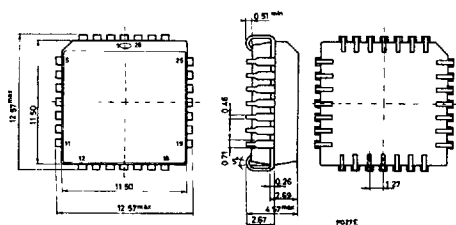
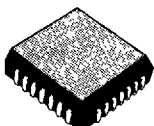
SO-14J

T-90-20

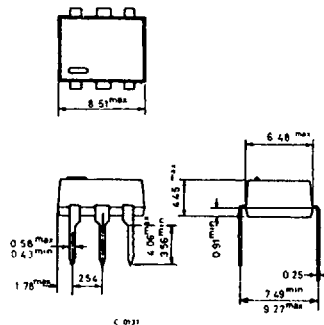
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**PLCC20****PLCC44**

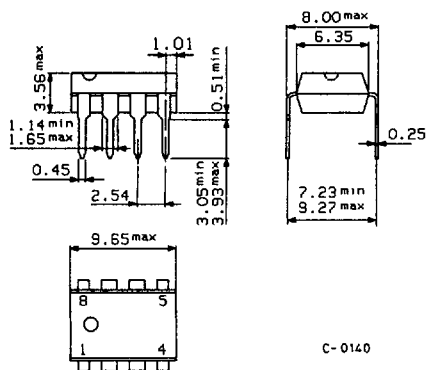
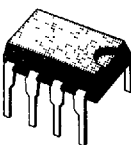
PLCC-28 Plastic Chip Carrier



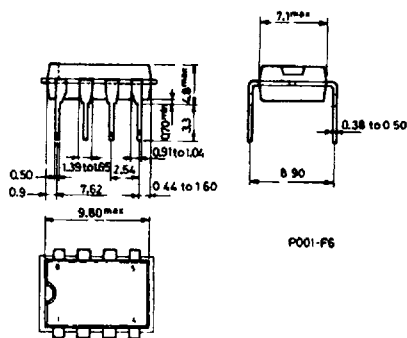
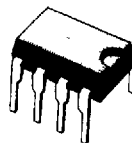
DIP-6



Minidip A Plastic

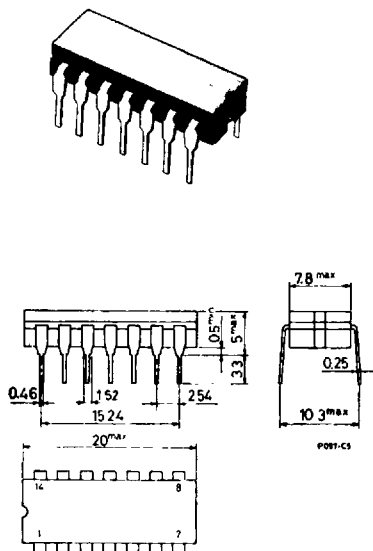


8 lead Plastic Minidip

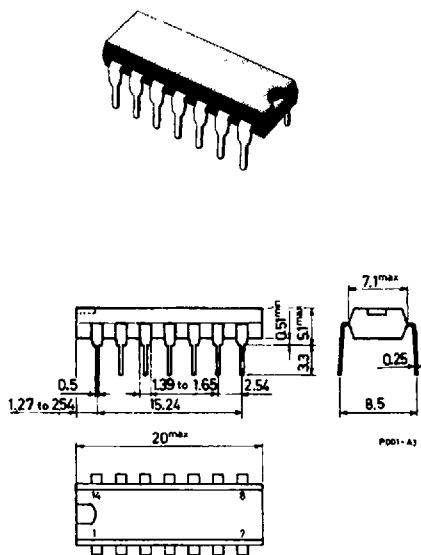


S G S-THOMSON

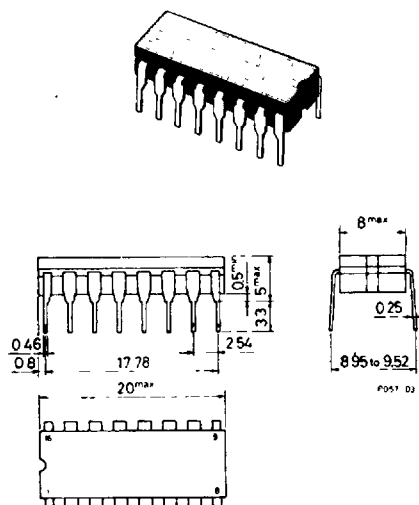
14 lead Ceramic Dip



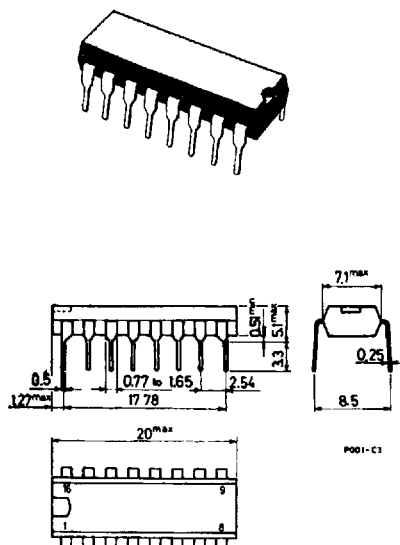
14 lead Plastic Dip



16 lead Ceramic Dip



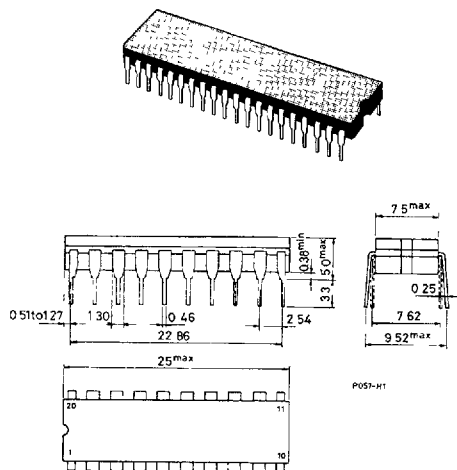
16 lead Plastic Dip (0.25)



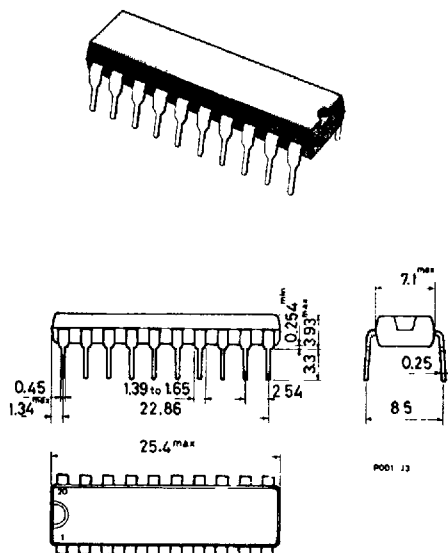
PACKAGES

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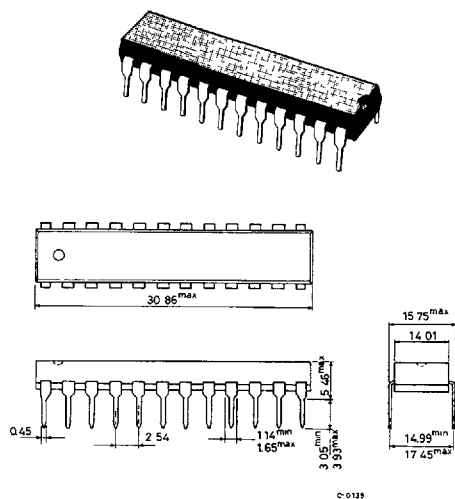
DIP-20 Ceramic



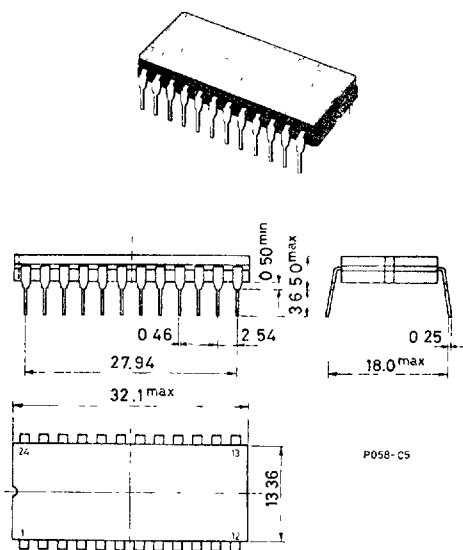
20 lead Plastic Dip (0.25)



DIP-24 Plastic

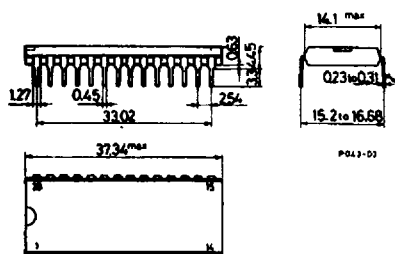
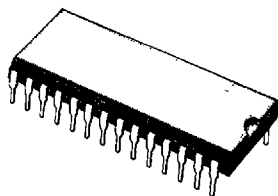


DIP-24 Ceramic (0.25)

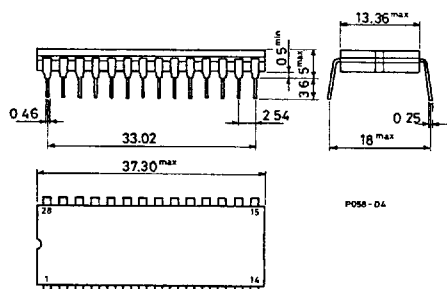
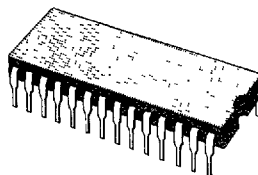


S G S-THOMSON

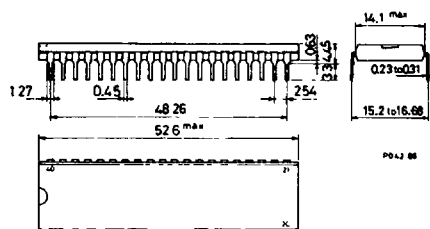
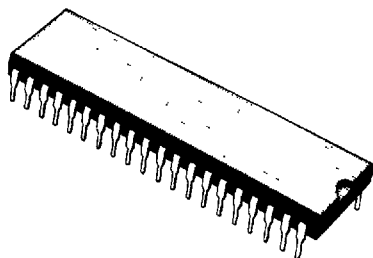
28 lead Plastic Dip



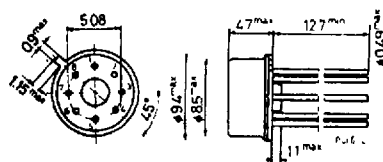
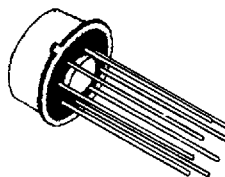
DIP-28 Ceramic (0.25)



40 lead Plastic Dip



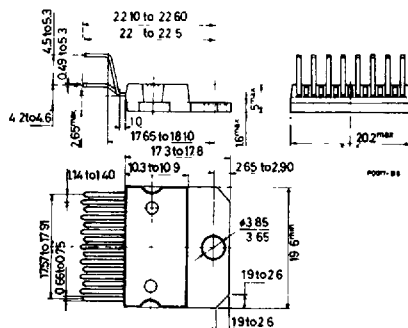
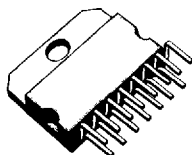
TO-99



PACKAGES

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MULTIWATT-15



FLEXIWATT-15

