



Product Specification

XBLW TDA2030A

18W Hi-Fi AMPLIFIER AND 35W DRIVER

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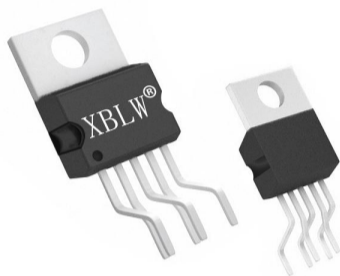


Descriptions

The XBLW TDA2030A is a monolithic integrated circuit in Pentawatt package, intended for use as an audio class AB audio amplifier.

Thanks to its high power capability the TDA2030A is able to provide up to 35W true rms power into 4 ohm load@ THD=10%, VS=36V, f=1KHz and up to 32W into 8ohm load @THD=10%, VS=44V, f =1KHz.

The high power and very low harmonic and crossover distortion (THD=0.05% typ, @ VS =44V, PO=0. 1 to 15W , RL=8ohm , f=100Hz to 15KHz) make the device most suitable for both HiFi and high class TV sets.)



TO-220B-5

Feature

- AB class power amplifier
- High working voltage, high output current
- Low harmonic distortion
- Automatically limit power consumption
- Equipped with thermal protection function
- Packaging form TO-220B

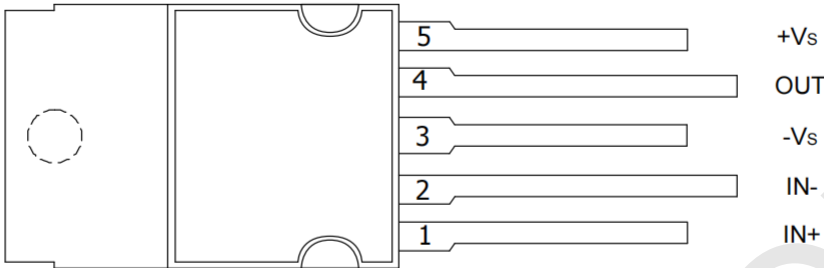
Applications

- Home audio system
- Public Address System
- Multimedia equipment
- Sound amplification equipment

Ordering Information

Product Model	Package Type	Marking	Packing	Packing Qty
XBLW TDA2030A	TO-220B	TDA2030A	Tube	1000Pcs/Box

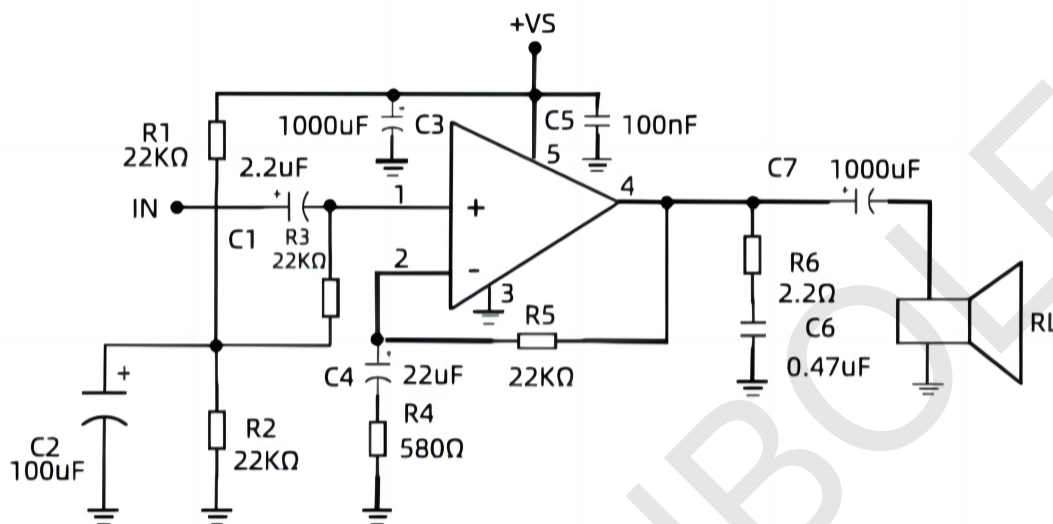
Pin Configurations



Pin Description

Pin No.	Pin Name	Function
1	IN+	Non inverting input
2	IN-	Inverting input
3	-Vs	-Vs
4	OUT	Output
5	+Vs	+Vs

Typical Applications



Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
Vs	Supply Voltage	± 25	V
Vi	Input Voltage	Vs	
Vi	Differential Input Voltage	± 15	V
Io	Peak Output Current (internally limited)	4.5	A
Ptot	Total Power Dissipation at Tcase = 90°C	25	W
Tstg, Tj	Storage and Junction Temperature	- 40 to + 150	°C

Thermal Data

Symbol	Parameter	Value	Unit
Rth (j-case)	Thermal Resistance Junction-case	3	°C/W
Toj	Operation Temperature	-20 to +125	°C

Electrical Characteristics

(Refer to the test circuit, $V_S = \pm 18V$, $T_{amb} = 25^\circ C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_S	Supply Voltage		± 4.5		± 25	V
I_d	Quiescent Drain Current			26	35	mA
I_b	Input Bias Current	$V_S = \pm 22V$		0.2	2	μA
V_{os}	Input Offset Voltage	$V_S = \pm 22V$		± 2	± 20	mV
I_{os}	Input Offset Current			± 20	± 200	nA
P_O	Output Power	$d = 0.5\%$, $G_v = 26dB$ $f = 40$ to $15KHz$ $R_L = 4\Omega$	24	28		W
		$R_L = 8\Omega$		18		W
		$V_S = \pm 22V, R_L = 8\Omega$	22	25		W
BW	Power Bandwidth	$P_o = 15W, R_L = 4\Omega$		40		kHz
SR	Slew Rate			6		V/ μsec
G_v	Open Loop Voltage Gain	$f=1kHz$		80		dB
G_v	Closed Loop Voltage Gain	$f=1kHz$	30	30.5	31	dB
d	Total Harmonic Distortion	$P_o=0.1$ to $14W, R_L=4\Omega$		0.08		%
		$f=40$ to $15KHz$, $f=1kHz$		0.03		%
		$P_o=0.1$ to $9W$				
		$f=40$ to $15000Hz, R_L=8\Omega$		0.5		%
d_2	Second Order CCIF Intermodulation Distortion			0.03		%
d_3	Third Order CCIF Intermodulation Distortion			0.08		%
e_N	Input Noise Voltage	$B = \text{Curve A}$		2		μV
		$B = 22Hz$ to $22kHz$		3	10	μV
i_N	Input Noise Current	$B = \text{Curve A}$		50		pA
		$B = 22Hz$ to $22kHz$		80	200	pA
S/N	Signal to Noise Ratio	$R_L = 4\Omega$, $R_g = 10k\Omega$, $B = \text{Curve A}$				
		$P_O = 15W$		106		dB
		$P_O = 1W$		94		dB
R_i	Input Resistance (pin 1)	(open loop) $f = 1kHz$	0.5	5		$M\Omega$
SVR	Supply Voltage Rejection	$R_L=4\Omega$, $R_g=22k\Omega$ $G_v = 26dB$, $f=100Hz$		45		dB
T_j	Thermal Shut-down Junction			140		$^\circ C$

Typical Characteristics

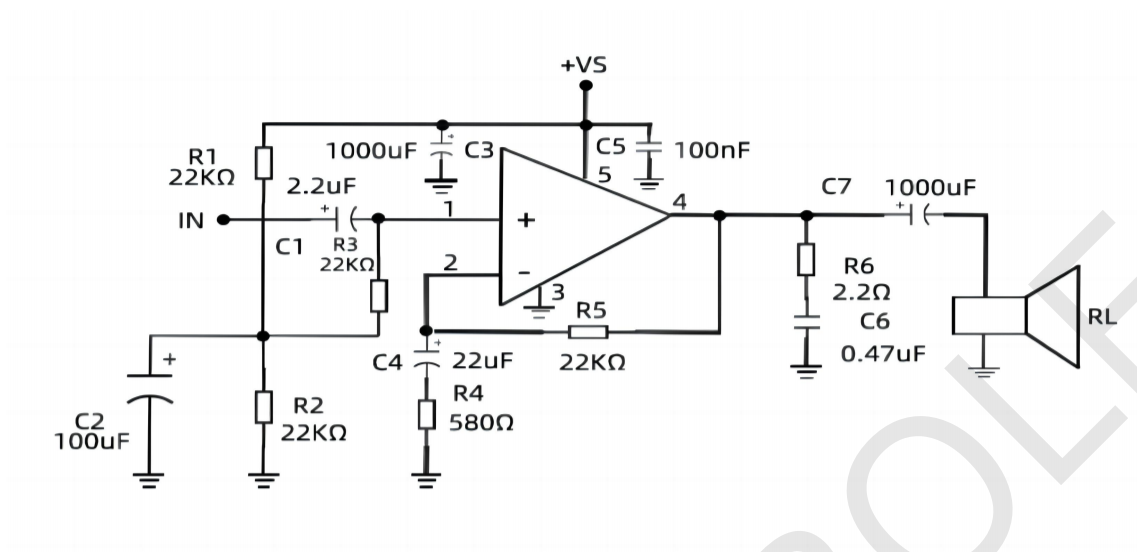


Figure 1 :Single supply amplifier

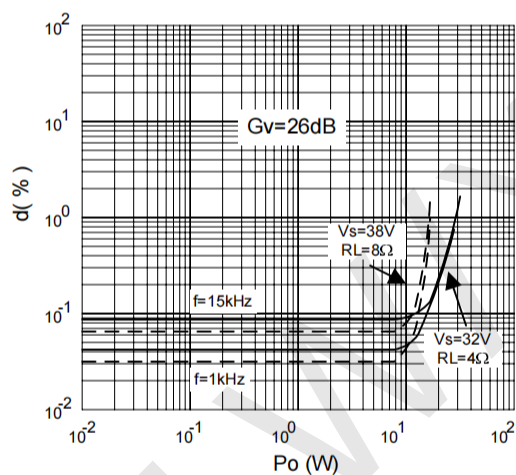


Figure.2 Total harmonic distortion vs. output power

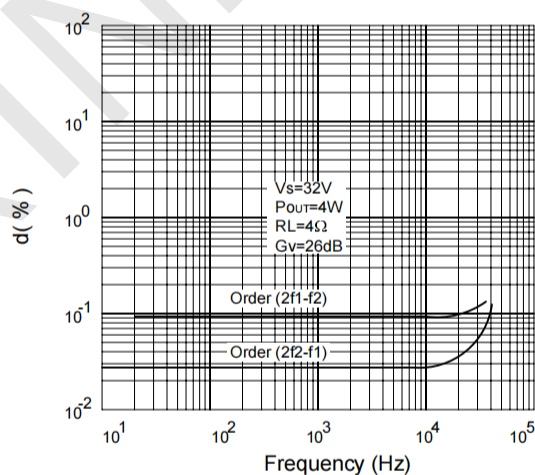


Figure.3 Two tone CCIF intermodulation distortion

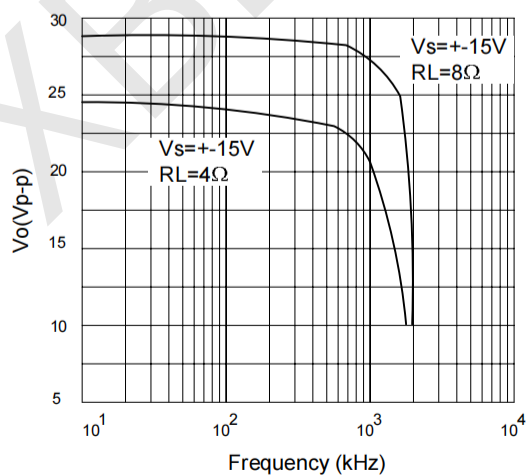


Figure.4 Large signal frequency response

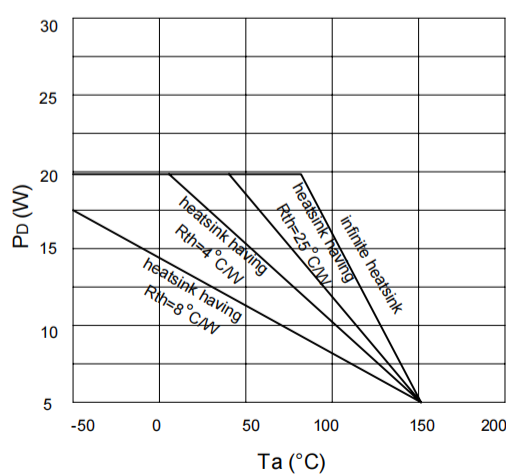


Figure.5 Maximum allowable power dissipation vs. ambient temperature

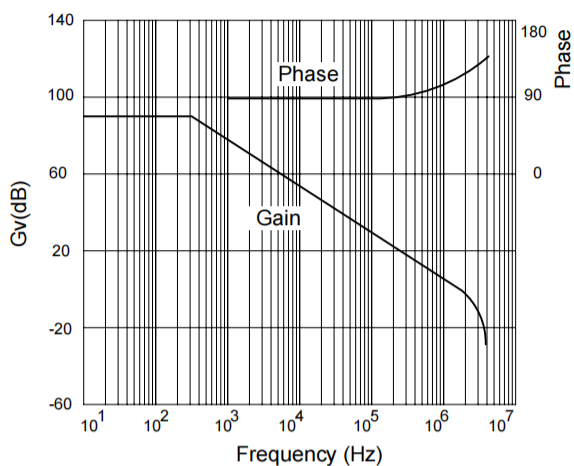


Figure.6 Open loop frequency response

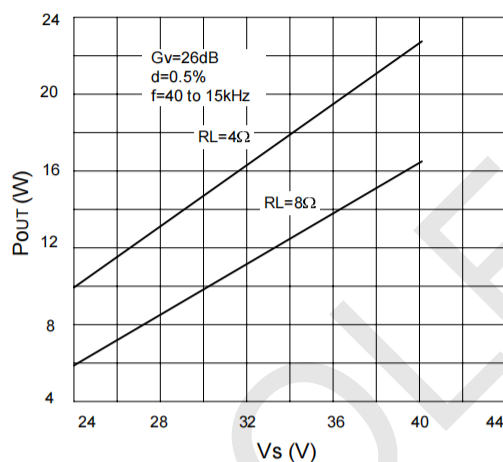


Figure.7 Output power vs. Supply voltage

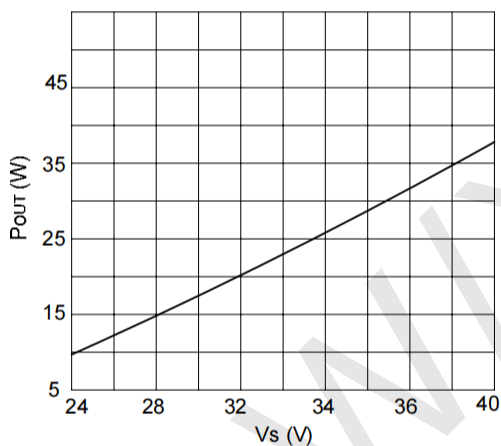


Figure.8 Output Power vs. Supply Voltage

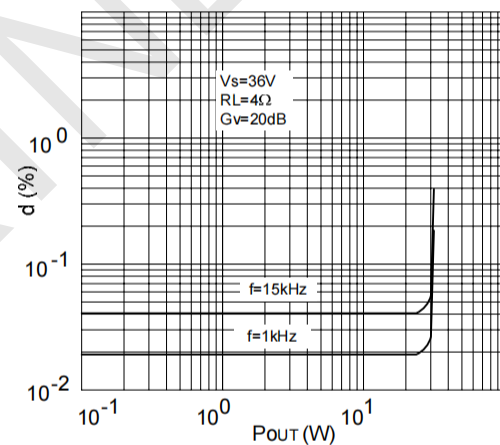


Figure.9 Total Harmonic Distortion vs. Output Power

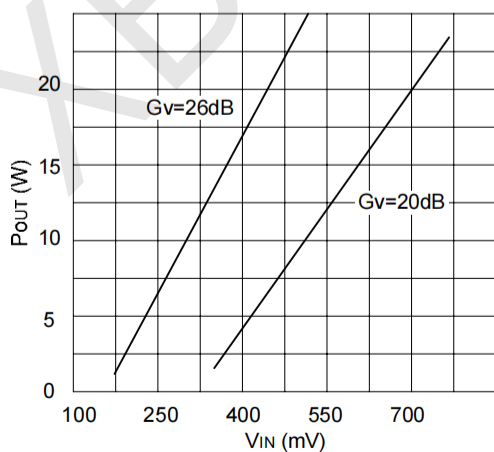


Figure.10 Output Power vs. Input Level

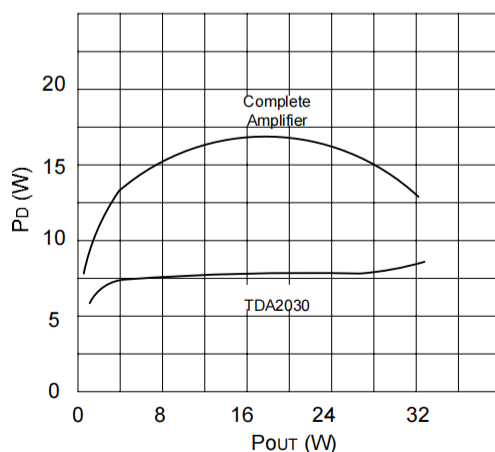


Figure.11 Power Dissipation vs. Output Power

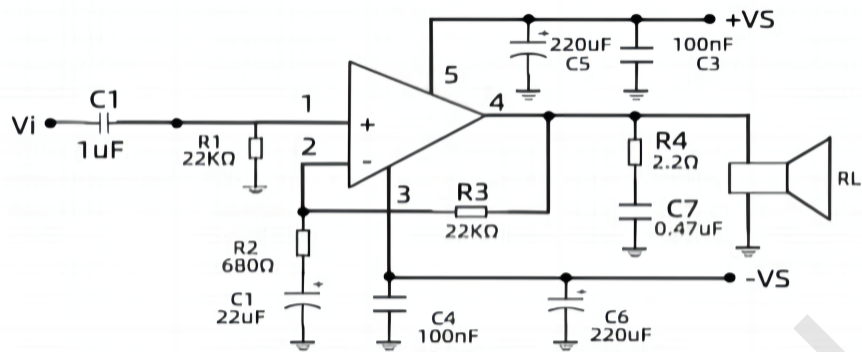


Figure 12 :Typical amplifier with spilt power supply

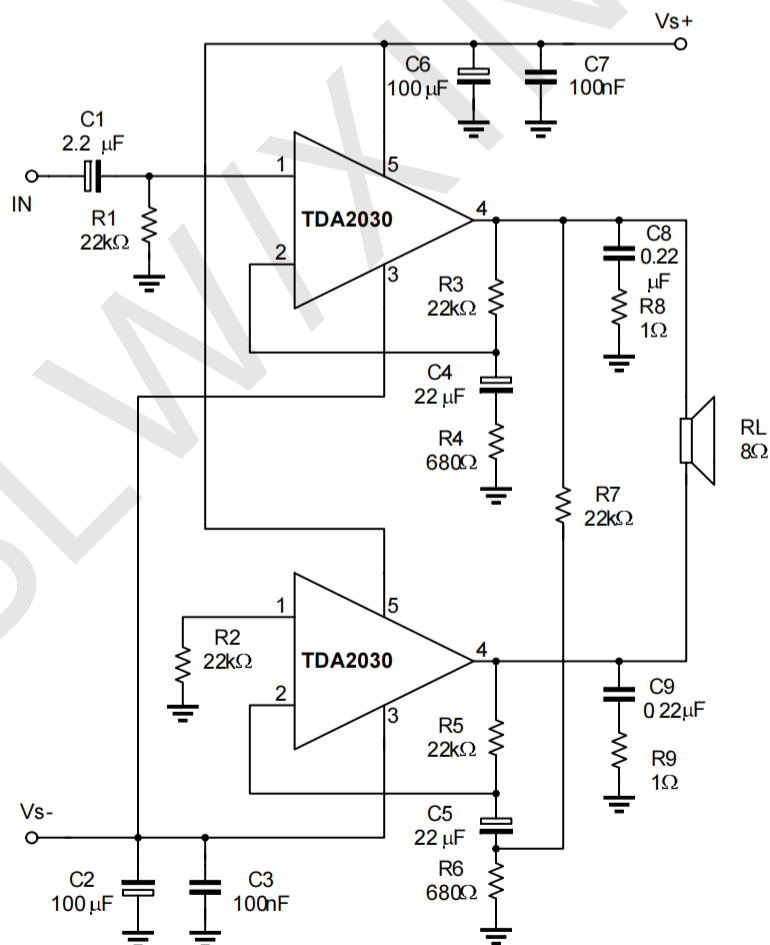
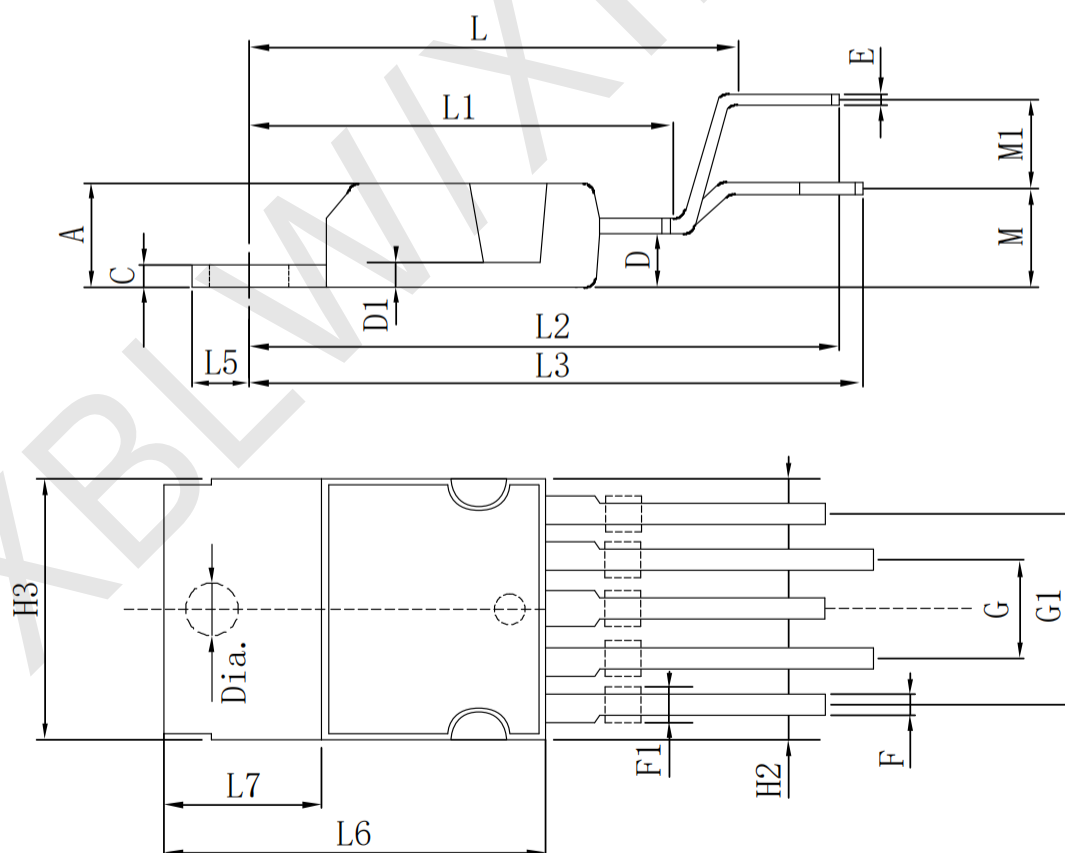


Figure 13 :Bridge Amplifier with Split Power Supply(PO=34W,Vs =±16V)

Package Information

· T0-220-B

Size Symbol	Dimensions In Millimeters		Size Symbol	Dimensions In Inches	
	Min (mm)	Max (mm)		Min (in)	Max (in)
A		4.800	A		0.189
C		1.370	C		0.054
D	2.400	2.800	D	0.094	0.110
D1	1.200	1.350	D1	0.047	0.053
E	0.350	0.550	E	0.014	0.022
F	0.800	1.050	F	0.031	0.041
F1	1.000	1.400	F1	0.039	0.055
G	3.400		G	0.126	0.142
G1	6.800		G1	0.260	0.276
H2		10.40	H2		0.409
H3	10.05	10.40	H3	0.396	0.409
L	17.85		L	0.703	
L1	15.75		L1	0.620	
L2	21.40		L2	0.843	
L3	22.50		L3	0.886	
L5	2.600	3.000	L5	0.102	0.118
L6	15.10	15.80	L6	0.594	0.622
L7	6.000	6.600	L7	0.236	0.260
M	4.500		M	0.177	
M1	4.000		M1	0.157	
Dia	3.650	3.850	Dia	0.144	0.152



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