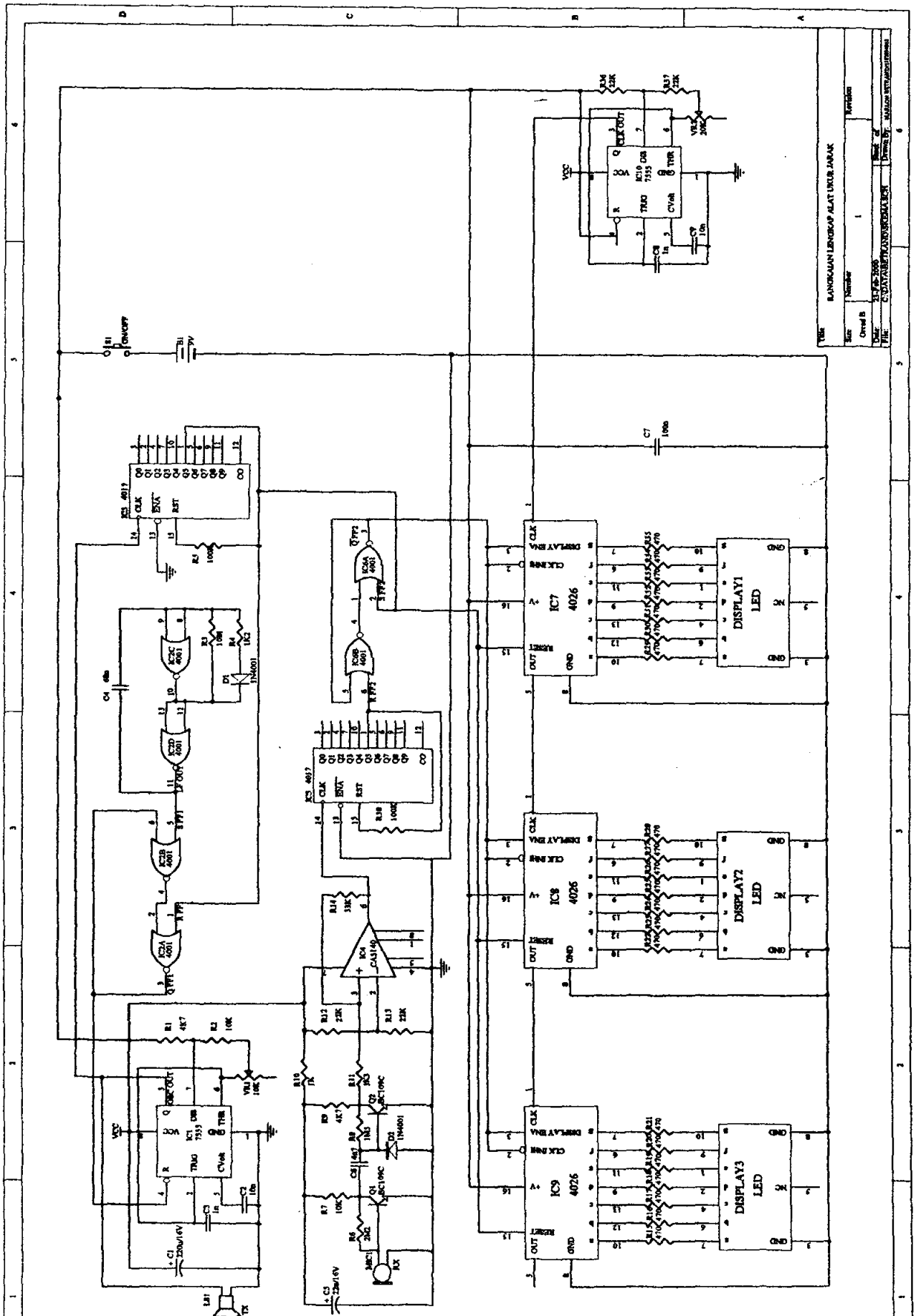
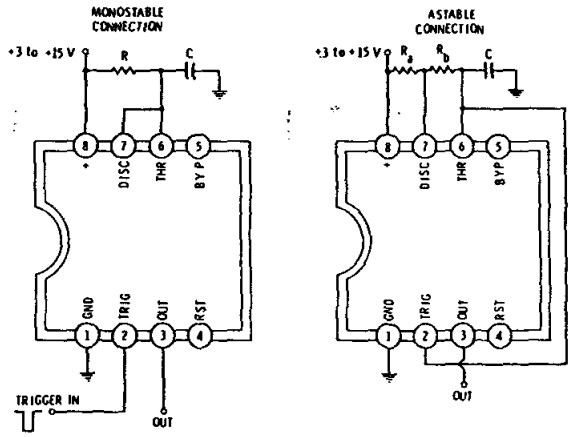
LAMPIRAN


RANGKAIAN LENGKAP ALAT UKUR JARAK
IC1 7555
IC2 4017
IC3 4017
IC4 4001
IC5 4001
IC6 4001
IC7 4026
IC8 4026
IC9 4026
IC10 7555
IC11 CA3140
DISPLAY1 LED
DISPLAY2 LED
DISPLAY3 LED
Q1 BC109C
Q2 BC109C
D1 1N4001
D2 1N4001
D3 1N4001
SPK
VCC
GND

L555/ICM 7555

CMOS TIMER—ASTABLE OR MONOSTABLE



This circuit may be used for astable or monostable in timing applications from microseconds to hours. Complete details for its use appear in Chapter 4.

As a monostable, the circuit is triggered by bringing the Trigger input momentarily below 2 volts. The output pulse width is determined by R and C, and the curves are shown in Fig. 4-44. R can vary from 1K to 100 megohms. C can range from 100 pF up.

As an astable, the circuit is free running. The charging time is determined by R_a and R_b in series with C. The discharging time is determined by C and R_b. Design curves appear in Fig. 4-40. The minimum value of R_a is 1K; the maximum value of $R_a + R_b$ is 100 megohms.

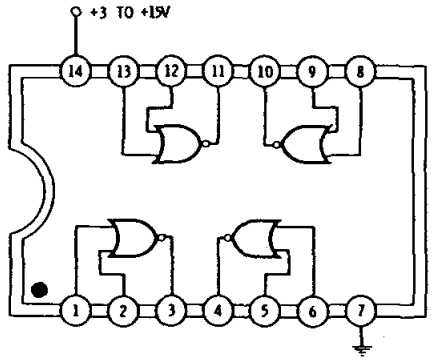
The RST input (pin 4) will drive the output low if it is grounded. If unused, it should be tied to the positive supply voltage. The Bypass input should be bypassed to ground with a suitable capacitor (0.1 μF upward) in critical timing applications.

The output is high during the monostable on time and low otherwise. The output is high during the astable charging time and low during the discharge time.

Operating current is approximately 80 microamperes.

4001

QUAD 2-INPUT NOR GATE



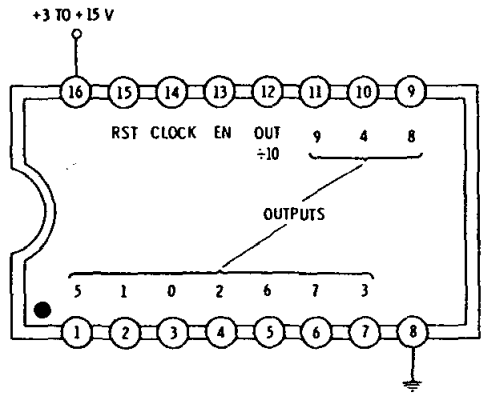
TOP VIEW

All four positive-logic NOR gates may be used independently. On any one gate, *with either* or both inputs *high*, the output is *low; with both* inputs *low*, the output is *high*. Functionally equivalent to the 7402 (TTL) and the 74C02 (CMOS).

Propagation delay is 25 nanoseconds at 10 volts and 60 nanoseconds at 5 volts. Total package current at 1 megahertz is 0.4 milliampere at 5 volts and 0.8 milliampere at 10 volts.

4017

DIVIDE-BY-10 COUNTER WITH 1-OF-10 OUTPUTS (*Synchronous*)



TOP VIEW

This is a fully synchronous decade, or divide-by-10, counter. It may be used to obtain a 1-of-10 decoded output or a square-wave output one-tenth the frequency of the input.

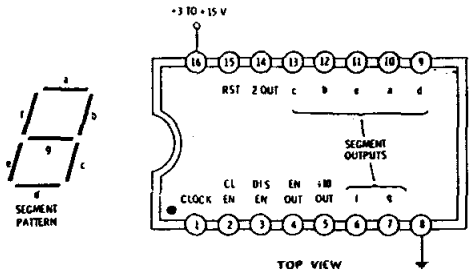
For normal operation, the clock enable and the reset should be at *ground*. The counter advances one count on the positive edge (ground-to-positive transition) of the clock. On any count, the decoded output goes *positive;* the others remain at ground. The OUT terminal is high for counts 0 through 4 and low for counts 5 through 9.

Making the reset input positive returns the counter to count zero. In this state, the "0" output and the OUT terminal are positive; the other outputs *are at ground. The reset must* be returned to ground to allow counting to continue. A positive voltage on the clock enable will inhibit (prevent count advance) clock operation.

The clock must be noiseless and have only one ground-to-positive transition per desired count. The clock rise time should be faster than 5 microseconds. An external gate will allow division by 1 through 10. Maximum clock frequency *is 5 megahertz at 10 volts and 2.5 megahertz at 5 volts. Total* package current at 1 megahertz is 0.4 milliampere at 5 volts and 0.8 milliampere at 10 volts, unloaded.

4026

DECADE (÷10) COUNTER WITH 7-SEGMENT DECODED OUTPUT (Synchronous)



This synchronous decade, or divide-by-10, counter provides internal decoding to drive a 7-segment display. It does *not* have internal count storage, nor does it provide enough output current to directly drive higher-current displays. A divide-by-10 square-wave output is also available.

In normal operation, reset and clock enable are held at *ground* and the display enable is held positive. The counter advances one count on each *ground-to-positive* (positive edge) *transition* of the clock input.

There are two types of outputs. At the ÷10 output, a square wave that is high for counts 0 through 4 and low for counts 5 through 9 results. At the *a* through *g* outputs, a *high* state is produced if a display segment is to be *lit*. Segments *b* and *c* are used for the "1" output. Note that the "6" output includes segment *a* and the "9" output includes segment *d*. Available drive current is 1.2 milliamperes at 5 volts and 5 milliamperes at 10 volts. The "2 OUT" goes low only on count 2.

Fluorescent displays and newer LED displays may be directly driven by the outputs. High-current light-emitting diode and neon displays require external drivers. Liquid-crystal displays require external "ac" drive. Note that the outputs go *high* if the segment is to be *lit*.

The counter is reset to zero by bringing the RST terminal high. An a-b-c-d-e-f high output results, along with a high on the ÷10 output line. The reset must be returned to ground when counting is to continue. A high on the CL EN inhibits the clock operation and ignores counts. A low on the DIS EN turns off the display by making the *a* through *g* outputs low. This may be used to conserve display power or to provide a variable duty cycle brightness control. A slightly delayed EN OUT also follows the DIS EN input.

The clock must be noiseless and have only one ground-to-positive transition per desired count. Clock rise and fall times should be faster than 5 μs.

Maximum clock frequency is 5 megahertz at 10 volts and 2.5 megahertz at 5 volts. Total package current at 1-megahertz clock rate with unloaded outputs is 0.4 milliampere at 5 volts and 0.8 milliampere at 10 volts.

CA 3140, CA 3140A, CA 3140B
Penguat Operasi *(Operational Amplifiers)* BiMOS

Dengan jalanmasuk MOS/FET jalankeluar dwikutub *(bipolar)*

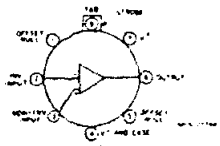
CA 3140B, CA 3140A, dan CA 3140 adalah *penguat-penguat* operasi rangkaian terintegrasi yang mengkombinasikan keunggulan transistor PMOS tegangan-tinggi dan keunggulan transistor dwikutub *(bipolar)* tegangan-tinggi di dalam *chip* monolit tunggal. Oleh keunikan kombinasi teknologi ini, peranti ini dapat menyediakan bagi para perancang, untuk yang pertama kali, kualitas kerja yang dimiliki khusus penguat operasi COS/MOS CA 3130 dan sifat-sifat yang ada pada seri 741 dari penguat operasi standar industri.

Penguat-penguat operasi CA 3140, CA 3140A, dan CA 3140 BiMOS memiliki sifat-sifat transistor-transistor MOS/FET yang terproteksi berpintu (PMOS) di rangkaian masukannya guna memberinya impedansi masukan sangat-tinggi, arus masukan sangat-rendah, dan kualitas-kerja kecepatan-tinggi. CA 3140B beroperasi dengan tegangan catu dari 4 hingga 44 volt; CA 3140A dan CA 3140 dari 4 hingga 36 volt (pencatu tunggal ataupun ganda). Penguat-penguat operasi ini secara intern terkompensasi fasanya guna memperoleh pengoperasian [illegible]

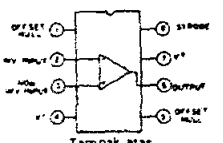
Tarif Maksimum, harga-harga maksimum mutlak

	CA 3140, CA 3140A	CA 3140B
Tegangan Catu DC (Antara terminal V^+ dan V^-)	36 V	44 V
Tegangan-masukan ragam diferensial	±8 V	±8 V
Tegangan-masukan DC moda-tunggal	$(V^+ + 8\ V) - (V^- - 0{,}5\ V)$	
Arus terminal-masukan		1 mA
Borosan (disipasi) peranti:		
Tanpa pengisap panas:		
sampai 55° C		630 mW
di atas 55° C berkurang secara linier		6,67 mW/° C
dengan pengisap panas:		
sampai 55° C		1 W
di atas 55° C berkurang secara linier		16,7 mW/° C
Jelajahan Suhu:		
beroperasi (semua tipe)		−55 – +125° C
dalam simpanan (semua tipe)		−65 – +150° C
Lama-waktu Hubungsingkat keluaran*		tak tertentu
Suhu timah (Selama penyolderan): dalam jarak 1/16 ± 1/32 inch (1,59 ± 0,79 mm) dari rumah, selama 10 detik maks:		+265° C

* Hubungsingkat dapat dikenakan ke bumi atau ke salah satu pencatu.



Tampak atas
Akhiran S dan T



Tampak atas
Akhiran E

Diagram fungsi dari seri CA 3140

dalam operasi sebagai pengikut berpenguatan 1 (satu); dan di samping itu, kalau diinginkan penyurutan-frekuensi tambahan, tersedialah terminal-terminal untuk tambahan kondensator ek-

Juga tersedia terminal-terminal untuk digunakan dalam penerapan yang meminta penolan tegangan-gelincir masukan *(input offset-voltage nulling)*. Pemakaian transistor efek-medan PMOS di

kan kemampuan tegangan-masukan *ragam-tunggal* sampai serendah 0,5 volt di bawah terminal negatif catuan, suatu atribut penting bagi terapan catuan tunggal. Tingkat keluaran menggunakan transistor-transistor dwikutub, juga *proteksi* terhadap kerusakan oleh penghubungsingkatan terminal beban terhadap bumi ataupun terhadap salah satu saluran catuan.

Seri CA 3140 memiliki tata-*letak terminal* 8-kawat seperti yang ada pada penguat-penguat operasi "741" dan standar industri yang lain. Mereka tersedia dalam kemasan gaya TO-5 8-kawat standar (akhiran T), atau dalam kemasan gaya TO-5 8-kawat dalam *dual-in-line* 'DIL-CAN' (akhiran S). CA 3140A tersedia dalam bentuk *chip* (akhiran H). CA 3140A dan CA 3140 juga dapat diperoleh dalam kemasan plastik 8-kawat *dual-in-line* (akhiran Mini-DIP-E). CA 3140B dimaksudkan untuk dioperasikan dengan tegangan catu antara 4 hingga 44 volt, guna pengoperasian yang meminta spesifikasi derajat premium, dan pada limit-limit elektrik guna untuk beroperasi dalam suhu *antara* −55° C *hingga* +125° C. CA 3140A dan CA 3140 berguna untuk beroperasi dari tegangan catu sampai 36 volt (±18 volt). Semua tipe dapat dioperasikan dengan aman dalam *jelajahan* suhu dari −55° C hingga +125° C.

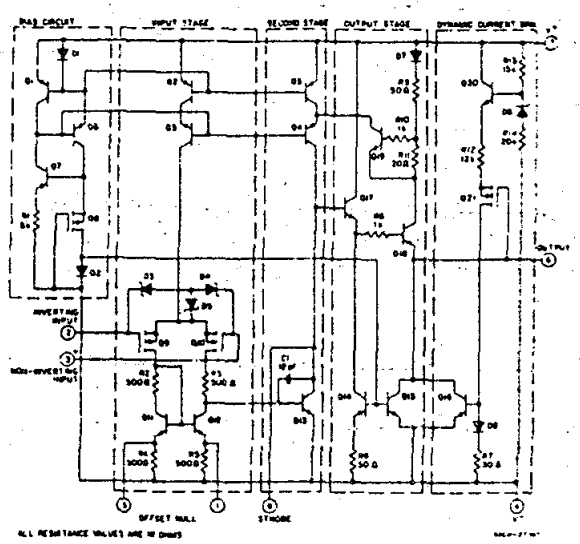


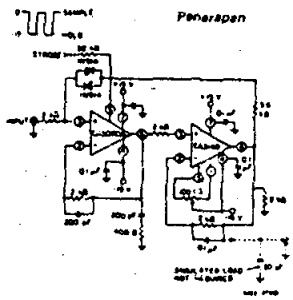
Diagram skema dari seri CA 3140

Karakteristik Elektrik Lumrah

CHARACTERISTIC		TEST CONDITIONS $V^+ = +15$ V, $V^- = -15$ V, $T_A = 25°C$	CA3140B (T,S)	CA3140A (T,S,E)	CA3140 (T,S,E)	UNITS
Input Offset Voltage Adjustment Resistor		Typ. Value of Resistor Between Term. 4 and 5 or 4 and 1 to Adjust Max. V_{IO}	43	18	47	kΩ
Input Resistance	R_I		1.5	1.5	1.5	TΩ
Input Capacitance	C_I		4	4	4	pF
Output Resistance	R_O		60	60	60	Ω
Equivalent Wideband Input Noise Voltage	e_n	BW = 140 kHz, R_S = 1 MΩ	48	48	48	μV
Equivalent Input Noise Voltage	e_n	f = 1 kHz, R_S = 100 Ω	40	40	40	$nV/\sqrt{Hz}$
		f = 10 kHz, R_S = 100 Ω	12	12	12	$nV/\sqrt{Hz}$
Short-Circuit Current to Opposite Supply: Source	I_{OM^+}		40	40	40	mA
Sink	I_{OM^-}		18	18	18	mA
Gain-Bandwidth Product	f_T		4.5	4.5	4.5	MHz
Slew Rate	SR		9	9	9	V/μs
Sink Current From Terminal 8 To Terminal 4 to Swing Output Low			220	220	220	μA
Transient Response: Rise Time	t_r	R_L = 2 kΩ, C_L = 100 pF	0.08	0.08	0.08	μs
Overshoot			10	10	10	%
Settling Time at 10 V_{p-p}, 1 mV	t_s	R_L = 2 kΩ, C_L = 100 pF, Voltage Follower	4.5	4.5	4.5	μs
Settling Time at 10 V_{p-p}, 10 mV	t_s	R_L = 2 kΩ, C_L = 100 pF, Voltage Follower	1.4	1.4	1.4	μs

Sifat-sifat:

- Tingkat masukan MOS/FET
  a. Impedansi masukan sangat tinggi, lumrah: (Z_{IN})–1,5 TΩ
  b. Arus masukan sangat rendah: (I_I)–lumrah: 10 pA pada ±15 V
  c. Tegangan gelincir masukan *(offset)* rendah; (V_{IO})–2 mV maks
  d. Jelajahan tegangan-masukan ragam-tunggal *(common mode)* lebar; (V_{ICR}) — dapat diayunkan sampai 0,5 volt di bawah saluran tegangan-catuan negatif
  e. Ayunan keluaran menyempurnakan jelajahan ragam-tunggal masukan
  f. Tingkat masukan kokoh — pengamanan oleh dioda dwikutub.
- Dalam kebanyakan penerapan menggantikan 741 tipe industri.
- Termasuk berbagai kategori penguat operasi seperti: penerapan untuk keperluan umum, masukan FET, jalurlebar (laju lantingan tinggi)



Rangkaian cuplik dan penggam.

- *Pengoperasian dari* pencatu tunggal atau ganda, dari 4 hingga 44 volt
- Terkompensasi intern
- Karakteristik khusus dengan pengoperasian dari ±15 volt, dan bagi sistem catu TTL, dengan pengoperasian sampai serendah 4 volt
- Lebarjalur lebar; penguatan adalah 1 *(satu)* pada 4,5 MHz, dari ±15 V atau 30 V; pada 3,7 MHz dari 5 V
- Pengikut-tegangan dengan laju lantingan *(slew rate)* tinggi — 9 V/μdet
- Waktu endap *(settling time)* cepat — lumrah: 1,4 μdet hingga 10 mV dengan isyarat 10 V_{pp}
- Keluaran mengayun sampai dalam 0,2 V dari catuan negatif
- Tingkat keluaran yang dapat digasing *(strobable)*

Penerapan:

- Penguat-penguat catuan-tunggal mengacu ke bumi, dalam instrumentasi tetengan dan otomobil
- Penguat cuplik dan penggam *(sample and hold)*
- Penggetarganda/pewaktu *(timers)* waktu-lama (mikrodetik-menit-jam)
- Instrumentasi arus foto
- Detektor puncak
- Tapis aktif
- Penanding
- Alat-kopling *(interface)* dalam sistem TTL 5 V dan sistem-sistem dengan catuan tegangan rendah lain
- Penerapan penguat operasi semua standar
- Generator fungsi
- Pengatur nada
- Pencatu daya
- Instrumen-instrumen tentengan
- Sistem alarm gawat *(intrusion)*

TRANSISTOR NUMBER	P M O A L T	PACK-AGE	LEAD INFO	V_{CE} MAX	V_{CB} MAX	V_{EB} MAX	I_C MAX	T_J MAX	P TOT	F_T MIN	C_{OB} MAX	H_{FE}	H_{FE} BIAS	USE	MFR	ALTERNATIVES AND NOTES	
AUY37-8	P G	TO3	L06	100V	80V	40V	10A	100C	30WH	120K	-	50/110	1A	AHH	STM	-	
AUY38	P G	TO3	L06	130V	80V	2V	10A	100C	30WH	400K	-	30mn	5A	RHH	STM	AU106	2N6325
AUY38-4	P G	TO3	L06	130V	70V	2V	10A	100C	30WH	400K	-	30/55	5A	RHH	STM	-	
AUY38-5	P G	TO3	L06	130V	70V	2V	10A	100C	30WH	400K	-	45/110	5A	RHH	STM	-	
AUY38-8	P G	TO3	L06	130V	70V	2V	10A	100C	30WH	400K	-	90/180	5A	RHH	STM	-	
AUZ11	P G	OBS	OBS	50V	20V	-	1A	75C	6WC	1M	-	30mn	500mA	AMS	TFK	ASZ16	2N1536
AUZ11D	P G	OBS	OBS	80V	20V	-	1A	75C	6WC	1M	-	30mn	500mA	AMS	OBS	ASZ16	2N1536
BC100	N S	TO5	L04	350V	300V	-	150mA	200C	590mWF	-	-	20mn	10mA	AME	TFK	BF337	2N4927
BC107	N S	TO18	L01	50V	45V	6V	100mA	175C	300mWF	150M	5P0	110mn	2mA	ALG	PHI	BC107	2N929
BC107A	N S	TO18	L01	50V	45V	6V	100mA	175C	300mWF	150M	5P0	110mn	2mA	ALG	PHI	BC107	2N929
BC107AP	N S	TO92	L74	50V	45V	5V	100mA	175C	300mWF	150M	5P0	110mn	2mA	ALG	ZTX	BC237B	2N5825
BC107AQ	N S	TO18	L01	-	-	-	-	-	-	-	-	-	-	ALG	PHI	BC107A to BS9000	
BC107B	N S	TO18	L01	50V	45V	6V	100mA	175C	300mWF	150M	5P0	200mn	2mA	ALG	PHI	BC107	2N929
BC107BP	N S	TO92	L74	50V	45V	6V	100mA	175C	300mWF	150M	4P5	200mn	2mA	ALG	ZTX	BC237B	2N5825
BC107C	N S	TO18	L01	50V	45V	6V	100mA	175C	300mWF	150M	5P0	450mn	2mA	ALH	MOT	BC107C	2N2510
BC107CP	N S	TO92	L74	50V	45V	6V	100mA	175C	300mWF	150M	5P0	450mn	2mA	ALH	ZTX	BC549C	2N6006
BC107CQ	N S	TO18	L01	-	-	-	-	-	-	-	-	-	-	ALG	PHI	BC107C to BS9000	
BC107P	N S	TO92	L74	50V	45V	6V	100mA	175C	300mWF	150M	5P0	110mn	2mA	ALG	ZTX	BC237B	2N5825
BC108	N S	TO18	L01	30V	20V	5V	100mA	175C	300mWF	150M	6P0	120mn	2mA	ALG	PHI	BC107	2N929
BC108A	N S	TO18	L01	30V	20V	5V	100mA	175C	300mWF	150M	6P0	120mn	2mA	ALG	PHI	BC107	2N929
BC108B	N S	TO18	L01	30V	20V	5V	100mA	175C	300mWF	150M	6P0	200mn	2mA	ALG	PHI	BC107	2N929
BC108C	N S	TO18	L01	30V	20V	5V	100mA	175C	300mWF	150M	6P0	420mn	2mA	ALG	PHI	BC107	2N929
BC108P	N S	TO92	L74	30V	20V	5V	100mA	175C	300mWF	150M	6P0	120mn	2mA	ALG	ZTX	BC237B	2N5825
BC108AP	N S	TO92	L74	30V	20V	5V	100mA	175C	300mWF	150M	6P0	120mn	2mA	ALG	ZTX	BC237B	2N5825
BC108BP	N S	TO92	L74	30V	20V	5V	100mA	175C	300mWF	150M	6P0	200mn	2mA	ALG	ZTX	BC237B	2N5825
BC108CP	N S	TO92	L74	30V	20V	5V	100mA	175C	300mWF	150M	6P0	420mn	2mA	ALG	ZTX	BC549C	2N6006
BC109	N S	TO18	L01	30V	20V	5V	100mA	175C	300mWF	150M	6P0	180mn	2mA	ALG	PHI	BC109	2N930
BC109A	N S	TO18	L01	30V	20V	5V	100mA	175C	300mWF	150M	6P0	120mn	2mA	ALN	PHI	BC109B	2N2586
BC109B	N S	TO18	L01	30V	20V	5V	100mA	175C	300mWF	150M	6P0	200mn	2mA	ALN	PHI	BC109	2N930
BC109C	N S	TO18	L01	30V	20V	5V	100mA	175C	300mWF	150M	6P0	420mn	2mA	ALN	PHI	BC109	2N930
BC109P	N S	TO92	L74	30V	20V	5V	100mA	175C	300mWF	150M	6P0	120mn	2mA	ALN	ZTX	BC549C	2N6006
BC109BP	N S	TO92	L74	30V	20V	5V	100mA	175C	300mWF	150M	6P0	200mn	2mA	ALN	ZTX	BC549C	2N6006
BC109CP	N S	TO92	L74	30V	20V	5V	100mA	175C	300mWF	150M	6P0	420mn	2mA	ALN	ZTX	BC549C	2N6006
BC110	N S	TO18	L01	60V	60V	6V	50mA	175C	300mWF	100M	5P0	30mn	2mA	ALG	TFK	BC107	A157
BC111	N S	X14	X14	25V	12V	4V	50mA	175C	100mWF	40M	-	80mn	10mA	ALG	RTC	BC148	
BC112	N S	X15	X15	20V	12V	3V	50mA	-	30mWF	40M	-	80mn	200uA	ALN	RTC	BC148	
BC112G	N S	X15	X15	20V	12V	3V	50mA	125C	30mWF	40M	-	280mn	200uA	ALN	PHI	BFS36	2N930
BC112R	N S	X15	X15	20V	12V	3V	50mA	125C	30mWF	40M	-	80/200	200uA	ALN	PHI	BFS36	2N930
BC112Y	N S	X15	X15	20V	12V	3V	50mA	125C	30mWF	40M	-	140mn	200uA	ALN	PHI	BFS36	2N930
BC113	N S	TO106	L17	30V	25V	6V	50mA	125C	200mWF	60M	5P0	200mn	1mA	ALN	STM	BC209	2N4967
BC113A	N S	TO106	L17	40V	40V	6V	50mA	125C	200mWF	60M	5P0	200mn	1mA	ALN	OBS	BC209	2N4967
BC114	N S	TO106	L17	30V	25V	6V	50mA	125C	200mWF	60M	5P0	200mn	1mA	ALN	STM	BC209	2N4967
BC114A	N S	TO106	L17	40V	40V	6V	50mA	125C	200mWF	60M	5P0	200mn	1mA	ALN	OBS	BC209	2N4967
BC115	N S	TO105	L04	40V	30V	5V	100mA	125C	300mWF	40M	25P	80mn	10mA	ALG	STM	BC237	2N5825
BC116	P S	TO105	L04	45V	40V	5V	100mA	125C	300mWF	130M	8P0	35mn	10mA	ALG	STM	BC307	2N6015
BC116A	P S	TO105	L04	45V	40V	5V	600mA	125C	300mWF	100M	10P	60/150	60mA	AMG	STM	BFR23	2N4036
BC117	N S	TO105	L04	120V	120V	6V	50mA	125C	300mWF	60M	3P0	30mn	30mA	ALH	STM	BC145	2N1990
BC118	N S	TO106	L17	45V	45V	4V	100mA	125C	200mWF	200M	3P5	50mn	5mA	ALG	STM	BC237	2N5825
BC119	N S	TO39	L04	60V	30V	5V	1A	200C	800mWF	40M	25P	40mn	150mA	AMG	STM	BFY51	2N2297
BC120	N S	TO39	L01	60V	30V	5V	1A	200C	800mWF	40M	25P	20mn	150mA	AMG	STM	BFY51	2N2297
BC121	N S	X16	X16	5V	5V	5V	50mA	125C	90mWF	20M	-	25mn	250uA	ALN	SIE	BC146	
BC121B	N S	X16	X16	5V	5V	5V	50mA	125C	90mWF	20M	-	450mn	250uA	ALN	SIE	BC146	2N3707
BC121G	N S	X16	X16	5V	5V	5V	50mA	125C	90mWF	20M	-	240mn	250uA	ALN	SIE	BC146	2N3707
BC121W	N S	X16	X16	5V	5V	5V	50mA	125C	90mWF	20M	-	75mn	250uA	ALN	SIE	BC146	2N3707
BC121Y	N S	X16	X16	5V	5V	5V	50mA	125C	90mWF	20M	-	125mn	250uA	ALN	SIE	BC146	2N3707
BC122	N S	X16	X16	30V	20V	5V	50mA	125C	90mWF	20M	-	25mn	250uA	ALN	SIE	BC146	
BC122B	N S	X16	X16	30V	20V	5V	50mA	125C	90mWF	20M	-	760mn	250uA	ALN	SIE	BC146	2N3707
BC122G	N S	X16	X16	30V	20V	5V	50mA	125C	90mWF	20M	-	240mn	250uA	ALN	SIE	BC146	2N3707
BC122U	N S	X16	X16	30V	20V	5V	50mA	125C	90mWF	20M	-	125mn	250uA	ALN	SIE	BC146	2N3707
BC122W	N S	X16	X16	30V	20V	5V	50mA	125C	90mWF	20M	-	75mn	250uA	ALN	SIE	BC146	2N3707
BC123	N S	X16	X16	45V	30V	5V	50mA	125C	90mWF	20M	-	25mn	250uA	ALN	SIE	BC146	
BC123G	N S	X16	X16	45V	30V	5V	50mA	125C	90mWF	20M	-	240mn	250uA	ALN	SIE	BC146	2N3707
BC123W	N S	X16	X16	45V	30V	5V	50mA	125C	90mWF	20M	-	75mn	250uA	ALN	SIE	BC146	2N3707
BC123Y	N S	X16	X16	45V	30V	5V	50mA	125C	90mWF	20M	-	125mn	250uA	ALN	SIE	BC146	2N3707
BC125	N S	TO106	L04	60V	30V	5V	500mA	125C	300mWF	40M	25P	30mn	150mA	AMG	STM	BFY50	2N2297
BC126A	N S	TO105	-	80V	40V	5V	500mA	125C	300mWF	40M	25P	30mn	50mA	AMG	OBS	BCW36	2N5818
BC126B	N S	TO106	L17	60V	30V	5V	500mA	125C	300mWF	40M	25P	40/120	150mA	AMG	STM	BFY50	2N2297
BC126	P S	TO105	L17	35V	30V	5V	600mA	125C	300mWF	100M	8P0	40mn	10mA	AMG	FCD	BC328	2N5819
BC126A	P S	TO106	L17	40V	40V	5V	600mA	125C	300mWF	100M	8P0	30mn	50mA	AMG	OBS	BC327	2N5819
BC127	N S	OBS	OBS	25V	20V	5V	50mA	125C	75mWF	20M	10P	125mn	1mA	ALN	FCD	BC148	
BC128	N S	OBS	OBS	25V	20V	5V	50mA	125C	100mWF	20M	40P	150mn	1mA	ALN	FCD	BC146	
BC129	N S	TO18	L01	50V	45V	5V	100mA	165C	175mWF	150M	6P0	125mn	2mA	ALG	TFK	BC107	A157
BC129A	N S	TO18	L01	50V	45V	5V	100mA	165C	175mWF	150M	6P0	125mn	2mA	ALG	TFK	BC107	2N930
BC129B	N S	TO18	L01	50V	45V	5V	100mA	165C	175mWF	150M	6P0	240mn	2mA	ALG	TFK	BC107	2N930
BC130	N S	TO18	L01	25V	20V	5V	100mA	165C	175mWF	150M	6P0	125mn	2mA	ALG	TFK	BC107	A157

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