



**GENESIS™
6000 Series**

T-42-21

GENESIS™ 6000

5 AMP SMART POWER MULTICHIP ARRAY

FEATURES

- Power, linear and logic capability in the same package
- 5A max power output capability
- Overcurrent and overvoltage protection available
- Thermal shutdown function available

APPLICATIONS

- DC and stepper motor controllers
- Lamp drivers/timers
- Relay, solenoid, triac drivers/controllers
- DC to DC converter control circuits
- Smart power amplifier
- Smart voltage regulator

DESCRIPTION

The GENESIS™ 6000 smart power multichip array merges high current, analog, and I²L logic functions in a 15 lead MULTIWATT® or a 20 or 24 lead Batwing SO power package (Figure 1A). The multichip array package contains 2 power NPN transistors, capable of sinking 2.5A each or 5A total and any one of more than 12 GENESIS arrays

By choosing a linear/digital bipolar array, the designer can realize smart power circuitry containing 98 I²L logic gates and 198 linear transistors. By choosing a pure linear bipolar array, the designer can realize signal processing and power circuitry requiring up to 314 small and medium current NPN and PNP transistors (see Table 1).

With the flexibility this multichip array provides, the designer can quickly implement customized circuits which control and drive high current, high voltage resistive and reactive loads e.g. DC and stepper motors, relays, solenoids, triacs, and incandescent lamps. Overcurrent, over- and undervoltage protection, and thermal shutdown can also be included on chip.

**POWER TRANSISTOR CHARACTERISTICS
Absolute Maximum Ratings**

BV _{CEO}	50V
DC Collector Current	2.5A
Junction Temperature	150°C
Operating Temperature	-55 to +125°C
Storage Temperature	-55 to +150°C

MULTICHIP ARRAY IN A 24 LEAD BATWING SO

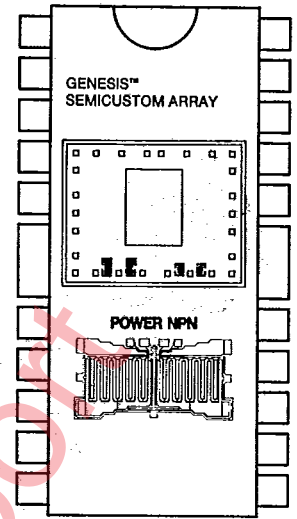


Figure 1A

TYPICAL POWER TRANSISTOR CURVES T_a=25°C

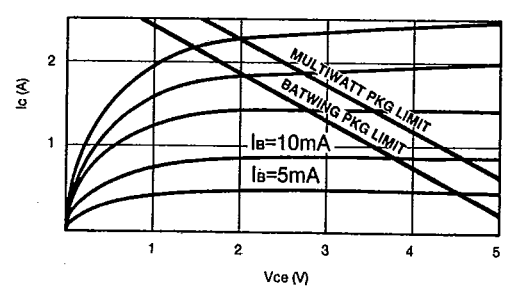


Figure 1B

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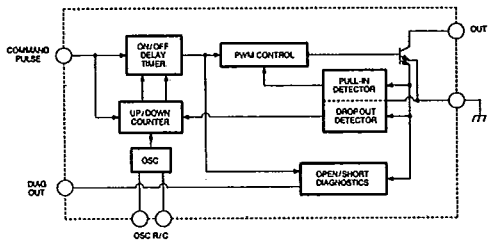
MULTICHIP COMPATIBLE **GENESIS™** SEMICUSTOM ARRAYS

TYPE NUMBER	ARRAY TYPE	DIE SIZE (Mils)	V _{CC} RANGE (V)	BOND PADS	PL GATES	I/O PORTS	DIODES	TRANSISTORS			RESISTORS		
								NPN	PNP	PWR NPN	DIFFUSED	ION IMPLANT	PINCH
1100	DIGITAL & LINEAR	98 x 124	1-12	26	64	—	—	98	41	4	339	—	8
1500	DIGITAL & LINEAR	123 x 140	1-12	30	98	—	—	122	72	4	462	—	2
2500G	LINEAR	75 x 79	1-20	18	—	—	—	58	18	2	239	—	8
3000F	LINEAR	91 x 110	1-20	24	—	—	—	92	36	4	296	—	9
3100	(MICROPOWER) LINEAR	79 x 107	1-20	22	—	—	—	85	36	3	86	281	8
3200L	LINEAR	79 x 107	1-20	22	—	—	—	85	36	3	347	—	8
3500	(OPTO) LINEAR ARRAY	75 x 97	1-20	22	—	—	—	59	24	2	206	—	8
3600	LINEAR	98 x 115	1-20	25	—	—	—	117	52	6	482	—	12
4000M	LINEAR	98 x 147	1-20	28	—	—	—	145	56	8	576	—	16
5000	LINEAR	122 x 163	1-20	40	—	—	—	199	107	8	858	—	6
7600	(L/LS) LINEAR	98 x 118	1-15	25	—	—	10 DUAL	138	26	4	384	139	—
8000	(H.V.) LINEAR	105 x 123	1-50	23	—	—	2 ZENER 28V	60	32	2	427	—	—

Table 1

SPECIFIC APPLICATION EXAMPLES

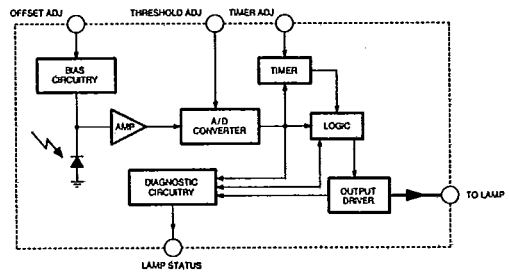
The Smart Solenoid Driver



Circuit Features

- Solenoid Driver corrects for solenoid delays
- PWM Control permits output driver to sink 5A
- Diagnostic capabilities
- Microprocessor Compatible
- Continuous Control due to Feedback in Circuit

The Smart Lamp Driver with On Chip Sensor



Circuit Features

- Protection circuitry limits the output driver and prevents thermal runaway
- On board sensor
- Microprocessor compatible diagnostics signal



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