NEC
ELECTRON DEVICE

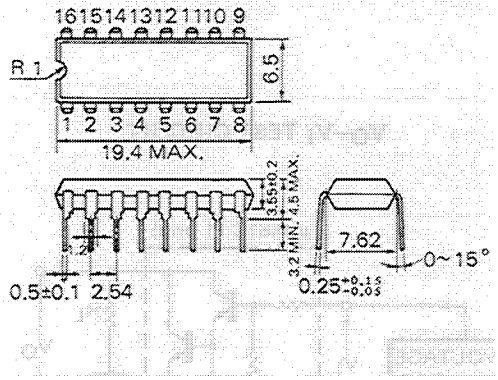
TRANSISTOR ARRAY
μPA81C

LED,LAMP DRIVER
NPN SILICON EPITAXIAL DARLINGTON TRANSISTOR ARRAY

DESCRIPTION

The μPA81C is a monolithic array of seven darlington transistors. This device is especially suited for driving LED, lamps and printer hummers with MOS output signal.

PACKAGE DIMENSIONS
in millimeters



FEATURES

- High DC current gain.
- High output drive current.
- Package is 16 pin plastic DIP (Dual In-Line Package).

ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Currents (Ta=25 °C)

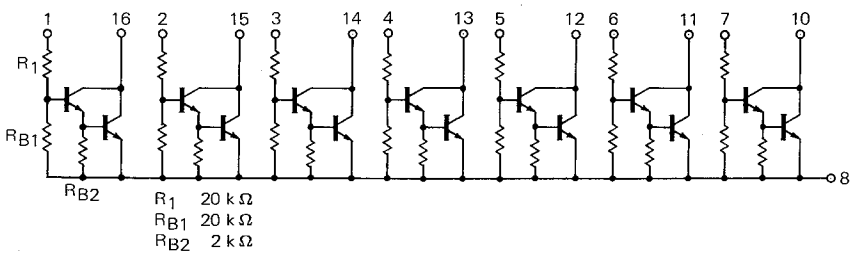
Output Voltage	V_O	45	V
Input Voltage	V_I	45	V
Peak Output Current	I_O*	400	mA/unit
Maximum Power Dissipation			
Total Power Dissipation	Pd	800	mW/package
Maximum Temperature			
Operating Temperature	T_{opt}	−25 to + 75	°C
Storage Temperature	Tstg	−55 to +125	°C

* PW=10 ms, duty cycle ≦10 % (All units turned on)

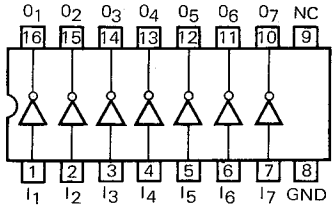
ELECTRICAL CHARACTERISTICS (Ta=25 °C)

CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Output Leakage Current	I_L			10	μA	V_{CE}=40 V
DC Current Gain	h_{FE}	1000	2500			V_{CE}=2.5 V, I_O=200 mA
Collector Saturation Voltage	$V_{CE(sat)1}$		0.82	1.2	V	V_I=13 V, I_O=100 mA
Collector Saturation Voltage	$V_{CE(sat)2}$		0.95	1.4	V	V_I=13 V, I_O=200 mA
Collector Saturation Voltage	$V_{CE(sat)3}$		1.2	2.2	V	V_I=13 V, I_O=400 mA
Input Current	I_I			1.5	mA	V_I=17 V, I_O=0

EQUIVALENT CIRCUIT



CONNECTION DIAGRAM (Top View)



I : Input (Base)
O : Output (Collector)
GND (Common Emitter)

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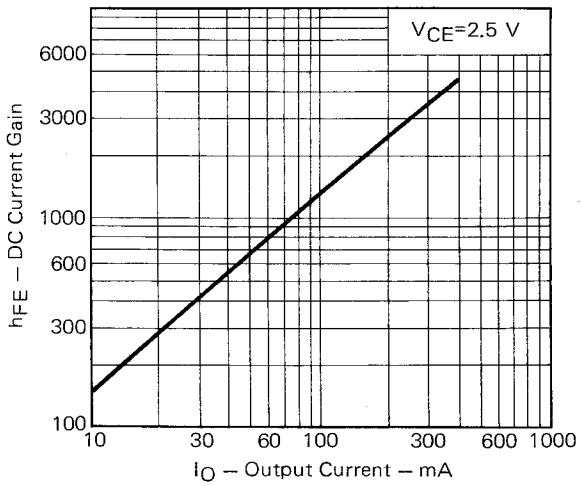
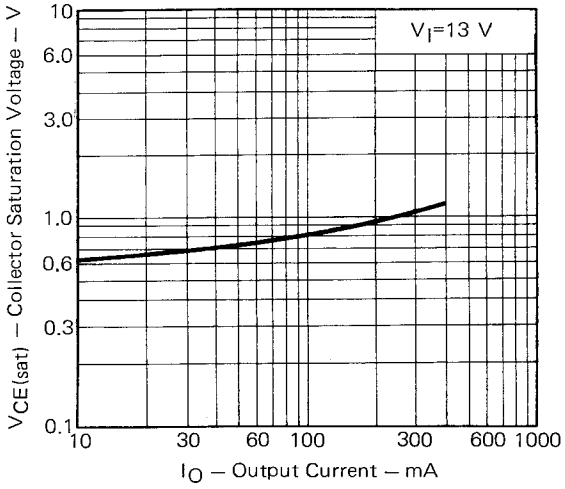
TYPICAL CHARACTERISTICS (Ta=25 °C)

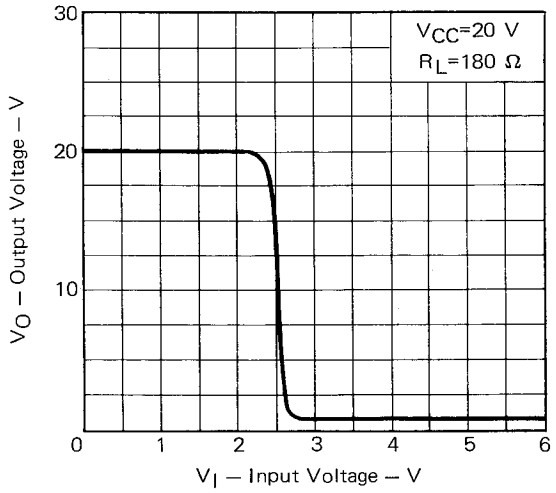
DC CURRENT GAIN vs. OUTPUT CURRENT



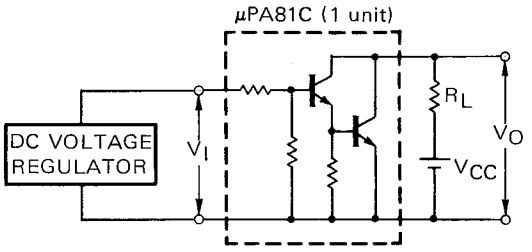
COLLECTOR SATURATION VOLTAGE vs. OUTPUT CURRENT



OUTPUT VOLTAGE vs. INPUT VOLTAGE



V_O–V_I TEST CIRCUIT



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Printed in Japan