

M54580P

7-UNIT 150mA SOURCE TYPE DARLINGTON TRANSISTOR ARRAY

6249826 MITSUBISHI ELEK (LINEAR)

80C 09319

D T-43-25

DESCRIPTION

The M54580P, 7-channel source driver, consists of 7 PNP and 7 NPN transistors connected to form high current gain driver with PNP action.

FEATURES

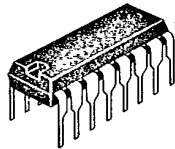
- High output sustaining voltage to 50V
- High output source current to 150mA
- Wide operating temperature range ($T_a = -20 \sim +75^\circ\text{C}$)

APPLICATION

Relay and printer driver, LED, incandescent or fluorescent display driver, Interfacing for standard MOS/BIPO-LAR logics

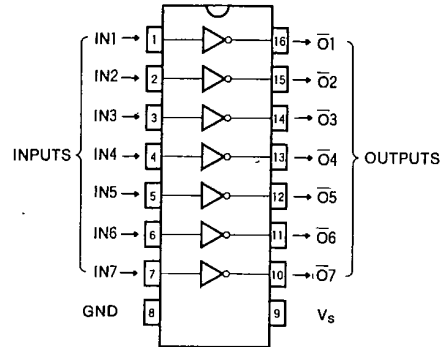
FUNCTION

The M54580P is comprised of seven PNP-NPN darlington source driver pairs with a diode and 7 kΩ resistor in series to the input. The output is turned ON by switching the input low. Each output has 50kΩ pull-down resistor suitable for driving fluorescent displays. The outputs are capable of driving 100mA and are rated for operation with output voltage up to 50V.



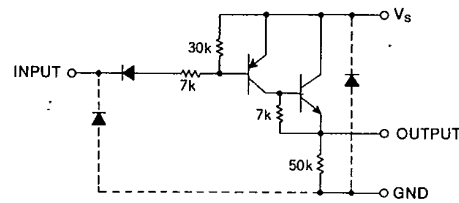
16-pin molded plastic DIP

PIN CONFIGURATION (TOP VIEW)



Outline 16P4

CIRCUIT SCHEMATIC



Unit : Ω

ABSOLUTE MAXIMUM RATINGS ($T_a = -20 \sim +75^\circ\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Ratings .	Unit
V_s	Supply voltage		50	V
V_{CEO}	Output sustaining voltage	Transistor OFF	-0.5 ~ +50	V
V_i	Input voltage		0 ~ V_s	V
I_o	Output current	Transistor OFF	-150	mA
P_d	Power dissipation	$T_a = 25^\circ\text{C}$	1.47	W
T_{opr}	Operating ambient temperature range		-20 ~ +75	$^\circ\text{C}$
T_{stg}	Storage temperature range		-55 ~ +125	$^\circ\text{C}$

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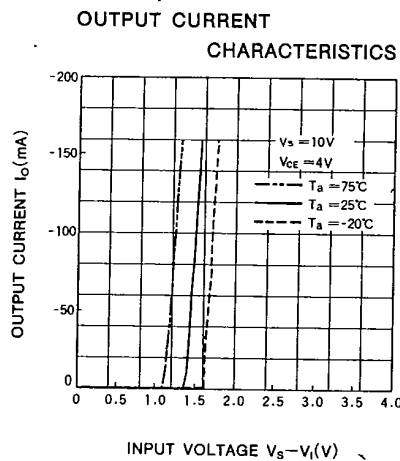
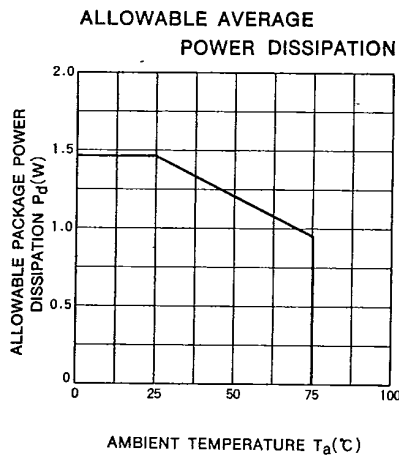
RECOMMENDED OPERATIONAL CONDITIONS (T_a = -20 ~ +75°C, unless otherwise noted)

Symbol	Parameter		Limits			Unit
			Min	Typ	Max	
V _S	Supply voltage		4		50	V
I _O	Output current per channel	All outputs conducting simultaneously Percent duty cycle less than 85%	0		-100	mA
		All outputs conducting simultaneously Percent duty cycle less than 100%	0		-50	
V _{IH}	"H" Input voltage	I _{O(leak)} = 50μA	V _S - 0.4		V _S	V
V _{IL}	"L" Input voltage	I _O = -100mA	0		V _S - 3.2	V

ELECTRICAL CHARACTERISTICS (T_a = -20 ~ +75°C, unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V _{I(BR)CEO}	Output sustaining voltage	I _{CEO} = 100μA	50			V
V _{CE(sat)}	Output saturation voltage	V _I = V _S - 3.2V		0.9	1.5	V
		I _O = -100mA		0.8	1.2	
I _I	Input current	I _O = -50mA		-0.3	-0.6	mA
		V _I = V _S - 3.5V		-0.65	-0.95	
I _R	Input leakage current	V _I = V _S - 6V			100	μA
h _{FE}	DC forward current gain	V _{CE} = 4V, V _S = 10V, I _C = -100mA, T _a = 25°C	800	3000		-

TYPICAL CHARACTERISTICS

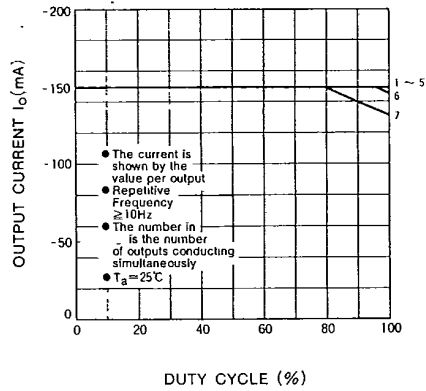


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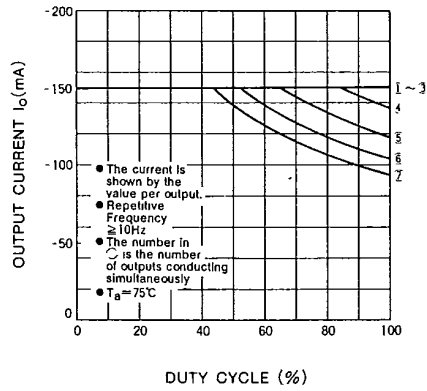
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ALLOWABLE OUTPUT CURRENT AS A FUNCTION OF DUTY CYCLE



ALLOWABLE OUTPUT CURRENT AS A FUNCTION OF DUTY CYCLE



DC CURRENT GAIN CHARACTERISTICS

