

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

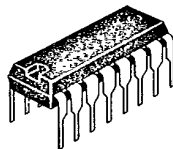
- High output sustaining voltage to 50V
- High output source current to 150mA
- Wide operating temperature range ($T_a = -20 \sim +75^\circ\text{C}$)

APPLICATION

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

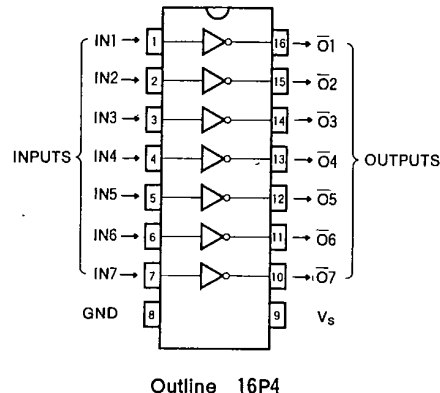
FUNCTION

The M54580P is comprised of seven PNP-NPN darlington source driver pairs with a diode and 7 k Ω resistor in series to the input. The output is turned ON by switching the input low. Each output has 50k Ω 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.

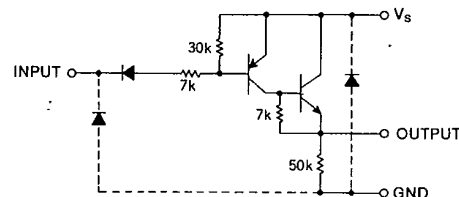


16-pin molded plastic DIP

PIN CONFIGURATION (TOP VIEW)



CIRCUIT SCHEMATIC


Unit : Ω

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

Symbol	Parameter	Conditions	Rating	Unit
V_S	Supply voltage		50	V
V_{CEO}	Output sustaining voltage	Transistor OFF	$-0.5 \sim +50$	V
V_i	Input voltage		$0 \sim V_S$	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		$-20 \sim +75$	$^\circ\text{C}$
T_{stg}	Storage temperature range		$-55 \sim +125$	$^\circ\text{C}$

7-UNIT 150mA SOURCE TYPE DARLINGTON TRANSISTOR ARRAY

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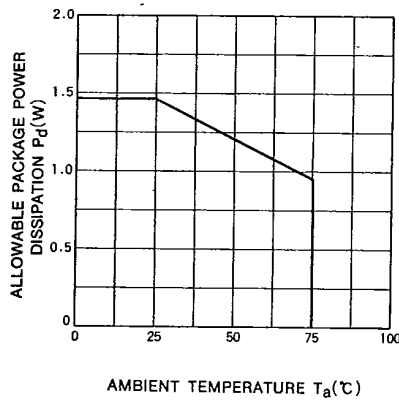
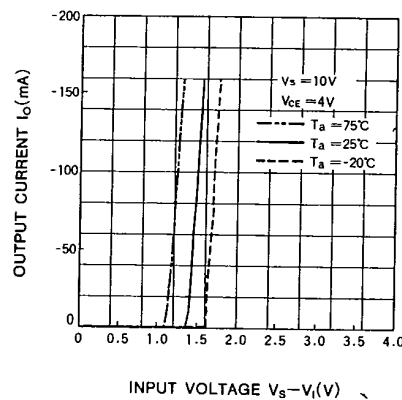
RECOMMENDED OPERATIONAL CONDITIONS ($T_a = -20 \sim +75^\circ\text{C}$, unless otherwise noted)

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%			mA
		0		-100	
V_{IH}	"H" Input voltage	All outputs conducting simultaneously Percent duty cycle less than 100%			V
		0		-50	
V_{IL}	"L" Input voltage	$I_{O(peak)} = 50\mu\text{A}$	$V_S - 0.4$	V_S	V
V_{IL}	"L" Input voltage	$I_O = -100\text{mA}$	0	$V_S - 3.2$	V

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

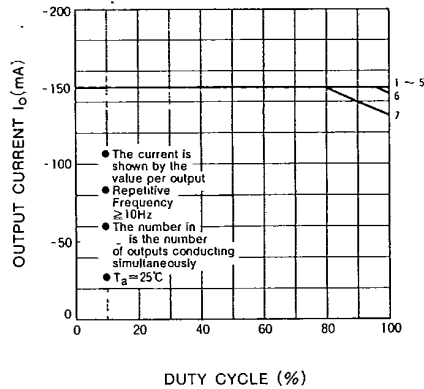
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)CEO}$	Output sustaining voltage	$I_{CEO} = 100\mu\text{A}$	50			V
$V_{CE(sat)}$	Output saturation voltage	$V_I = V_S - 3.2\text{V}$		0.9	1.5	V
		$I_O = -100\text{mA}$		0.8	1.2	
I_i	Input current	$I_O = -50\text{mA}$				mA
		$V_I = V_S - 3.5\text{V}$		-0.3	-0.6	
I_R	Input leakage current	$V_I = V_S - 6\text{V}$		-0.65	-0.95	mA
I_R	Input leakage current	$V_I = 40\text{V}$			100	μA
h_{FE}	DC forward current gain	$V_{CE} = 4\text{V}, V_S = 10\text{V}, I_C = -100\text{mA}, T_a = 25^\circ\text{C}$	800	3000		—

TYPICAL CHARACTERISTICS

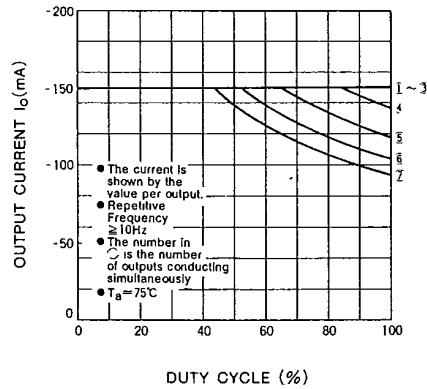
ALLOWABLE AVERAGE
POWER DISSIPATIONOUTPUT CURRENT
CHARACTERISTICS

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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

