

M54576P,FP

6249826 MITSUBISHI ELEK (LINEAR)

80C 09301 DT-43-25

7-UNIT 30mA TRANSISTOR ARRAY (INPUT "L" ACTIVE)

DESCRIPTION

The M54576P,FP, 7-channel sink driver, consists of 28 NPN transistors connected to form high current gain driver pairs.

FEATURES

- 30V output breakdown
- 30mA output sink current capability
- CMOS compatible input
- Low output saturation voltage
- Wide operating temperature range ($T_a = -20 \sim +75^\circ\text{C}$)

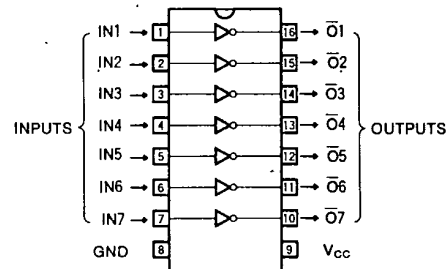
APPLICATION

LED or incandescent display digit driver

FUNCTION

The M54576P,FP is comprised of seven NPN invertors with diodes and 23k Ω resistors in series to the input and non darlington NPN sink drivers. The output is turned ON by switching the input low. The outputs are capable of sinking 30mA and will withstand 30V in the OFF state. The M54576FP features a small flat mold package.

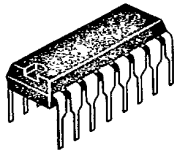
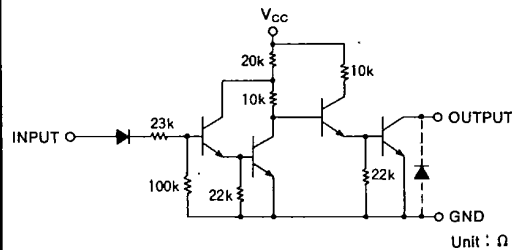
PIN CONFIGURATION (TOP VIEW)



Outline 16P2 (M54576FP)

Outline 16P4 (M54576P)

CIRCUIT SCHEMATIC



16-pin molded plastic DIP 16-pin molded plastic FLAT

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
V_{CC}	Supply voltage		13	V
V_{CEO}	Output sustaining voltage	Transistor OFF	-0.5 ~ +30	V
I_C	Collector current	Transistor ON	30	mA
V_I	Input voltage		-20, 13	V
P_d	Power dissipation	$T_a = 25^\circ\text{C}$	1.47/0.56	W
T_{opr}	Operating ambient temperature range		-20 ~ +75	$^\circ\text{C}$
T_{stg}	Storage temperature range		-55 ~ +125	$^\circ\text{C}$

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

Symbol	Parameter	Limits			Unit
		Min	Typ	Max	
V_{CC}	Supply voltage	4	5	13	V
I_C	Collector current per channel	0	10	20	mA
V_{IH}	"H" input voltage	3		V_{CC}	V
V_{IL}	"L" input voltage	0		1	V

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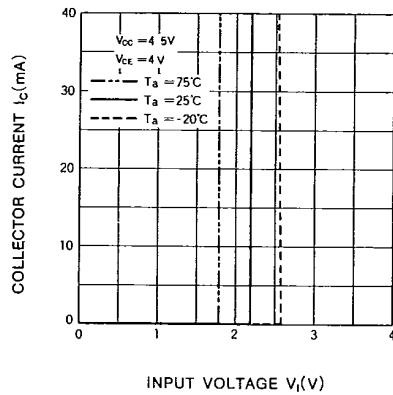
7-UNIT 30mA TRANSISTOR ARRAY (INPUT "L" ACTIVE)

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

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$I_{O(leak)}$	Output leakage current	$V_{CE}=30V, V_I=3V, V_{CC}=6V$			100	μA
$V_{CE(sat)}$	Output saturation voltage	$V_{CC}=4.5V, V_I=1V, I_C=10mA$		0.02	0.25	V
		$V_{CC}=6V, V_I=1V, I_C=20mA$		0.04	0.35	
I_I	Input current	$V_{CC}=4.5V, V_I=3V$	30	60	90	μA
I_{CC}	Supply current	$V_{CC}=4.5V, V_I=1V$			6.3	mA
		$V_{CC}=13V, V_I=1V$			18	
h_{FE}	DC forward current gain	$V_{CE}=4V, V_{CC}=4.5V, I_C=20mA, T_a=25^\circ\text{C}$	500	1200		—

TYPICAL CHARACTERISTICS

OUTPUT CURRENT CHARACTERISTICS



DC CURRENT GAIN CHARACTERISTICS

