

DESCRIPTION

The M54514AP, 7-channel sink drivers, consists of 7 NPN transistors with 2.8k Ω series input resistors.

FEATURES

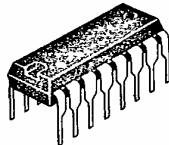
- Output breakdown voltage to 20V
- 50mA output sink current capability
- Low output saturation voltage
- Wide operating temperature range ($T_a = -20 \sim +75^\circ\text{C}$)

APPLICATION

LED or incandescent display digit driver

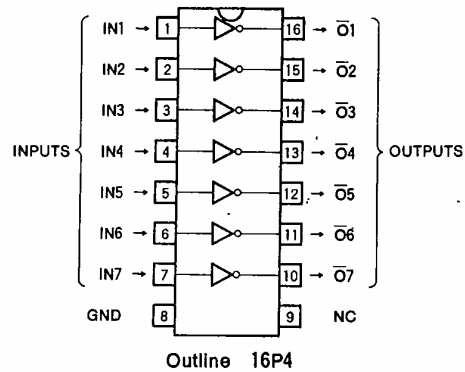
FUNCTION

The M54514AP is comprised of seven NPN drivers. Each input has a voltage divider by 2.8k Ω and 10k Ω resistors. All emitters and the substrate are connected together to pin 8. The open collector outputs are capable of sinking 50mA and will withstand 20V in the OFF state.



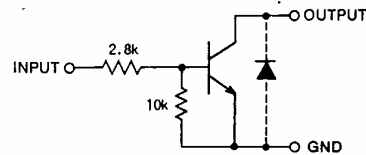
16-pin molded plastic DIP

PIN CONFIGURATION (TOP VIEW)



NC : NO CONNECTION

CIRCUIT SCHEMATIC



Unit : Ω

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

Symbol	Parameter	Conditions	Ratings	Unit
V_{CEO}	Output sustaining voltage	Transistor OFF	-0.5 ~ +20	V
I_C	Collector current	Transistor ON	50	mA
V_I	Input voltage		10	V
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	$^\circ\text{C}$

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

Symbol	Parameter	Limits			Unit
		Min	Typ	Max	
V_O	Output voltage	0		20	V
I_C	Collector current	0		20	mA
V_{IH}	"H" Input voltage			8	V
V_{IL}	"L" Input voltage	0		0.2	V

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	$V_O = 20\text{V}$			20	μA
$V_{CE(sat)}$	Output saturation voltage	$V_I = 2.4\text{V}$		0.04	0.17	V
		$I_C = 40\text{mA}$		0.08	0.23	
I_I	Input current	$V_I = 2.4\text{V}$		0.7	1.1	mA
h_{FE}	DC forward current gain	$V_{CE} = 4\text{V}, I_C = 40\text{mA}, T_a = 25^\circ\text{C}$	80	200		—

TYPICAL CHARACTERISTICS

