

# M54513P

8-UNIT 50mA TRANSISTOR ARRAY

80C 09275 D T-43-25

6249826 MITSUBISHI ELEK (LINEAR)

### DESCRIPTION

The M54513P, 8-channel sink drivers, consists of 8 NPN transistors with 2 kΩ series input resistors.

### FEATURES

- High output sustaining voltage of 40V
- 50mA output sink current capability
- Wide operating temperature range ( $T_a = -20 \sim +75^\circ\text{C}$ )

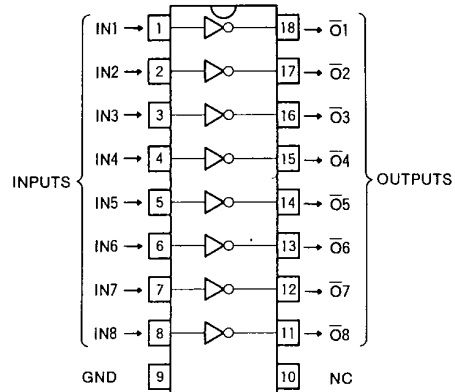
### APPLICATION

LED or incandescent display digit driver

### FUNCTION

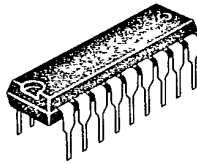
The M54513P is comprised of eight NPN drivers. Each input has a voltage divider by 2kΩ and 13.6kΩ resistors. All emitters and the substrate are connected together to pin 9. The open collector outputs are capable of sinking 50mA and will withstand 40V in the OFF state.

### PIN CONFIGURATION (TOP VIEW)



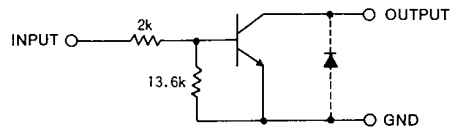
Outline 18P4

NC : NO CONNECTION



18-pin molded plastic DIP

### CIRCUIT SCHEMATIC



Unit : Ω

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

Symbol	Parameter	Conditions	Rating	Unit
$V_{CEO}$	Output sustaining voltage	Transistor OFF	-0.5 ~ +40	V
$I_C$	Collector current	Transistor ON	50	mA
$V_I$	Input voltage		10	V
$T_{opr}$	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)

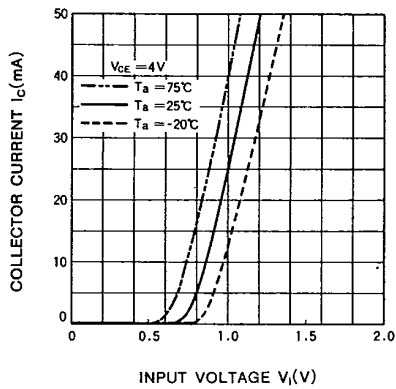
Symbol	Parameter	Limits			Unit
		Min	Typ	Max	
$V_O$	Output voltage	0		40	V
$I_C$	Collector current per channel	0		20	mA
$V_{IH}$	"H" Input voltage	2		8	V
$V_{IL}$	"L" Input voltage	0		0.2	V

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

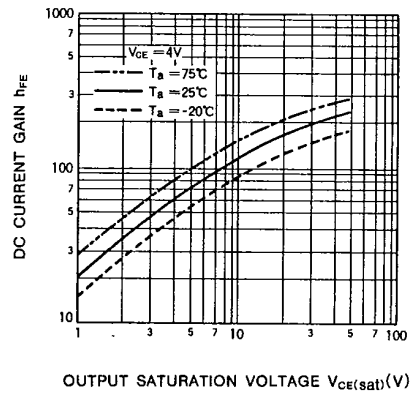
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$I_{O(\text{leak})}$	Output leakage current	$V_O = 40\text{V}$			50	$\mu\text{A}$
$V_{CE(\text{sat})}$	Output saturation voltage	$V_i = 2\text{V}, I_c = 12\text{mA}$		30	100	mV
		$V_i = 2.5\text{V}, I_c = 30\text{mA}$		70	170	
$I_i$	Input current	$V_i = 2.5\text{V}$		0.85	1.7	mA
$h_{FE}$	DC forward current gain	$V_{CE} = 4\text{V}, I_c = 30\text{mA}, T_a = 25^\circ\text{C}$	80	200		—

**TYPICAL CHARACTERISTICS**

**OUTPUT CURRENT CHARACTERISTICS**



**DC CURRENT GAIN CHARACTERISTICS**



**OUTPUT CHARACTERISTICS**

