

MITSUBISHI BIPOLAR DIGITAL ICs

**M54517P**

MITSUBISHI ELEK {LINEAR} 80 DE 6249826 0009249 0

**7-UNIT 400mA DARLINGTON TRANSISTOR ARRAY**

6249826 MITSUBISHI ELEK (LINEAR)

80C 09249

D

T-43-25

**DESCRIPTION**

The M54517P, 7-channel sink driver, consists of 14 NPN transistors connected to form seven high current gain driver pairs.

**FEATURES**

- Output sustaining voltage to 25V
- High output sink current to 400mA
- PMOS Compatible input
- Wide operating temperature range ( $T_a = -20 \sim +75^\circ\text{C}$ )

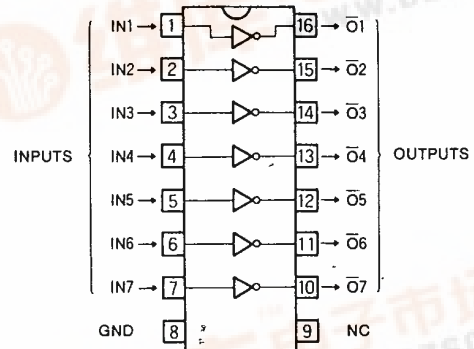
**APPLICATION**

Relay and printer driver, LED or incandescent display digit driver, interfacing for standard MOS/BIPOLAR logics

**FUNCTION**

The M54517P is comprised of seven NPN darlington driver pairs with  $20\text{k}\Omega$  series input resistors. All emitters and the substrate are connected to pin 8. The output are capable of sinking 400mA and will withstand 25V in the OFF state.

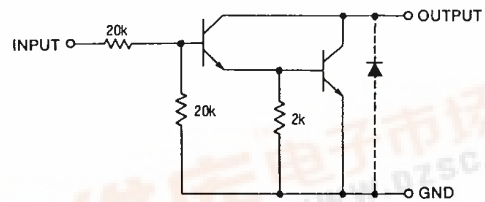
**PIN CONFIGURATION (TOP VIEW)**



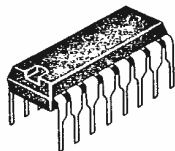
Outline 16P4

NC : NO CONNECTION

**CIRCUIT SCHEMATIC**



Unit :  $\Omega$



16-pin molded plastic DIP

**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	$-0.5 \sim +25$	V
$I_C$	Collector current	Transistor ON	400	mA
$V_I$	Input voltage		25	V
$P_d$	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		$-55 \sim +125$	$^\circ\text{C}$

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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		
$V_O$	Output voltage	0		25	V	
$I_C$	Collector current per channel	Percent duty cycle less than 8%	0		400	mA
		Percent duty cycle less than 40%	0		200	
$V_{IH}$	"H" Input voltage	$I_C = 400\text{mA}$	8		20	V
		$I_C = 100\text{mA}$	5		20	
$V_{IL}$	"L" Input voltage	$I_C(\text{leak}) = 50\mu\text{A}$	0		0.5	V

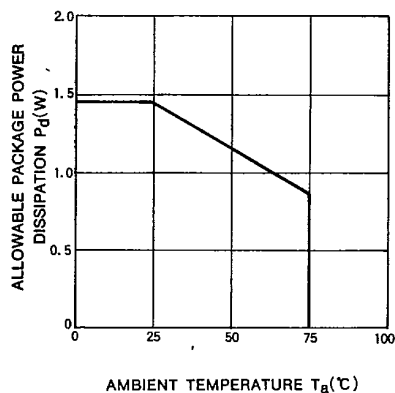
**ELECTRICAL CHARACTERISTICS** ( $T_a = -20 \sim +75^\circ\text{C}$ , unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ*	Max	
$V_{(BR)CEO}$	Output sustaining voltage	$I_{CE0} = 100\mu\text{A}$	25			V
$V_{CE(\text{sat})}$	Output saturation voltage	$V_I = 8\text{V}, I_C = 400\text{mA}$		1.15	2.2	V
		$V_I = 5\text{V}, I_C = 200\text{mA}$		0.95	1.4	
$I_I$	Input current	$V_I = 17\text{V}$		0.8	1.8	mA
$h_{FE}$	DC forward current gain	$V_{CE} = 4\text{V}, I_C = 400\text{mA}, T_a = 25^\circ\text{C}$	1000	4500		—

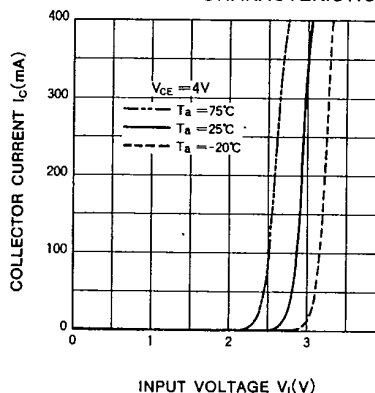
\* : A typical value is at  $T_a = 25^\circ\text{C}$ .

**TYPICAL CHARACTERISTICS**

ALLOWABLE AVERAGE POWER DISSIPATION



OUTPUT CURRENT CHARACTERISTICS



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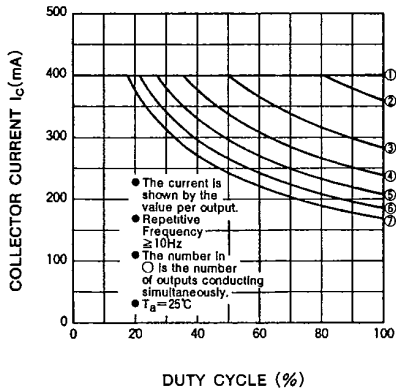
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**7-UNIT 400mA DARLINGTON TRANSISTOR ARRAY**

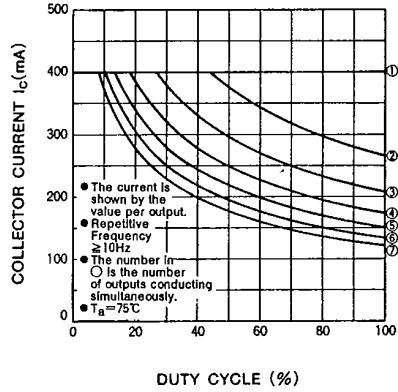
6249826 MITSUBISHI ELEK (LINEAR)

80C 09251 D *T-43-25*

ALLOWABLE COLLECTOR CURRENT  
AS A FUNCTION OF DUTY CYCLE



ALLOWABLE COLLECTOR CURRENT  
AS A FUNCTION OF DUTY CYCLE



DC CURRENT GAIN  
CHARACTERISTICS

