

MITSUBISHI ELEK {LINEAR} 80 DE 6249826 0009208 8 **M54521P**

6249826 MITSUBISHI ELEK (LINEAR)

80C 09208

D T-43-25

5-UNIT 500mA DARLINGTON TRANSISTOR ARRAY

DESCRIPTION

The M54521P, 5-channel sink driver, consists of 10 NPN transistors connected to form high current gain driver pairs.

FEATURES

- Output sustaining voltage to 30V
- High output sink current to 500mA
- Wide operating temperature range ($T_a = -20 \sim +75^\circ\text{C}$)

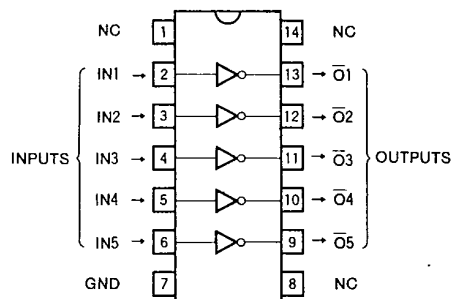
APPLICATION

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

FUNCTION

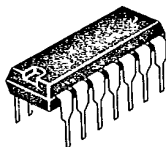
The M54521P is comprised of five NPN darlington driver pairs. All emitters and the substrate are connected together to pin 7. The output are capable of sinking 500mA and will withstand 30V in the OFF state.

PIN CONFIGURATION (TOP VIEW)



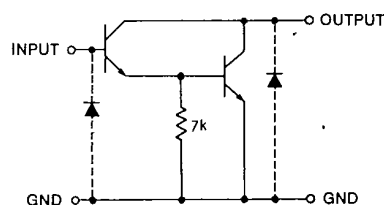
Outline 14P4

NC : NO CONNECTION



14-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	Ratings	Unit
V_{CEO}	Output sustaining voltage	Transistor OFF	$-0.5 \sim +30$	V
I_C	Collector current	Transistor ON	500	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		$-55 \sim +125$	$^\circ\text{C}$

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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		30	V
I_C	Collector current per channel				mA
	Percent duty cycle less than 10%	0		400	
	Percent duty cycle less than 55%	0		200	
I_{IH}	"H" Input current				mA
	$I_C = 200\text{mA}$	1		5	
	$I_C = 400\text{mA}$	2		5	
I_{IL}	"L" Input current		0		μA

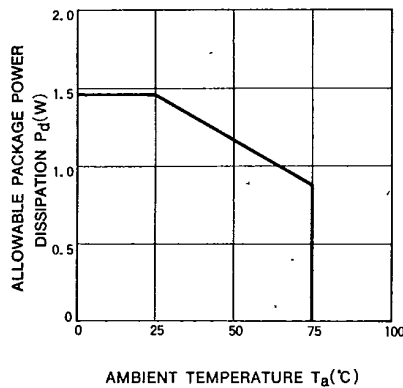
ELECTRICAL CHARACTERISTICS ($T_a = -20 \sim +75^\circ\text{C}$, unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ*	Max	
$V_{(BR)CEO}$	Output sustaining voltage	$I_{CEO} = 100\mu\text{A}$	30			V
$V_{CE(sat)}$	Output saturation voltage	$V_I = 2\text{mA}, I_C = 400\text{mA}$		1.0	2.4	V
		$V_I = 1\text{mA}, I_C = 200\text{mA}$		0.8	1.6	
V_I	Input voltage	$I_i = 1\text{mA}$	0.6	1.35	1.7	V

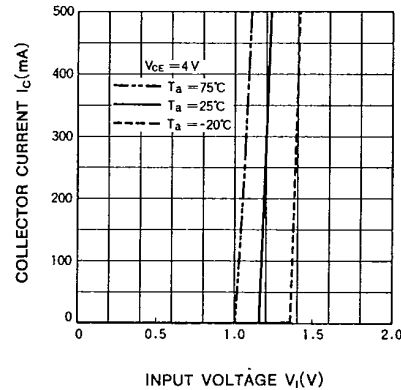
* : A typical value is at $T_a = 25^\circ\text{C}$.

TYPICAL CHARACTERISTICS

ALLOWABLE AVERAGE POWER DISSIPATION



OUTPUT CURRENT CHARACTERISTICS

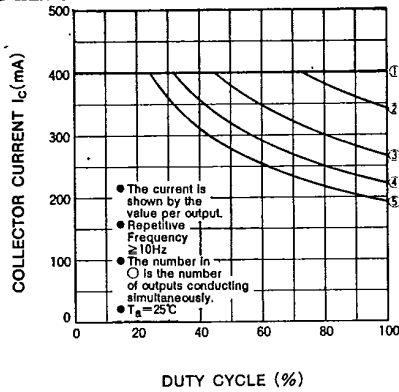


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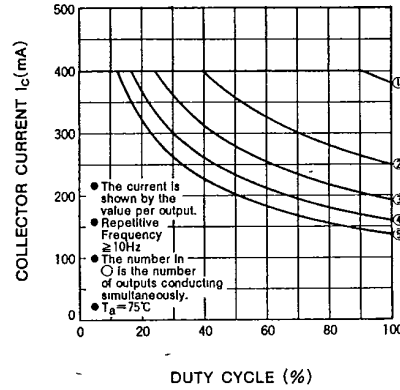
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5-UNIT 500mA DARLINGTON TRANSISTOR ARRAY

**ALLOWABLE COLLECTOR CURRENT
AS A FUNCTION OF DUTY CYCLE**



**ALLOWABLE COLLECTOR CURRENT
AS A FUNCTION OF DUTY CYCLE**



**DC CURRENT GAIN
CHARACTERISTICS**

