

7-UNIT 400mA DARLINGTON TRANSISTOR ARRAY

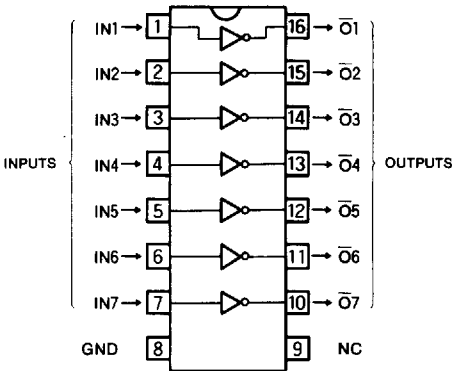
DESCRIPTION
The M54519P, 7-channel sink driver, consists of 14 NPN transistors connected to form seven high current gain driver pairs.

- FEATURES**
- High output sustaining voltage to 40V
 - High output sink current to 400mA
 - PMOS Compatible input
 - Wide operating temperature range (Ta=−20~+75°C)

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

FUNCTION
The M54519P is comprised of seven NPN darlington driver pairs with 20kΩ series input resistors. All emitters and the substrate are connected together to pin 8. The output are capable of sinking 400mA and will withstand 40V in the OFF state.

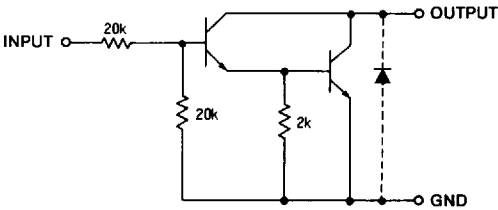
PIN CONFIGURATION (TOP VIEW)



Outline 16P4

NC : No connection

CIRCUIT SCHEMATIC



The diodes shown by broken line are parasite diodes and must not be used

Unit : Ω

ABSOLUTE MAXIMUM RATINGS (Ta=−20~+75°C, unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
V _{CEO}	Output sustaining voltage	Transistor OFF	−0.5~+40	V
I _C	Collector current per channel	Transistor ON	400	mA
V _I	Input voltage		−0.5~+40	V
P _d	Power dissipation	T _a =25°C	1.47	W
T _{opr}	Operating temperature		−20~+75	°C
T _{stg}	Storage temperature		−55~+125	°C

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

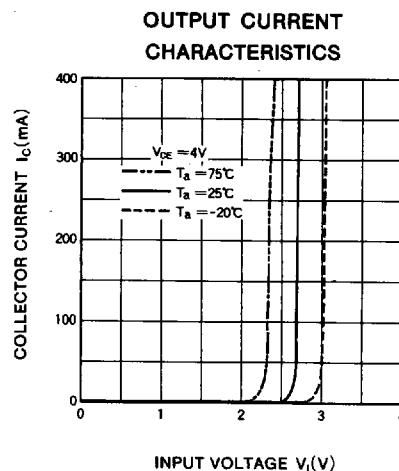
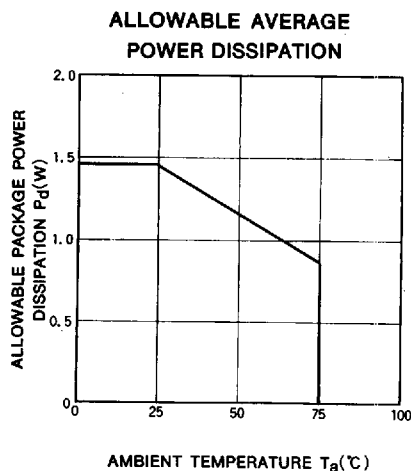
Symbol	Parameter *		Limits			Unit
			Min	Typ	Max	
V_O	Output voltage		0		40	V
I_C	Collector current per channel	Percent duty cycle less than 8%	0		400	mA
		Percent duty cycle less than 30%	0		200	
V_{IH}	"H" Input voltage	$I_C = 400\text{mA}$	8		30	V
		$I_C = 100\text{mA}$	5		30	
V_{IL}	"L" Input voltage	$I_{oleak} = 50\mu\text{A}$	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	$I_{CEO} = 100\mu\text{A}$	40			V
$V_{CE(sat)}$	Output saturation voltage	$V_I = 8\text{V}$, $I_C = 400\text{mA}$		1.2	2.4	V
		$V_I = 5\text{V}$, $I_C = 200\text{mA}$		0.9	1.6	
I_I	Input current	$V_I = 17\text{V}$	0.3	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	6000		—

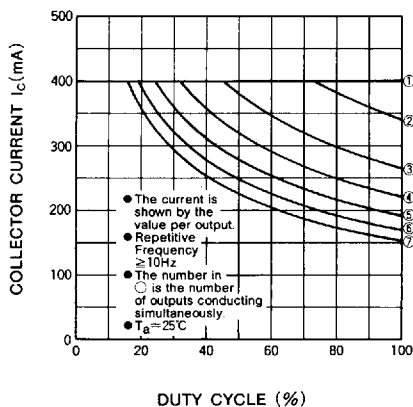
* : Typical values are at $T_a = 25^\circ\text{C}$.

TYPICAL CHARACTERISTICS

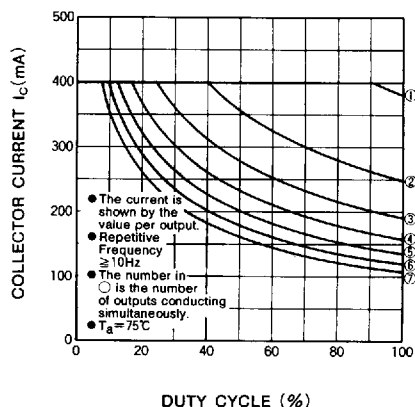


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**ALLOWABLE COLLECTOR CURRENT
AS A FUNCTION OF DUTY CYCLE**



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



**DC CURRENT GAIN
CHARACTERISTICS**

