M54517P

7-UNIT 400mA DARLINGTON TRANSISTOR ARRAY

DESCRIPTION

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

FEATURES

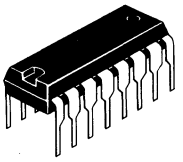
- Output sustaining voltage to 25V
- High output sink current to 400mA
- PMOS Compatible input
- Wide operating temperature range (T_a = −20~+75℃)

APPLICATIONS

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

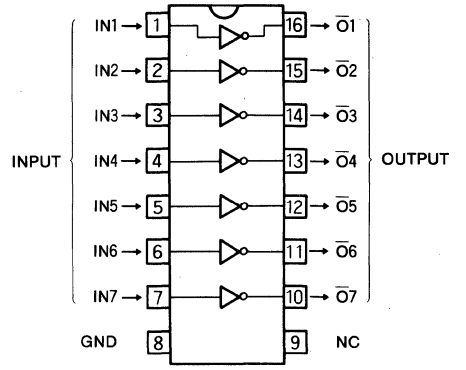
FUNCTION

The M54517P is comprised of seven NPN darlington driver pairs with 20kΩ 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.



16-pin molded plastic DIL

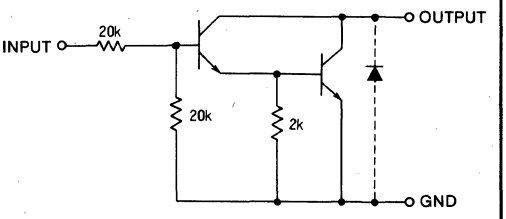
PIN CONFIGURATION (TOP VIEW)



Outline 16P4

NC : NO CONNECTION

CIRCUIT SCHEMATIC



UNIT : Ω

ABSOLUTE MAXIMUM RATINGS (T_a=−20~+75℃, unless otherwise noted)

Symbol	Parameter	Conditions	Limits	Unit
V_{CEO}	Output sustaining voltage	Transistor OFF	25	V
I_C	Collector current	Transistor ON	400	mA
V_I	Input voltage		25	V
P_d	Power dissipation	T_a=25℃	1.47	W
T_{opr}	Operating ambient temperature range		−20~+75	℃
T_{stg}	Storage temperature range		−55~+125	℃

RECOMMENDED OPERATIONAL CONDITIONS (T_a=−20∼+75℃, unless otherwise noted)

Symbol	Parameter		Limits			Unit
			Min	Typ	Max	
V_O	Output voltage				25	V
I_C	Collector current per channel	Percent duty cycle less than 8%			400	mA
		Percent duty cycle less than 40%			200	mA
V_{IH}	"H" Input voltage	I_C=400mA	8			V
		I_C=100mA	5			
V_{IL}	"L" Input voltage	$I_{O(leak)}$=50μA			0.5	V

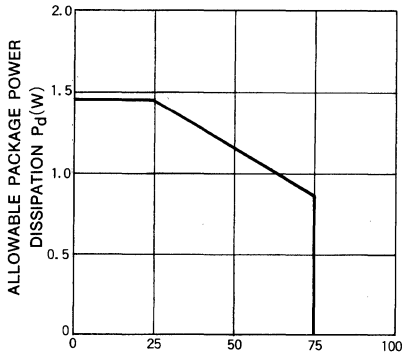
ELECTRICAL CHARACTERISTICS (T_a=−20∼+75℃, unless otherwise noted)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ*	Max	
$V_{(BR)CEO}$	Output sustaining voltage	I_{CEO}=100μA	25			V
$V_{CE(sat)}$	Output saturation voltage	V_I=8V, I_C=400mA			2.2	V
		V_I=5V, I_C=200mA			1.4	V
I_I	Input current	V_I=17V		0.8	1.8	mA
h_{FE}	DC forward current gain	V_{CE}=4V, I_C=400mA, T_a=25℃	1000			

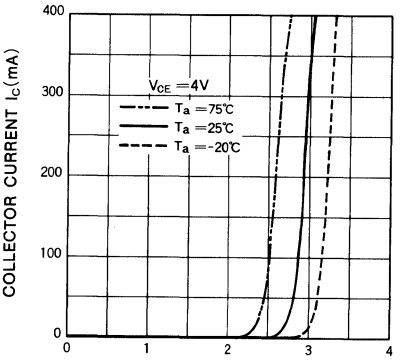
* : A typical value is at T_a=25℃.

TYPICAL CHARACTERISTICS

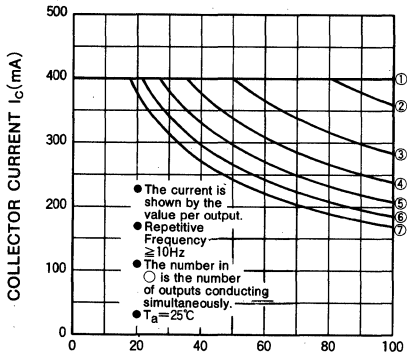
ALLOWABLE AVERAGE POWER DISSIPATION



OUTPUT CURRENT CHARACTERISTICS



ALLOWABLE COLLECTOR CURRENT AS A FUNCTION OF DUTY CYCLE



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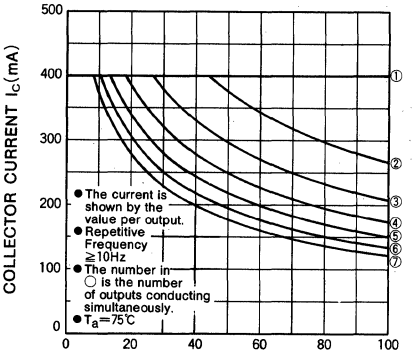

DC CURRENT GAIN CHARACTERISTICS