M54512L

4-UNIT 50mA TRANSISTOR ARRAY

DESCRIPTION

The M54512L, 4-channel sink driver, consists of four NPN transistors, and designed for use in medium-current switching applications.

FEATURES

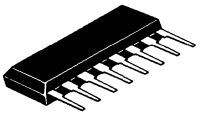
- Output breakdown voltage to 20V
- 50mA output sink current capability
- Wide operating temperature range (T_a =−20∼+75℃)

APPLICATION

LED or incandescent display driver

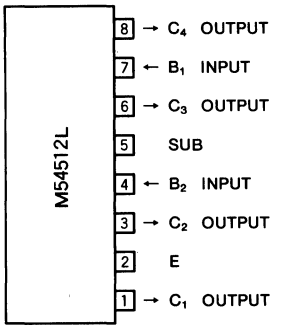
FUNCTION

The M54512L is comprised of four NPN transistors with a 10kΩ series input resistor, connected to form dual 2-parallel output drivers. All emitters of transistors are connected together to pin 2. The substrate is connected to pin 5 and pin 5 must be tied to the most negative point in the external circuit. The drivers are capable of sinking 50mA and will withstand 20V in the OFF state.



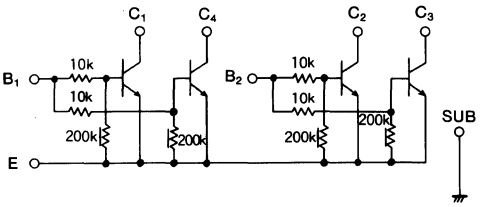
8-pin molded plastic SIL

PIN CONFIGURATION (TOP VIEW)



Outline 8P5

CIRCUIT SCHEMATIC



UNIT : Ω

ABSOLUTE MAXIMUM RATINGS (T_a=25℃, unless otherwise noted)

Symbol	Parameter	Conditions	Limits	Unit
V_{CEO}	Output sustaining voltage	Transistor OFF	20	V
V_{EBO}	Emitter-base sustaining voltage		4	V
I_C	Collector current	Transistor ON	50	mA
V_I	Input voltage		20	V
P_d	Power dissipation	T_a =75℃	500	mW
T_{opr}	Operating ambient temperature range		−10∼+75	℃
T_{stg}	Storage temperature range		−55∼+125	℃

RECOMMENDED OPERATING CONDITIONS (T_a=25℃, unless otherwise noted)

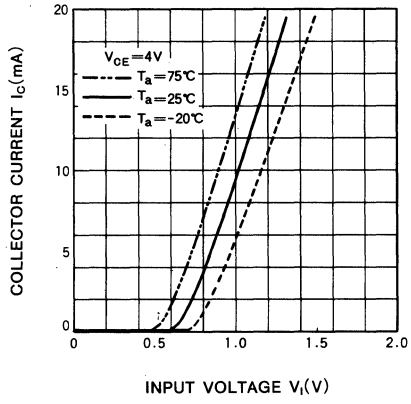
Symbol	Parameter		Limits			Unit
			Min	Typ	Max	
V_C	Output voltage		0		18	V
I_C	Collector current per channel		0		20	mA
V_{IH}	"H" Input voltage	I_C =30mA	2			V
V_{IL}	"L" Input voltage				0.2	V

ELECTRICAL CHARACTERISTICS (T_a=25℃, unless otherwise noted)

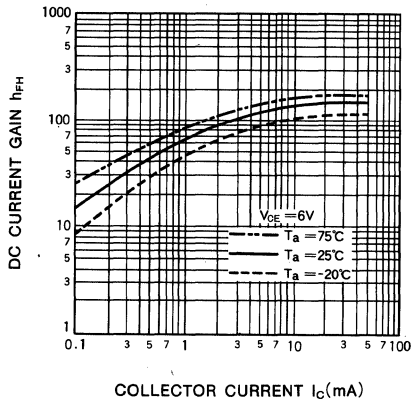
Symbol	Parameter	Test conditions		Limits			Unit
				Min	Typ	Max	
$I_{O(leak)}$	Output leakage current	V_{CE} =20V				20	μA
$V_{CE(sat)}$	Output saturation voltage	I_B = 2 mA	I_C =10mA			0.1	V
			I_C =20mA			0.2	V
BV_{EBO}	Emitter-base sustaining voltage	I_{EBO} =150 μA		4			V
V_I	Input voltage	I_B = 2 mA			11		V
h_{FE}	DC forward current gain	V_{CE} = 6 V, I_C =20mA, T_a=25℃		60			

TYPICAL CHARACTERISTICS

OUTPUT CURRENT CHARACTERISTICS



DC CURRENT GAIN CHARACTERISTICS



OUTPUT CHARACTERISTICS