

6249826 MITSUBISHI ELEK (LINEAR)

**DESCRIPTION**

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

**FEATURES**

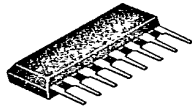
- Output breakdown voltage to 20V
- 50mA output sink current capability
- Wide operating temperature range ( $T_a = -20 \sim +75^\circ\text{C}$ )

**APPLICATION**

LED or incandescent display driver

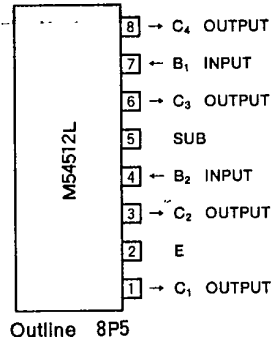
**FUNCTION**

The M54512L is comprised of four NPN transistors with a  $10\text{k}\Omega$  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.

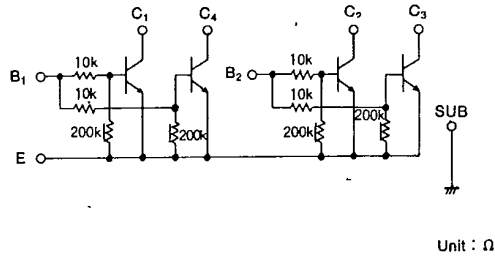


8-pin molded plastic SIP

**PIN CONFIGURATION (TOP VIEW)**



**CIRCUIT SCHEMATIC**



**ABSOLUTE MAXIMUM RATINGS** ( $T_a=25^\circ\text{C}$ , unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
$V_{CEO}$	Output sustaining voltage	Transistor OFF	$-0.5 \sim +20$	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	$T_a = 75^\circ\text{C}$	500	mW
$T_{opr}$	Operating ambient temperature range		$-10 \sim +75$	$^\circ\text{C}$
$T_{stg}$	Storage temperature range		$-55 \sim +125$	$^\circ\text{C}$

**RECOMMENDED OPERATING CONDITIONS** ( $T_a=25^\circ\text{C}$ , unless otherwise noted)

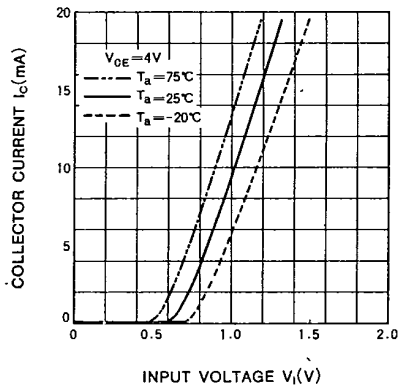
Symbol	Parameter	Limits			Unit
		Min	Typ	Max	
$V_C$	Output voltage	0		18	V
$I_C$	Collector current per channel	0		20	mA
$V_{IH}$	"H" Input voltage	11		18	V
$V_{IL}$	"L" Input voltage	0		0.2	-V

**ELECTRICAL CHARACTERISTICS** ( $T_a=25^\circ\text{C}$ , unless otherwise noted)

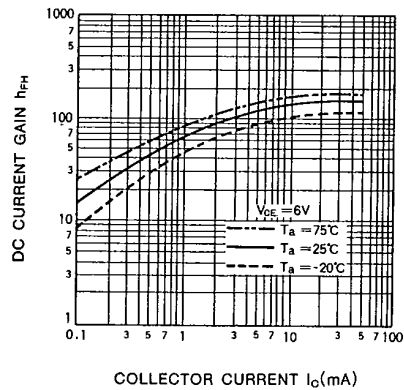
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$I_{c(Leak)}$	Output leakage current	$V_{CE} = 20\text{V}$			20	$\mu\text{A}$
$V_{CE(sat)}$	Output saturation voltage	$I_B = 2\text{mA}$ $I_C = 10\text{mA}$ $I_C = 20\text{mA}$		0.02 0.04	0.1 0.2	V
$BV_{EBO}$	Emitter-base sustaining voltage	$I_{EBO} = 150\mu\text{A}$	4			V
$V_i$	Input voltage	$I_B = 2\text{mA}$	4	11	18	V
$h_{FE}$	DC forward current gain	$V_{CE} = 6\text{V}$ , $I_C = 20\text{mA}$ , $T_a = 25^\circ\text{C}$	60	150		—

**TYPICAL CHARACTERISTICS**

OUTPUT CURRENT CHARACTERISTICS



DC CURRENT GAIN CHARACTERISTICS



OUTPUT CHARACTERISTICS

