

LINEAR INTEGRATED CIRCUITS



HIGH-VOLTAGE, HIGH-CURRENT 8 DARLINGTON ARRAYS

These high-voltage, high-current Darlington transistor arrays comprise eight NPN Darlington on a common monolithic substrate. All units feature open collector outputs and integral suppression diodes for inductive loads. Peak currents of 500 mA can be withstood. They are pinned with inputs opposite outputs to facilitate circuit board layout.

- The L601 is a general-purpose array which may be used with DTL, TTL, PMOS, CMOS, etc.
- The L602 is specifically designed for use with 14 to 25V PMOS devices. Each input has a Zener diode and resistor in series in order to limit the input current to a safe value.
- The L603 has a series base resistor to each Darlington pair, and thus allows operation directly with TTL or CMOS operating at a supply voltage of 5V.
- The L604 has a series base resistor to each Darlington pair, and thus allows operation directly with PMOS or CMOS utilizing supply voltage of 6 to 15V.

In all cases, the individual Darlington collector current rating is 400 mA. However, outputs may be paralleled for higher load current capability. The devices are supplied in a 18-lead dual in-line plastic package with copper frame.

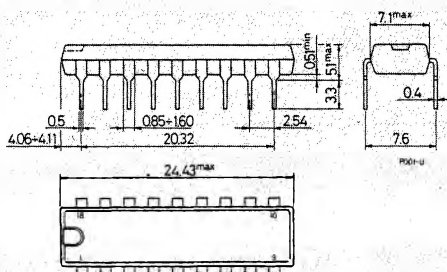
ABSOLUTE MAXIMUM RATINGS

V_{CEX}	Collector emitter voltage (input open)	90	V
I_C	Collector current	0.4	A
$I_{C\text{ peak}}$	Collector peak current	0.5	A
V_i	Input voltage (for L602, L603 and L604)	30	V
I_i	Input current (for L601 only)	25	mA
P_{tot}	Total power dissipation at $T_{\text{amb}} = 25^\circ\text{C}$	1.8	W
T_{op}	Operating junction temperature	-25 to 150	$^\circ\text{C}$
T_{stg}	Storage temperature	-55 to 150	$^\circ\text{C}$

ORDERING NUMBERS: L601B, L602B, L603B, L604B

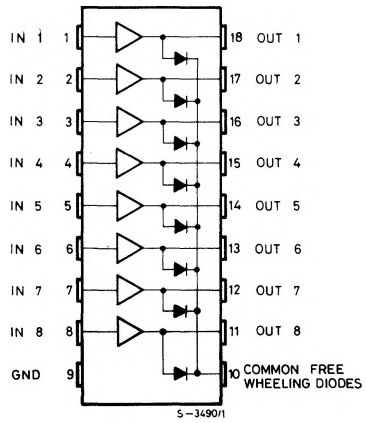
MECHANICAL DATA

Dimensions in mm



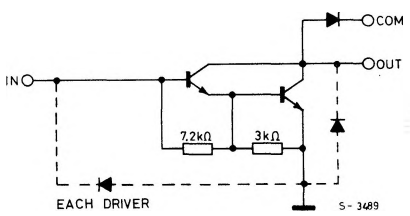


CONNECTION DIAGRAM (top view)

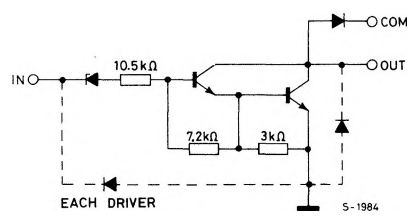


SCHEMATIC DIAGRAMS

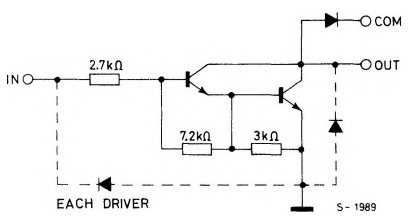
L601



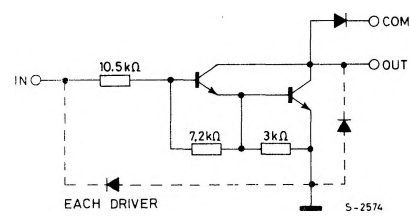
L602



L603



L604





THERMAL DATA

$R_{th\ j-amb}$ Thermal resistance junction-ambient	max 70 °C/W
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ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}C$, unless otherwise specified)

Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CEX} Output leakage current	$V_{CE}=90V$			10	μA
$V_{CE(sat)}$ Collector emitter saturation voltage	$I_C=300\text{ mA}$ $I_B=500\text{ }\mu A$ $I_C=200\text{ mA}$ $I_B=350\text{ }\mu A$ $I_C=100\text{ mA}$ $I_B=250\text{ }\mu A$			2 1.7 1.2	V V V
h_{FE} DC forward current gain (L601 only)	$V_{CE}=3V$ $I_C=300\text{ mA}$	1000			—
V_i Minimum input voltage (ON condition)	$V_{CE}=3V$ for L602 for L603 for L604 $I_C=300\text{ mA}$			11.5 2.5 2.5	V V V
V_i Maximum input voltage (OFF condition)	$V_{CE}=90V$ for L601 for L602 for L603 for L604 $I_C=25\text{ }\mu A$	0.55 7 0.75 1			V V V V
I_R Clamp diode reverse current	$V_R=90V$			50	μA
V_F Clamp diode forward voltage	$I_F=300\text{ mA}$		2	2.4	V
t_{on} Turn-on delay	$0.5\text{ }V_i$ to $0.5\text{ }V_o$		0.4		μs
t_{off} Turn-off delay	$0.5\text{ }V_i$ to $0.5\text{ }V_o$		0.4		μs