

# L603 - L604

## DARLINGTON ARRAYS

- EIGHT DARLINGTONS PER PACKAGE
- OUTPUT CURRENT 400 mA PER DRIVER (500mA PEAK)
- OUTPUT VOLTAGE 90 V (V<sub>CE (sus)</sub>) = 70 V)
- INTEGRAL SUPPRESSION DIODES FOR INDUCTIVE LOADS
- OUTPUTS CAN BE PARALLELED FOR HIGHER CURRENT
- TTL / CMOS INPUTS
- INPUTS PINNED OPPOSITE OUTPUTS TO SIMPLIFY LAYOUT

#### DESCRIPTION

The L603 and L604 are high voltage, high current darlington arrays each containing eight open collector darlington pairs with common emitters. Each channel is rated at 400mA and can with stand peak currents of 500 mA.

Suppression diodes are included for inductive load driving and the inputs are pinned opposite the outputs to simplify board layout.

The four versions interface to all common logic families:

**L603** = 5V TTL

**L604** = 6 - 15V CMOS

**ABSOLUTE MAXIMUM RATINGS** 

These versatile devices are useful for driving a wide range of loads, including solenoids, relays DC motors, LED displays, filament lamps, thermal printheads and high power buffers.

DIP18 ORDERING NUMBERS: L603C L604C

#### **PIN CONNECTION** (top view)



Symbol	Parameter	Value	Unit
V <sub>CEX</sub>	Collector Emitter Voltage (input open)	90	V
Ι <sub>C</sub>	Collector Current	0.4	A
lc	Collector Peak Current	0.5	A
Vi	Input Voltage (for L603 and L604)	30	V
P <sub>tot</sub>	Total Power Dissipation a T <sub>amb</sub> = 25°C	1.8	W
T <sub>op</sub>	Operating Junction Temperature	-25 to 150	°C

September 2003

#### THERMAL DATA

Symbol	Parameter	Value	Unit
R <sub>th-j amb</sub>	Thermal Resistance Junction ambient	max 70	°C/W

### **ELECTRICAL CHARACTERISTCS**

Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Unit
I <sub>CEX</sub>	Output Leakage Current	V <sub>CE</sub> = 90V			10	μΑ
V <sub>CE(sat)</sub>	Collector Emitter Saturation	I <sub>C</sub> = 300mA; I <sub>B</sub> = 500μA			2	V
	Voltage	$I_{C} = 200 \text{mA}; I_{B} = \mu \text{A}$			1.7	V
		I <sub>C</sub> = 100mA; I <sub>B</sub> = 250μA			1.2	V
Vi	Maximum Input Voltage (ON condition)	V <sub>CE</sub> = 3V; I <sub>C</sub> = 300mA L603 L604			2.5 5	V V
Vi	Maximum Input Voltage (OFF condition)	V <sub>CE</sub> = 90V; I <sub>C</sub> = 25µA L603 L604	0.75 1			V V
I <sub>R</sub>	Clamp Diode Reverse Current	V <sub>R</sub> = 90V			50	μA
VF	Clamp Diode Forward Voltage	I <sub>F</sub> = 300mA		2	2.4	V
t <sub>on</sub>	Turn-on Delay	0.5 V <sub>i</sub> to 0.5 V <sub>o</sub>		0.4		μs
t <sub>off</sub>	Turn-off Delay	0.5 V <sub>i</sub> to 0.5 V <sub>o</sub>		0.4		μA

L603





**A7/** 

DIM.	mm			inch			
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
a1	0.254			0.010			
В	1.39		1.65	0.055		0.065	
b		0.46			0.018		
b1		0.25			0.010		
D			23.24			0.915	
E		8.5			0.335		
е		2.54			0.100		
e3		20.32			0.800		
F			7.1			0.280	
I			3.93			0.155	
L		3.3			0.130		
Z		1.27	1.59		0.050	0.063	





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