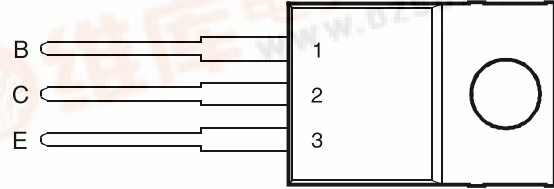




TIPL790, TIPL790A NPN SILICON POWER DARLINGTONS

- Rugged Epitaxial Planar Construction
- 10 A Continuous Collector Current
- Operating Characteristics Fully Guaranteed at 100°C
- t_{x0} typically 320 ns, $I_C = 10$ A

TO-220 PACKAGE
(TOP VIEW)



Pin 2 is in electrical contact with the mounting base.

absolute maximum ratings at 25°C case temperature (unless otherwise noted)

RATING		SYMBOL	VALUE	UNIT
Collector-base voltage ($I_E = 0$)	TIPL790	V_{CBO}	150	V
	TIPL790A		200	
Collector-emitter voltage ($V_{BE} = 0$)	TIPL790	V_{CES}	150	V
	TIPL790A		200	
Collector-emitter voltage ($I_B = 0$)	TIPL790	V_{CEO}	120	V
	TIPL790A		150	
Emitter-base voltage		V_{EBO}	8	V
Continuous collector current		I_C	10	A
Peak collector current (see Note 1)		I_{CM}	15	A
Continuous device dissipation at (or below) 25°C case temperature		P_{tot}	70	W
Operating junction temperature range		T_j	-65 to +150	°C
Storage temperature range		T_{stg}	-65 to +150	°C

NOTE 1: This value applies for $t_p \leq 10$ ms, duty cycle $\leq 2\%$.

PARAMETER MEASUREMENT INFORMATION

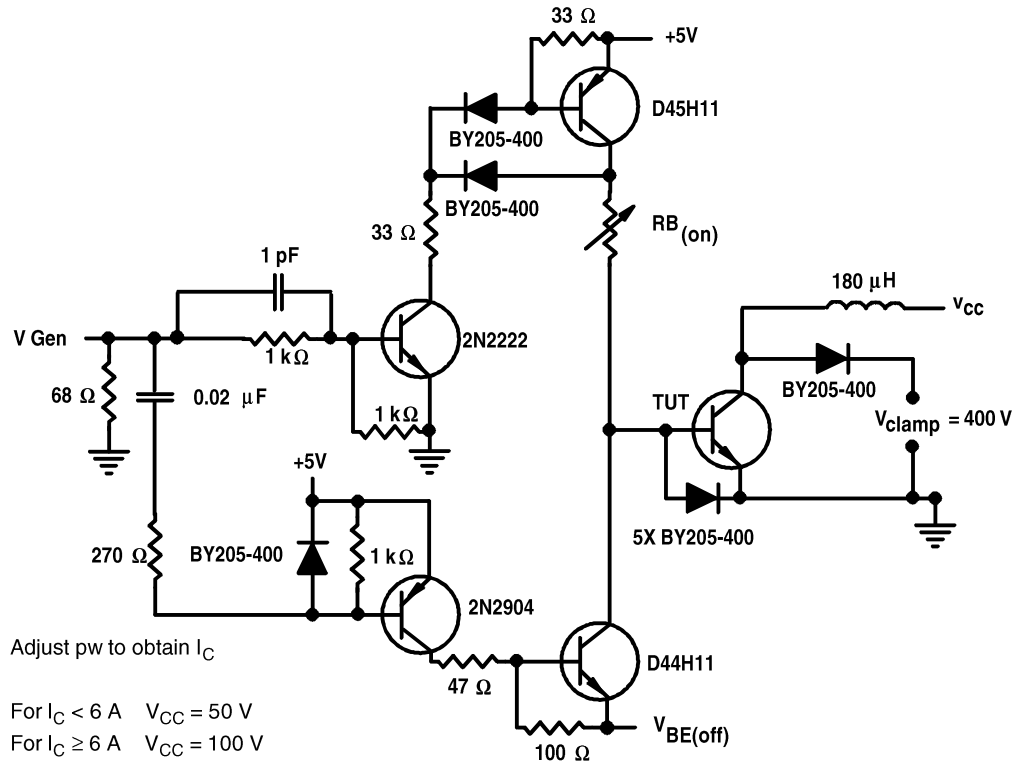
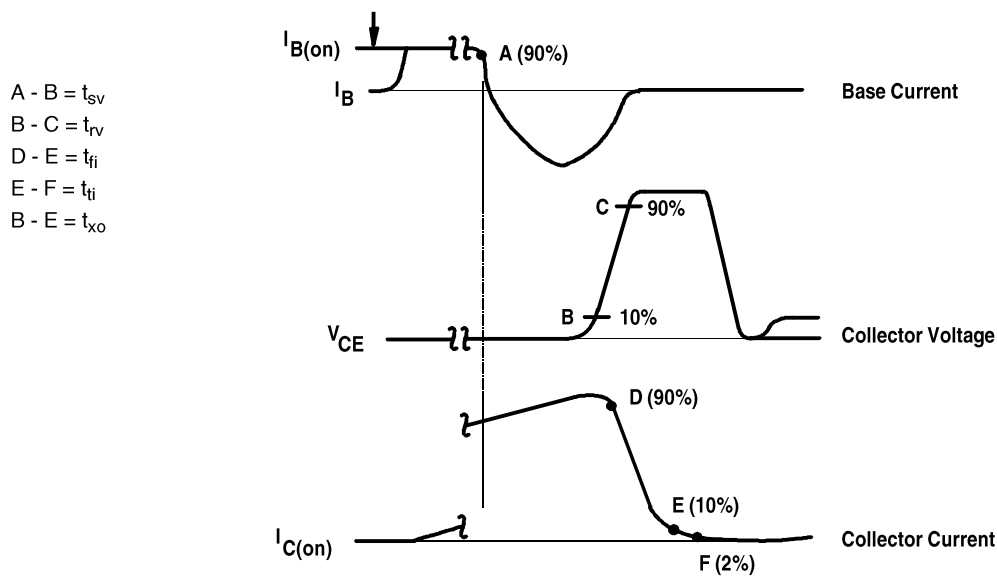


Figure 1. Inductive-Load Switching Test Circuit



NOTES: A. Waveforms are monitored on an oscilloscope with the following characteristics: $t_r < 15 \text{ ns}$, $R_{in} > 10 \Omega$, $C_{in} < 11.5 \text{ pF}$.
 B. Resistors must be noninductive types.

Figure 2. Inductive-Load Switching Waveforms

**TIPL790, TIPL790A
NPN SILICON POWER DARLINGTONS**

TYPICAL CHARACTERISTICS

TYPICAL DC CURRENT GAIN
VS
COLLECTOR CURRENT

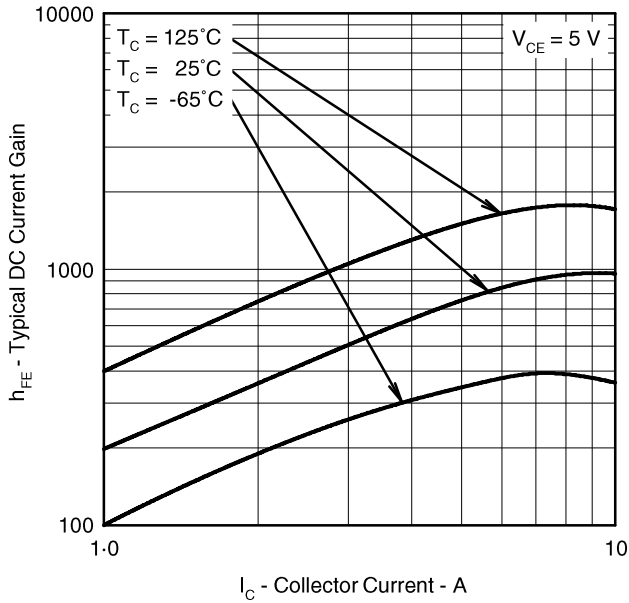


Figure 3.

COLLECTOR-EMITTER SATURATION VOLTAGE
VS
BASE CURRENT

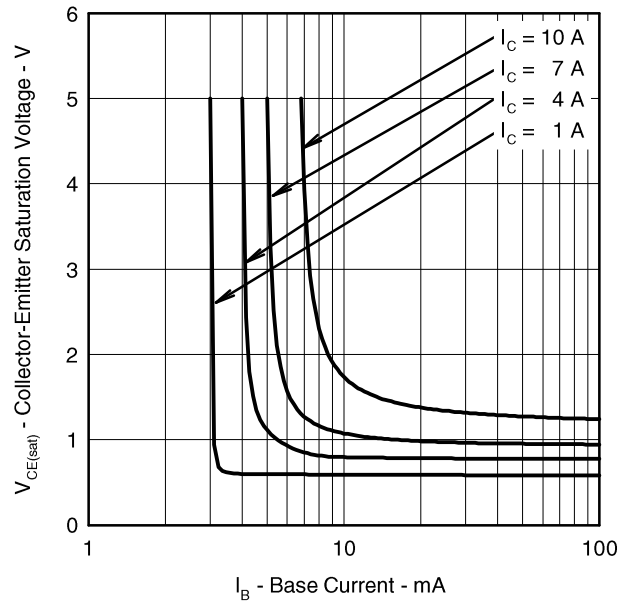


Figure 4.

BASE-EMITTER SATURATION VOLTAGE
VS
BASE CURRENT

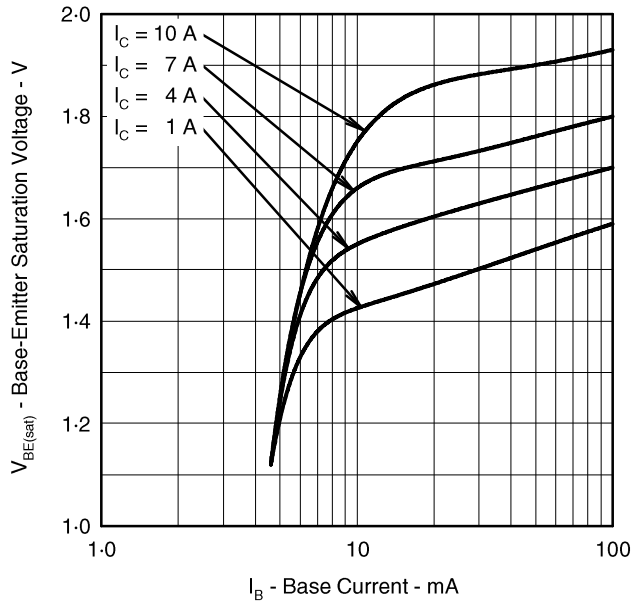


Figure 5.

COLLECTOR CUT-OFF CURRENT
VS
CASE TEMPERATURE

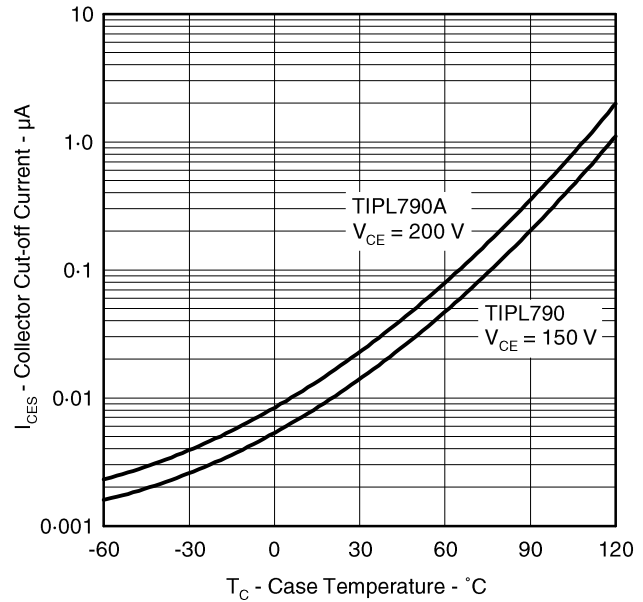


Figure 6.

MAXIMUM SAFE OPERATING REGIONS

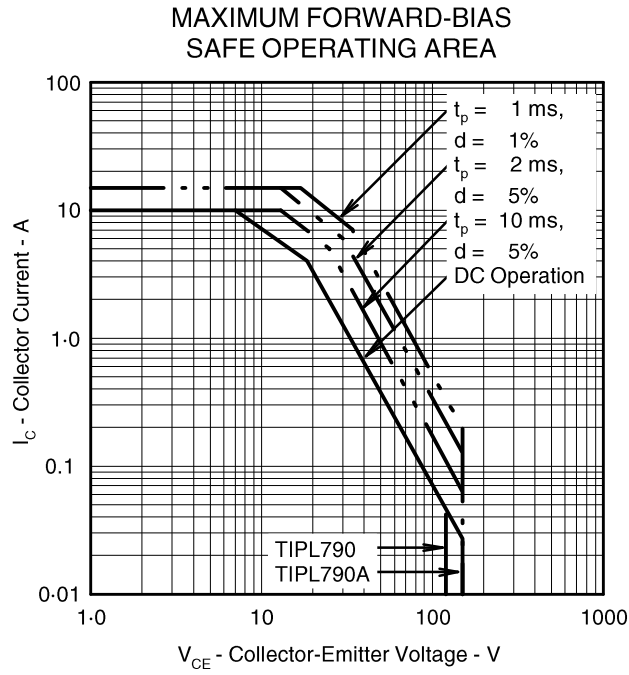


Figure 7.

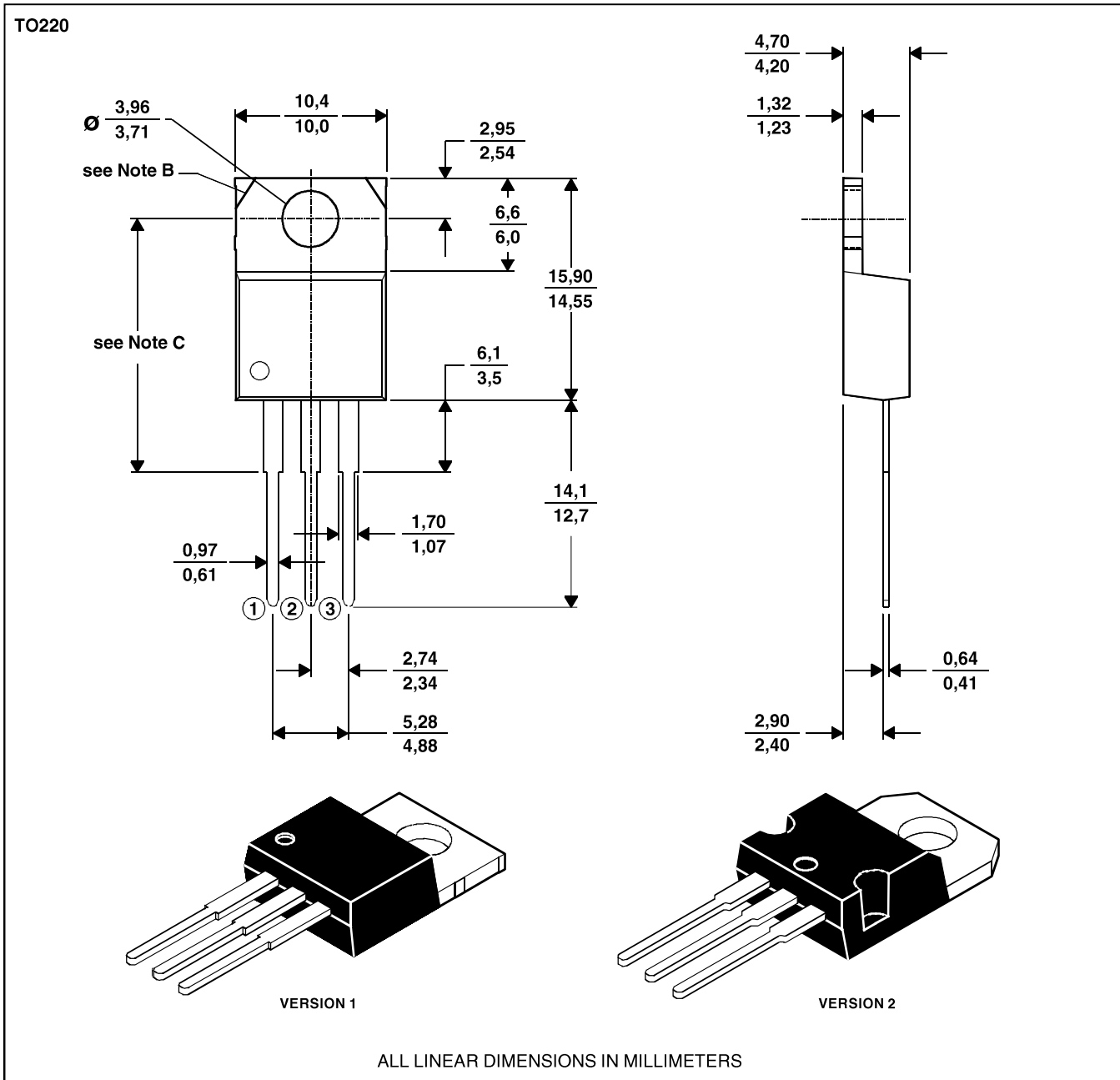
TIPL790, TIPL790A NPN SILICON POWER DARLINGTONS

MECHANICAL DATA

TO-220

3-pin plastic flange-mount package

This single-in-line package consists of a circuit mounted on a lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated in high humidity conditions. Leads require no additional cleaning or processing when used in soldered assembly.



- NOTES: A. The centre pin is in electrical contact with the mounting tab.
 B. Mounting tab corner profile according to package version.
 C. Typical fixing hole centre stand off height according to package version.
 Version 1, 18.0 mm. Version 2, 17.6 mm.