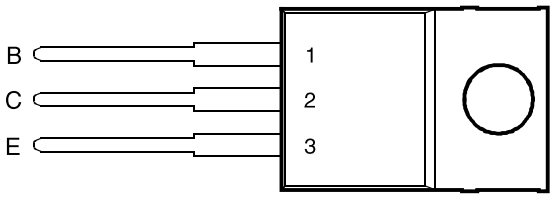
TIPL790, TIPL790A
NPN SILICON POWER DARLINGTONS

- **Rugged Epitaxial Planar Construction**
- **10 A Continuous Collector Current**
- **Operating Characteristics Fully Guaranteed at 100˚C**
- **t_{xo} 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 TIPL790A	V_{CBO}	150 200	V
Collector-emitter voltage (V_{BE} = 0)	TIPL790 TIPL790A	V_{CES}	150 200	V
Collector-emitter voltage (I_B = 0)	TIPL790 TIPL790A	V_{CEO}	120 150	V
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 $\leq 2\%$.

t_{xo}	Cross over time			320	500	ns

† Voltage and current values shown are nominal; exact values vary slightly with transistor parameters.

PARAMETER MEASUREMENT INFORMATION

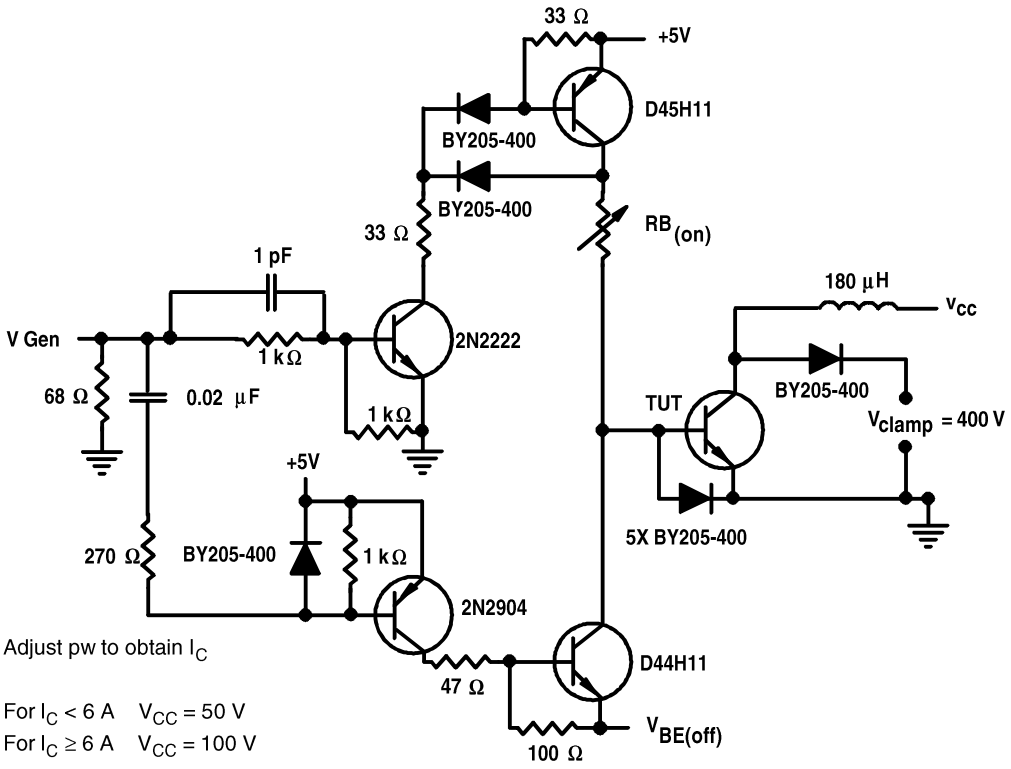
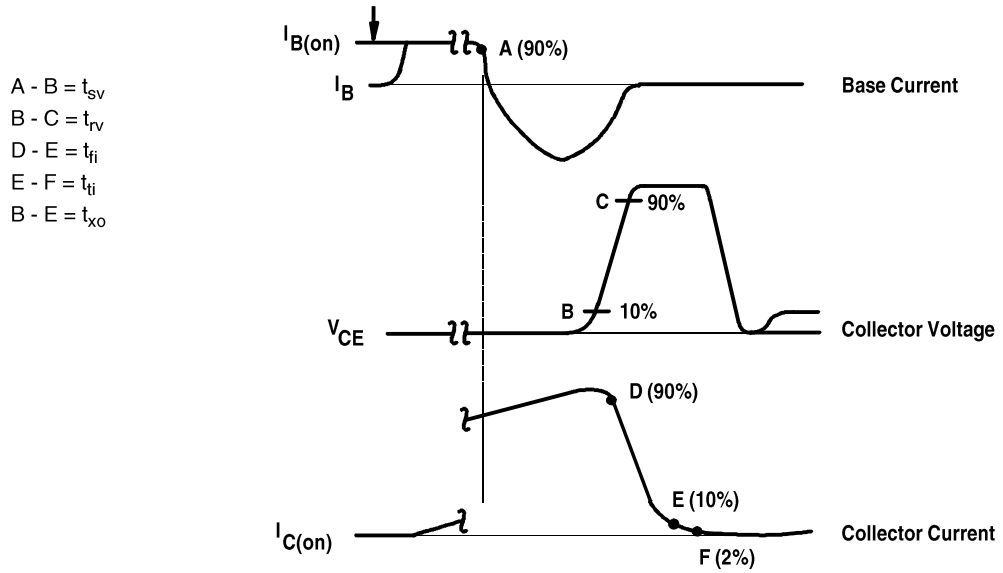


Figure 1. Inductive-Load Switching Test Circuit



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

Figure 2. Inductive-Load Switching Waveforms

TYPICAL CHARACTERISTICS

TYPICAL DC CURRENT GAIN
vs
COLLECTOR CURRENT

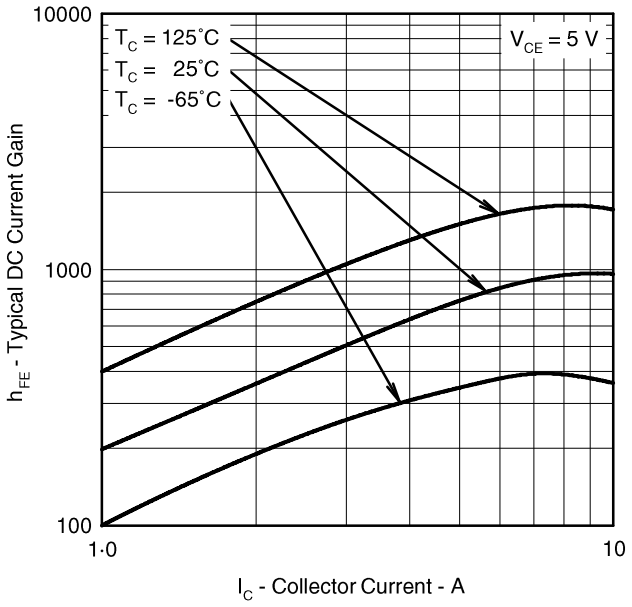


Figure 3.

COLLECTOR-EMITTER SATURATION VOLTAGE
vs
BASE CURRENT

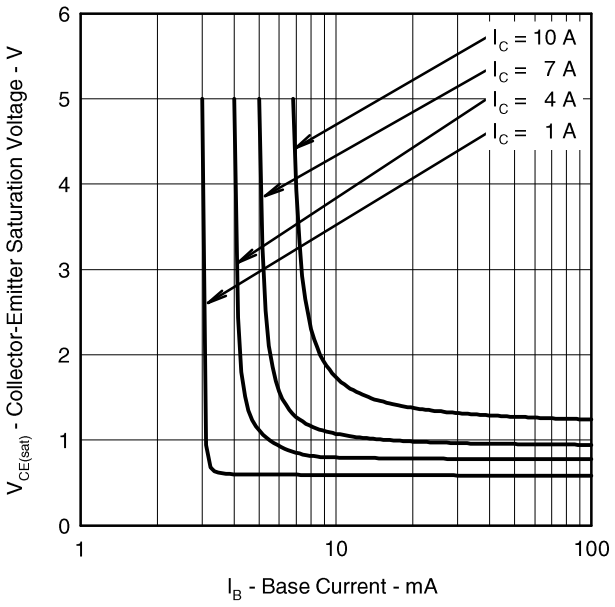


Figure 4.

BASE-EMITTER SATURATION VOLTAGE
vs
BASE CURRENT

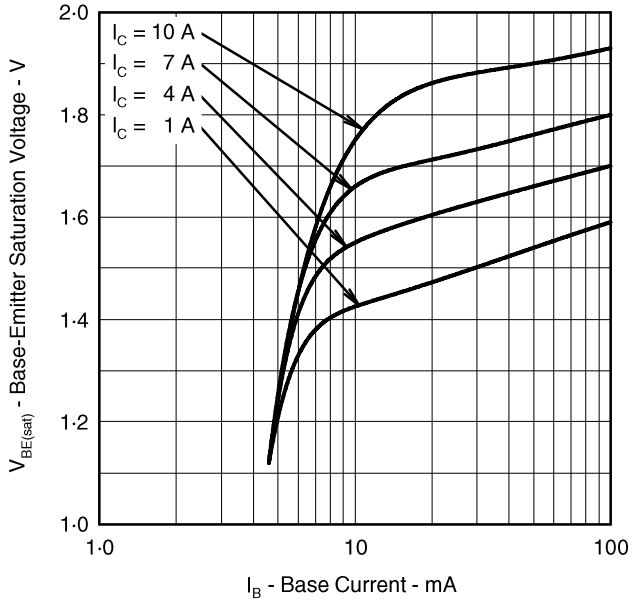


Figure 5.

COLLECTOR CUT-OFF CURRENT
vs
CASE TEMPERATURE

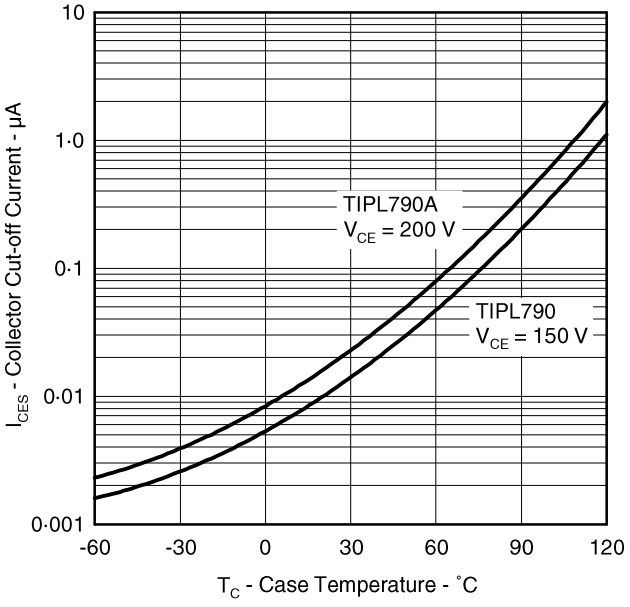


Figure 6.

MAXIMUM SAFE OPERATING REGIONS

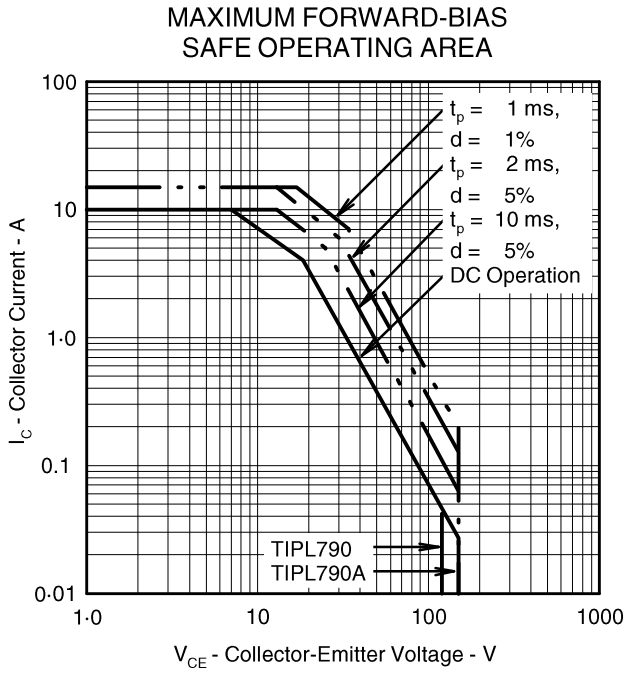


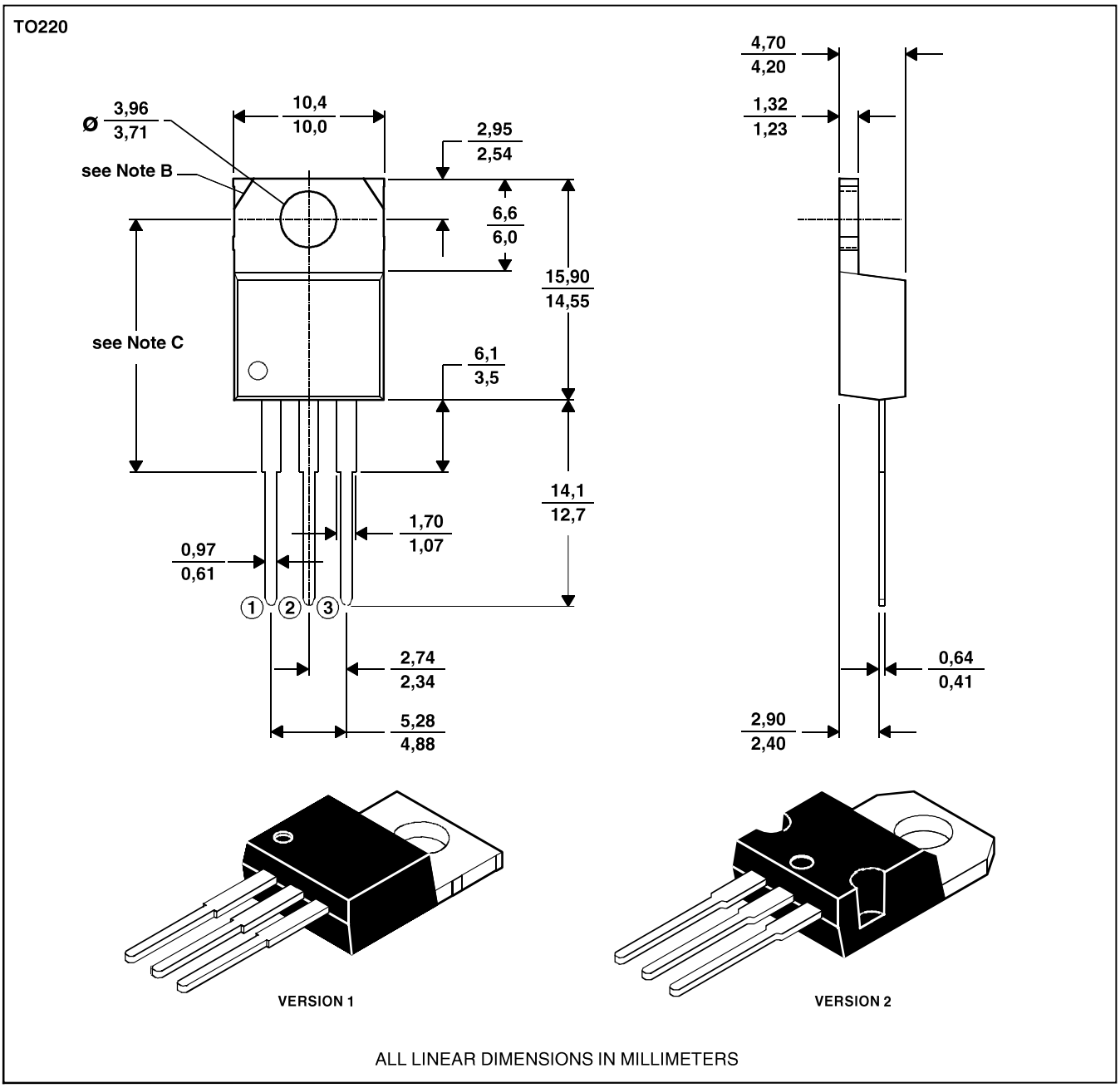
Figure 7.

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.