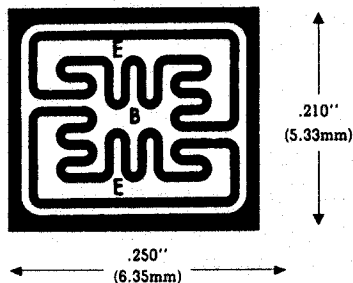


CHIP NUMBER

186



Base: .016" x .066" (0.41mm x 1.68mm)
Emitter: .014" x .176" (0.30mm x 4.47mm)

NPN EPITAXIAL/TRIPLE DIFFUSED PLANAR POWER TRANSISTOR** (FORMERLY 86)

CONTACT METALLIZATION

Base and emitter: > 50,000 Å Aluminum
Collector: Gold
(Polished silicon or "Chrome Nickel Silver" also available)

Also available on:

MOLY PEDESTAL

Size: .375" Diameter (9.53mm)
Thickness: .020" (0.51mm)

BeO PEDESTAL

Size: .250" x .312" (6.35mm x 7.93mm)
Thickness: .042" (1.07mm)

ASSEMBLY RECOMMENDATIONS

It is advisable that:

- the chip be eutectically mounted with gold silicon preform 98/2%.
- 12 mil (0.305mm) aluminum wire be ultrasonically attached to the base and emitter contacts.

TYPICAL ELECTRICAL CHARACTERISTICS AT 25°C

The following typical electrical characteristics apply for a completely finished component employing the chip number 186 in a TO-63 or equivalent case:

| V _{CEO} | V _{CE(s)} @ | I _C | I _B | h _{FE} @ | I _C | V _{CE} |
|------------------|----------------------|----------------|----------------|-------------------|----------------|-----------------|
| > 60V | < 0.6V | 10A | 1A | > 10 | 30A | 5V |
| > 80V | < 0.6V | 10A | 1A | > 10 | 30A | 5V |
| > 100V | < 0.6V | 10A | 1A | > 10 | 30A | 5V |
| > 120V | < 0.6V | 10A | 1A | > 10 | 30A | 5V |
| > 180V | < 1.0V | 10A | 1A | > 10 | 20A | 5V |

| V _{CEO} | V _{CEX} | V _{EB0} | f _T | C _{OB0} | θ _{JC} |
|------------------|------------------|------------------|----------------|------------------|-----------------|
| > 60V | 80V | > 8.0V | 25MHz | < 700pF | < 0.8°C/W |
| > 80V | 100V | > 8.0V | 25MHz | < 700pF | < 0.8°C/W |
| > 100V | 120V | > 8.0V | 25MHz | < 700pF | < 0.8°C/W |
| > 120V | 140V | > 8.0V | 25MHz | < 700pF | < 0.8°C/W |
| > 180V | 200V | > 8.0V | 20MHz | < 700pF | < 0.8°C/W |

TYPICAL DEVICE TYPES: 2N3597, 2N3599, 2N5539, SDT8301 - SDT8304 - SDT8758, BDY58

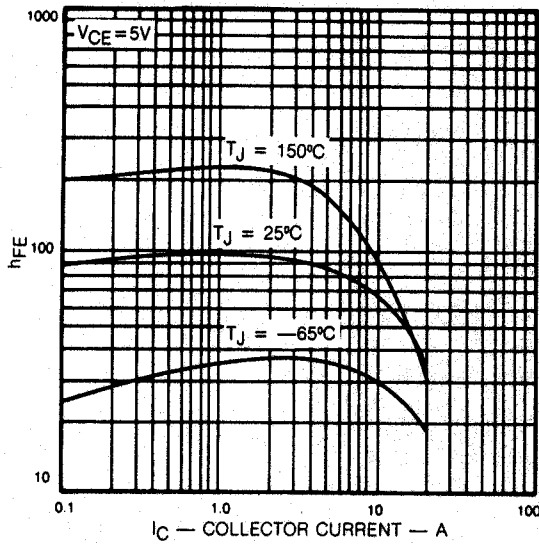
h_{FE} ranges available at I_C = 10A, V_{CE} = 5V, 30-90, and 40-120

h_{FE} > 80 available only as epitaxial planar.

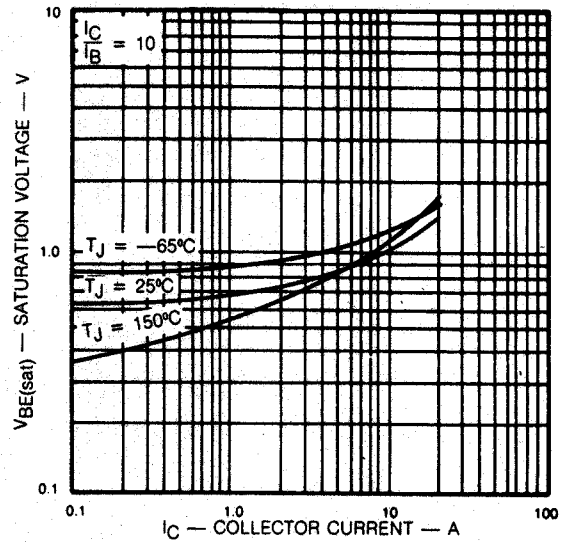
**The respective PNP complement is chip number 265.

CHIP TYPE 186

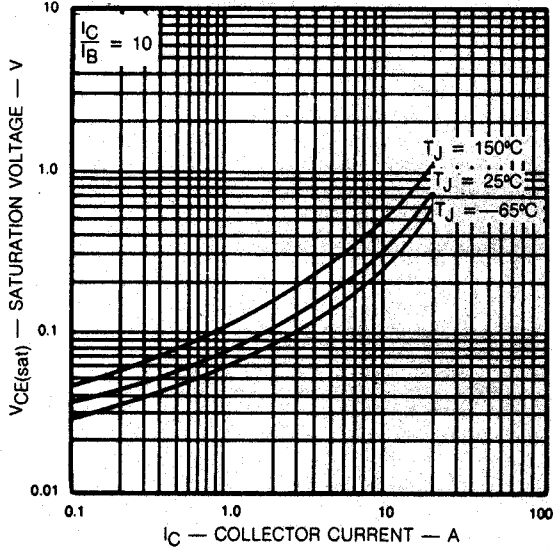
TYPICAL STATIC FORWARD CURRENT TRANSFER RATIO



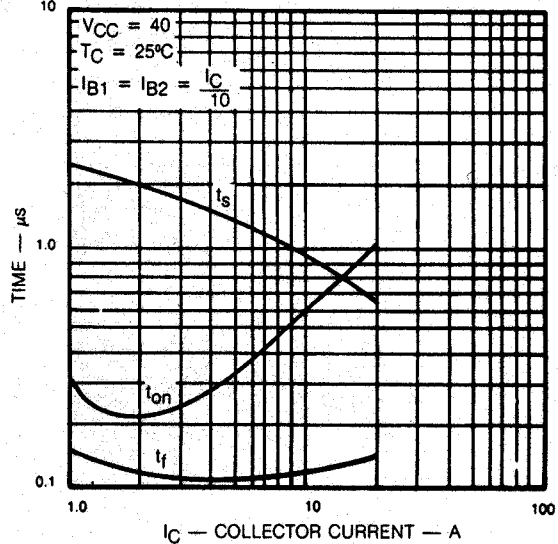
TYPICAL BASE EMITTER SATURATION VOLTAGE



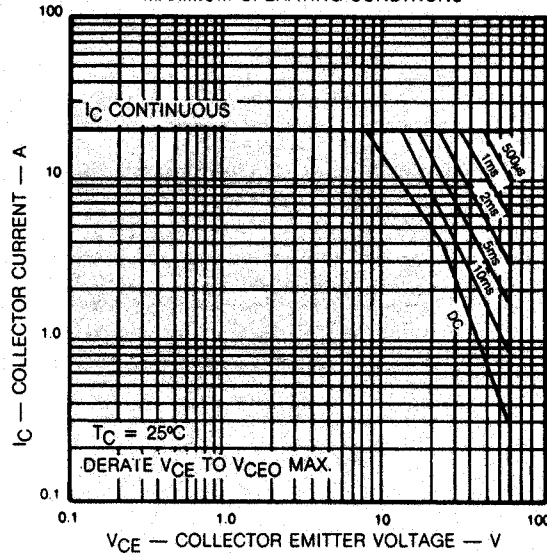
TYPICAL COLLECTOR EMITTER SATURATION VOLTAGE



TYPICAL SWITCHING TIME



MAXIMUM OPERATING CONDITIONS



NOTE:
PERFORMANCE CURVES
REPRESENT LOW TO
MIDDLE V_{CE} VOLTAGE
RANGE OF THIS PRODUCT