# BC 516 BC 517

COMPLEMENTARY
SILICON PLANAR EPITAXIAL DARLINGTON TRANSISTORS

MICRO ELECTRONICS

The BC516(PNP) and BC517(NPN) are complementary silicon planar epitaxial darlington transistors designed for preamplifier input stages requiring high input impendence and high gain.

CASE TO-92F

CEB

## ABSOLUTE MAXIMUM RATINGS

| | | |
|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 40V |
| Collector-Emitter Voltage | $V_{CEO}$ | 30V |
| Emitter-Base Voltage | $V_{EBO}$ | 10V |
| Collector Current | $I_C$ | 400mA |
| Total Power Dissipation | $P_{tot}$ | 625mW |
| Operating Junction & Storage Temperature | Tj,Tstg | -55 to +150°C |

## ELECTRICAL CHARACTERISTICS @ $T_A$=25°C

| PARAMETER | SYMBOL | MIN | TYP | MAX | UNIT | TEST CONDITIONS |
|---|---|---|---|---|---|---|
| Collector-Base Breakdown Voltage | $BV_{CBO}$ | 40 | | | V | $I_C$=0.01mA $I_E$=0 |
| Collector-Emitter Breakdown Voltage | $BV_{CEO}$ | 30 | | | V | $I_C$=2mA $I_B$=0 |
| Emitter-Base Breakdown Voltage | $BV_{EBO}$ | 10 | | | V | $I_E$=100nA $I_C$=0 |
| Collector Cutoff Current | $I_{CBO}$ | | | 100 | nA | $V_{CB}$=30V $I_E$=0 |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | | | 1 | V | $I_C$=100mA $I_B$=0.1mA |
| Base-Emitter Voltage | $V_{BE}$ | | | 1.4 | V | $I_C$=10mA $V_{CE}$=5V |
| D.C. Current Gain | $H_{FE}$ | 30K | | | | $I_C$=20mA $V_{CE}$=2V |
| Output Capacitance BC516<br>BC517 | Cob | | 4.5<br>3.5 | | pF<br>pF | $V_{CB}$=10V f=1MHz |
| Current Gain-Bandwidth Product | fT | | 220 | | MHz | $I_C$=10mA $V_{CE}$=5V f=20MHz |
| Average Noise Figure | NF | | | 15 | dB | $I_C$=1mA $V_{CE}$=5V $R_G$=10KΩ BW=15.7kHz f1=10Hz f2=10kHz |

8.79.0430B+0650B.4300B+6500B

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