

BC440
BC441**BC460**
BC461

COMPLEMENTARY SILICON AF MEDIUM POWER AMPLIFIERS & SWITCHES

CASE TO-39



THE BC440, BC441, BC460, BC461 ARE SILICON PLANAR EPITAXIAL TRANSISTORS FOR AF DRIVERS AND OUTPUTS, AS WELL AS FOR SWITCHING APPLICATIONS UP TO 1 AMPERE. THE BC440, BC441 ARE NPN AND ARE COMPLEMENTARY TO THE PNP BC460, BC461 RESPECTIVELY.

ABSOLUTE MAXIMUM RATINGS

For p-n-p devices, voltage and current values are negative.

| | |
|------------|------------|
| BC440(NPN) | BC441(NPN) |
| BC460(PNP) | BC461(PNP) |

| | | | |
|---|----------------|----------------------|-----|
| Collector-Emitter Voltage ($R_{BE} \leq 100 \Omega$) | V_{CER} | 50V | 75V |
| Collector-Emitter Voltage ($I_B = 0$) | V_{CEO} | 40V | 60V |
| Emitter-Base Voltage | V_{EBO} | 5V | 5V |
| Collector Current | I_C | 1A | |
| Collector Peak Current | I_{CM} | 2A | |
| Total Power Dissipation ($T_C \leq 25^\circ C$, $V_{CE} \leq 10V$) | P_{tot} | 10W | |
| | | 1W | |
| | | | |
| Operating Junction & Storage Temperature | T_j, T_{stg} | -55 to $200^\circ C$ | |

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ C$ unless otherwise noted)

| PARAMETER | SYMBOL | BC440 BC460 | | BC441 BC461 | | UNIT | TEST CONDITIONS |
|--------------------------------------|-----------------|----------------|-----|----------------|-----|---------|-------------------------------------|
| | | MIN | MAX | MIN | MAX | | |
| Collector-Emitter Breakdown Voltage | V_{CEO}^* | 40 | | 60 | | V | $I_C = 100mA$ $I_B = 0$ |
| Emitter-Base Breakdown Voltage | V_{EBO} | 5 | | 5 | | V | $I_E = 0.1mA$ $I_C = 0$ |
| Collector Cutoff Current | I_{CBO} | | 100 | | 100 | nA | $V_{CB} = 40V$ $I_E = 0$ |
| Collector Cutoff Current | I_{CER} | | 10 | | 10 | μA | $V_{CE} = 50V$ $R_{BE} = 100\Omega$ |
| | | | | | | μA | $V_{CE} = 70V$ $R_{BE} = 100\Omega$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}^*$ | | 1 | | 1 | V | $I_C = 1A$ $I_B = 0.1A$ |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}^*$ | | 1.5 | | 1.5 | V | $I_C = 1A$ $I_B = 0.1A$ |
| D.C. Current Gain | H_{FE}^* | 40 | 250 | 40 | 250 | V | $I_C = 500mA$ $V_{CE} = 4V$ |
| | Group 4 | 40 | 70 | 40 | 70 | | |
| | Group 5 | 60 | 130 | 60 | 130 | | |
| | Group 6 | 115 | 250 | 115 | 250 | | |
| | | 20 | | | | | $I_C = 1A$ $V_{CE} = 2V$ |
| Current Gain-Bandwidth Product | f_T | 50 | | 50 | | MHz | $I_C = 50mA$ $V_{CE} = 4V$ |
| Collector-Base Capacitance | C_{ob} | | 25 | | 25 | pF | $V_{CB} = 10V$ $I_E = 0$ |
| | | | | | | | $f = 1MHz$ |

* Pulse Test : Pulse Width=0.3ms, Duty Cycle=1%

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BC440 . BC441
BC460 . BC461

TYPICAL CHARACTERISTICS

