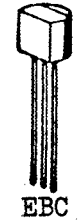


# BC 537 · BC 538

NPN SILICON AF MEDIUM POWER TRANSISTORS

THE BC537, BC538 ARE NPN SILICON PLANAR EPITAXIAL TRANSISTORS FOR USE IN AF DRIVER AND OUTPUT STAGES, AS WELL AS FOR UNIVERSAL APPLICATIONS. THE BC537, BC538 ARE COMPLEMENTARY TO THE PNP TYPE BC527, BC528 RESPECTIVELY.

CASE TO-92A



## ABSOLUTE MAXIMUM RATINGS

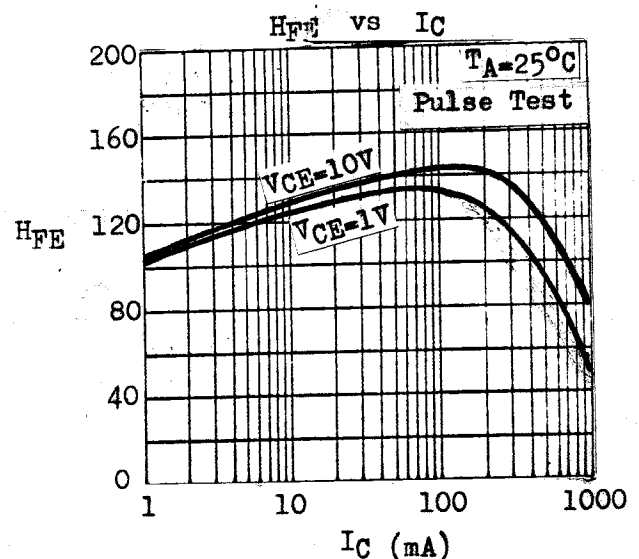
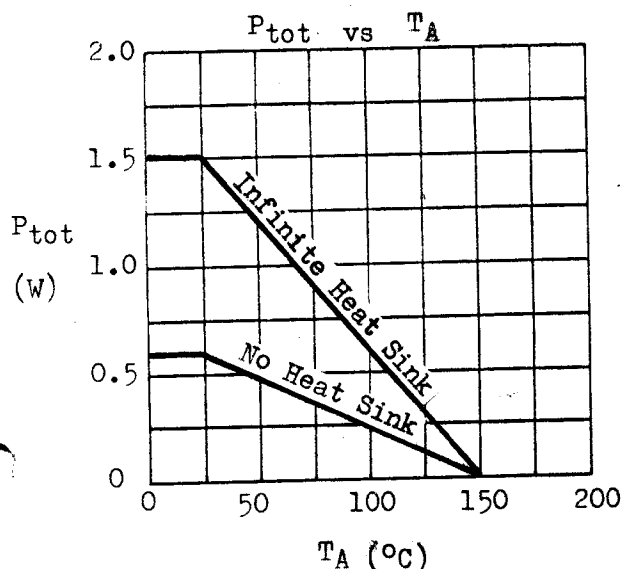
Collector-Base Voltage  
Collector-Emitter Voltage  
Emitter-Base Voltage  
Collector Current  
Collector Peak Current ( $t \leq 10\text{ms}$ )  
Total Power Dissipation (@  $T_C \leq 25^\circ\text{C}$ )  
(@  $T_A \leq 25^\circ\text{C}$ )  
Operating Junction & Storage Temperature

|                | BC537                      | BC538 |
|----------------|----------------------------|-------|
| $V_{CB0}$      | 60V                        | 80V   |
| $V_{CE0}$      | 60V                        | 80V   |
| $V_{EB0}$      | 6V                         |       |
| $I_C$          | 1A                         |       |
| $I_{CM}$       | 1.5A                       |       |
| $P_{tot}$      | 1.5W                       |       |
|                | 625mW                      |       |
| $T_j, T_{stg}$ | -55 to $150^\circ\text{C}$ |       |

## THERMAL RESISTANCE

Junction to Case  
Junction to Ambient

|               |                            |
|---------------|----------------------------|
| $\theta_{jc}$ | $83^\circ\text{C/W max.}$  |
| $\theta_{ja}$ | $200^\circ\text{C/W max.}$ |



**MICRO ELECTRONICS LTD.**

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KWUN TONG P. O. BOX 69477 CABLE ADDRESS "MICROTRON"  
TELEPHONE:- 3-430181-6 3-893363, 3-892423  
FAX: 3-410321

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

| PARAMETER                            | SYMBOL          | BC537 |     | BC538 |     | UNIT | TEST CONDITIONS                                |
|--------------------------------------|-----------------|-------|-----|-------|-----|------|------------------------------------------------|
|                                      |                 | MIN   | MAX | MIN   | MAX |      |                                                |
| Collector-Base Breakdown Voltage     | $BV_{CBO}$      | 60    |     | 80    |     | V    | $I_C=0.1\text{mA}$ $I_E=0$                     |
| Collector-Emitter Breakdown Voltage  | $LV_{CEO} *$    | 60    |     | 80    |     | V    | $I_C=10\text{mA}$ $I_B=0$                      |
| Emitter-Base Breakdown Voltage       | $BV_{EBO}$      | 6     |     | 6     |     | V    | $I_E=0.01\text{mA}$ $I_C=0$                    |
| Collector Cutoff Current             | $I_{CBO}$       |       | 100 |       | 100 | nA   | $V_{CB}=40\text{V}$ $I_E=0$                    |
|                                      |                 |       |     |       |     | nA   | $V_{CB}=60\text{V}$ $I_E=0$                    |
| Emitter Cutoff Current               | $I_{EBO}$       |       | 100 |       | 100 | nA   | $V_{EB}=4\text{V}$ $I_C=0$                     |
|                                      |                 |       |     |       |     |      |                                                |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)} *$ |       | 0.7 |       | 0.7 | V    | $I_C=500\text{mA}$ $I_B=50\text{mA}$           |
|                                      |                 |       |     |       |     | V    | $I_C=1\text{A}$ $I_B=0.1\text{A}$              |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)} *$ |       | 1.3 |       | 1.3 | V    | $I_C=150\text{mA}$ $I_B=15\text{mA}$           |
|                                      |                 |       |     |       |     |      |                                                |
| D.C. Current Gain                    | $H_{FE} *$      | 40    | 400 | 40    | 400 |      | $I_C=100\text{mA}$ $V_{CE}=1\text{V}$          |
|                                      |                 | 40    | 100 | 40    | 100 |      |                                                |
|                                      |                 | 63    | 160 | 63    | 160 |      |                                                |
|                                      |                 | 100   | 250 | 100   | 250 |      |                                                |
|                                      |                 | 160   | 400 | 160   | 400 |      |                                                |
|                                      | All Groups      |       |     |       |     |      |                                                |
|                                      | $H_{FE} *$      | 50    |     | 50    |     |      | $I_C=10\text{mA}$ $V_{CE}=10\text{V}$          |
|                                      |                 | 50    |     | 50    |     |      | $I_C=150\text{mA}$ $V_{CE}=10\text{V}$         |
|                                      |                 | 50    |     | 50    |     |      | $I_C=500\text{mA}$ $V_{CE}=10\text{V}$         |
|                                      |                 | 15    |     | 15    |     |      | $I_C=1\text{A}$ $V_{CE}=10\text{V}$            |
| Current Gain-Bandwidth Product       | $f_T$           | 100   |     | 100   |     | MHz  | $I_C=50\text{mA}$ $V_{CE}=10\text{V}$          |
| Collector-Base Capacitance           | $C_{ob}$        |       | 15  |       | 15  | pF   | $V_{CB}=10\text{V}$ $I_E=0$<br>$f=1\text{MHz}$ |

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

