

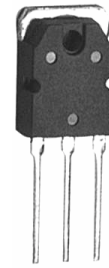


2SD717

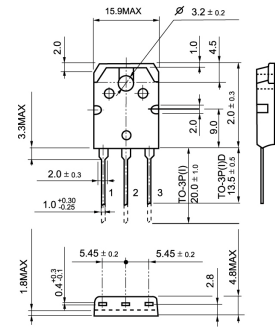
Silicon Epitaxial Planar Transistor

GENERAL DESCRIPTION

Silicon NPN high frequency, high power transistors in a plastic envelope, primarily for use in audio and general purpose



TO-3P(I)D



QUICK REFERENCE DATA

| SYMBOL | PARAMETER | CONDITIONS | TYP | MAX | UNIT |
|-------------|---------------------------------------|---|-----|------|---------|
| V_{CBO} | Collector-emitter voltage peak value | $V_{BE} = 0V$ | - | 70 | V |
| V_{CEO} | Collector-emitter voltage (open base) | | - | 70 | V |
| I_C | Collector current (DC) | | - | 10 | A |
| I_{CM} | Collector current peak value | | - | | A |
| P_{tot} | Total power dissipation | $T_{mb} \leq 25^\circ C$ | - | 80 | W |
| V_{CEsat} | Collector-emitter saturation voltage | $I_C = 4.0A; I_B = 0.4A$ | - | 2 | V |
| V_F | Diode forward voltage | $I_F = 3.5A$ | 1.5 | 2.0 | V |
| t_f | Fall time | $I_C = 4A, I_{B1} = -I_{B2} = 0.4A, V_{CC} = 30V$ | 0.4 | 1.0- | μs |

LIMITING VALUES

| SYMBOL | PARAMETER | CONDITIONS | MIN | MAX | UNIT |
|------------|---------------------------------------|--------------------------|-----|-----|------------|
| V_{CESM} | Collector-emitter voltage peak value | $V_{BE} = 0V$ | - | 70 | V |
| V_{CEO} | Collector-emitter voltage (open base) | | - | 70 | V |
| V_{EBO} | Emitter-base voltage (open collector) | | | 5 | V |
| I_C | Collector current (DC) | | - | 10 | A |
| I_B | Base current (DC) | | - | 2.5 | A |
| P_{tot} | Total power dissipation | $T_{mb} \leq 25^\circ C$ | - | 80 | W |
| T_{sta} | Storage temperature | | -55 | 150 | $^\circ C$ |
| T_j | Junction temperature | | - | 150 | $^\circ C$ |

ELECTRICAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | TYP | MAX | UNIT |
|---------------|---------------------------------------|---|-----|-----|------|
| I_{CBO} | Collector-base cut-off current | $V_{CB} = 70V$ | - | 0.2 | mA |
| I_{EBO} | Emitter-base cut-off current | $V_{EB} = 5V$ | - | 0.2 | mA |
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage | $I_C = 1mA$ | 70 | | V |
| V_{CEsat} | Collector-emitter saturation voltages | $I_C = 4.0A; I_B = 0.4A$ | - | 3 | V |
| h_{FE} | DC current gain | $I_C = 1A; V_{CE} = 5V$ | 50 | 240 | |
| f_T | Transition frequency at $f = 5MHz$ | $I_C = 1A; V_{CE} = 12V$ | 10 | - | MHz |
| C_c | Collector capacitance at $f = 1MHz$ | $V_{CB} = 10V$ | 350 | - | pF |
| t_{on} | On times | $I_C = 4A, I_{B1} = -I_{B2} = 0.4A, V_{CC} = 30V$ | 0.3 | | us |
| t_s | Turn-off storage time | $I_C = 4A, I_{B1} = -I_{B2} = 0.4A, V_{CC} = 30V$ | 2.5 | | us |
| t_f | Fall time | $I_C = 4A, I_{B1} = -I_{B2} = 0.4A, V_{CC} = 30V$ | 0.4 | | us |