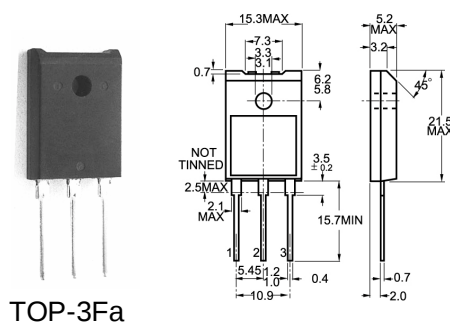


**2SD1577****Silicon Diffused Power Transistor****GENERAL DESCRIPTION**

Highvoltage,high-speed switching npn transistors in a plastic envelope with integrated efficiency diode,primarily for use in switching power circuites of colour television receivers

**QUICK REFERENCE DATA**

| SYMBOL      | PARAMETER                             | CONDITIONS                   | TYP | MAX  | UNIT    |
|-------------|---------------------------------------|------------------------------|-----|------|---------|
| $V_{CESM}$  | Collector-emitter voltage peak value  | $V_{BE} = 0V$                | -   | 1500 | V       |
| $V_{CEO}$   | Collector-emitter voltage (open base) |                              | -   | 600  | V       |
| $I_C$       | Collector current (DC)                |                              | -   | 3    | A       |
| $I_{CM}$    | Collector current peak value          |                              | -   | 6    | A       |
| $P_{tot}$   | Total power dissipation               | $T_{mb} \leq 25^\circ C$     | -   | 40   | W       |
| $V_{CEsat}$ | Collector-emitter saturation voltage  | $I_C = 3.0A; I_B = 0.8A$     | -   | 5    | V       |
| $I_{csat}$  | Collector saturation current          | $f = 16KHz$                  | -   | -    | A       |
| $V_F$       | Diode forward voltage                 |                              | -   | -    | V       |
| $t_f$       | Fall time                             | $I_{Csat} = 3.0A; f = 16KHz$ | -   | 1.0  | $\mu s$ |

**LIMITING VALUES**

| SYMBOL     | PARAMETER                             | CONDITIONS               | MIN | MAX  | UNIT       |
|------------|---------------------------------------|--------------------------|-----|------|------------|
| $V_{CESM}$ | Collector-emitter voltage peak value  | $V_{BE} = 0V$            | -   | 1500 | V          |
| $V_{CEO}$  | Collector-emitter voltage (open base) |                          | -   | 600  | V          |
| $I_C$      | Collector current (DC)                |                          | -   | 3    | A          |
| $I_{CM}$   | Collector current peak value          |                          | -   | 6    | A          |
| $I_B$      | Base current (DC)                     |                          | -   | -    | A          |
| $I_{BM}$   | Base current peak value               |                          | -   | -    | A          |
| $P_{tot}$  | Total power dissipation               | $T_{mb} \leq 25^\circ C$ | -   | 40   | W          |
| $T_{sta}$  | Storage temperature                   |                          | -65 | 150  | $^\circ C$ |
| $T_j$      | Junction temperature                  |                          | -   | 150  | $^\circ C$ |

**ELECTRICAL CHARACTERISTICS**

| SYMBOL        | PARAMETER                                     | CONDITIONS                                                 | TYP | MAX | UNIT    |
|---------------|-----------------------------------------------|------------------------------------------------------------|-----|-----|---------|
| $I_{CE}$      | Collector cut-off current                     | $V_{BE} = 0V; V_{CE} = V_{CESMmax}$                        | -   | 1.0 | mA      |
| $I_{CES}$     |                                               | $V_{BE} = 0V; V_{CE} = V_{CESMmax}$<br>$T_j = 125^\circ C$ | -   | 2.5 | mA      |
| $V_{CEOsust}$ | Collector-emitter sustaining voltage          | $I_B = 0A; I_C = 100mA$<br>$L = 25mH$                      | -   | -   | V       |
| $V_{CEsat}$   | Collector-emitter saturation voltages         | $I_C = 3.0A; I_B = 0.8A$                                   | -   | 5   | V       |
| $V_{BEsat}$   | Base-emitter satuation voltage                | $I_C = 3.0A, I_B = 0.8A$                                   | -   | 1.5 | V       |
| $h_{FE}$      | DC current gain                               | $I_C = 0.5A; V_{CE} = 5V$                                  | 8   | -   | -       |
| $V_F$         | Diode forward voltage                         |                                                            | -   | -   | V       |
| $f_T$         | Transition frequency at $f = 5MHz$            | $I_C = 0.1A; V_{CE} = 10V$                                 | 3   | -   | MHz     |
| $C_c$         | Collector capacitance at $f = 1MHz$           | $V_{CB} = 10V$                                             | 90  | -   | pF      |
| $t_s$         | Switching times(16KHz line deflecton circuit) | $I_C = 3A, I_{B(end)} = 0.8A, V_{CC} = 105V$               | -   | -   | $\mu s$ |
| $t_f$         | Turn-off storage time    Turn-off fall time   | $I_C = 3A, I_{B(end)} = 0.8A, V_{CC} = 105V$               | 0.7 | 1.0 | $\mu s$ |