

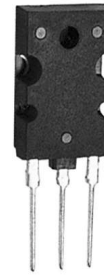


## 2SD1427

## Silicon Diffused Power Transistor

### GENERAL DESCRIPTION

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



TO-3PH

### 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)                |                              | -   | 5    | A       |
| $I_{CM}$    | Collector current peak value          |                              | -   | 10   | A       |
| $P_{tot}$   | Total power dissipation               | $T_{mb} \leq 25^\circ C$     | -   | 80   | W       |
| $V_{CEsat}$ | Collector-emitter saturation voltage  | $I_C = 4.0A; I_B = 0.8A$     | -   | 5    | V       |
| $I_{csat}$  | Collector saturation current          | $f = 16KHz$                  | -   | -    | A       |
| $V_F$       | Diode forward voltage                 | $I_F = 4.0A$                 | 1.2 | 1.5  | V       |
| $t_f$       | Fall time                             | $I_{Csat} = 4.0A; f = 16KHz$ | 0.5 | 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)                |                          | -   | 5    | A          |
| $I_{CM}$   | Collector current peak value          |                          | -   | 10   | A          |
| $I_B$      | Base current (DC)                     |                          | -   | -    | A          |
| $I_{BM}$   | Base current peak value               |                          | -   | -    | A          |
| $P_{tot}$  | Total power dissipation               | $T_{mb} \leq 25^\circ C$ | -   | 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    |
|------------------|---|--|-----|-----|---------|
| $I_{CE}$         | Collector cut-off current                     | $V_{BE} = 0V; V_{CE} = V_{CESMmax}$                          | -   | 1.0 | mA      |
| $I_{CES}$        |   | $V_{BE} = 0V; V_{CE} = V_{CESMmax}$                          | -   | 2.0 | mA      |
| $V_{CEO_{sust}}$ | Collector-emitter sustaining voltage          | $T_j = 125^\circ C$<br>$I_B = 0A; I_C = 100mA$<br>$L = 25mH$ | -   |     | V       |
| $V_{CEsat}$      | Collector-emitter saturation voltages         | $I_C = 4.0A; I_B = 0.8A$                                     | -   | 5.0 | V       |
| $V_{BEsat}$      | Base-emitter saturation voltage               | $I_C = 4.0A; I_B = 0.8A$                                     | -   | 1.5 | V       |
| $h_{FE}$         | DC current gain                               | $I_C = 1.0A; V_{CE} = 5V$                                    | 8   |     |         |
| $V_F$            | Diode forward voltage                         | $I_F = 4.0A$   | 1.2 | 1.5 | V       |
| $f_T$            | Transition frequency at $f = 5MHz$            | $I_C = 0.1A; V_{CE} = 10V$                                   | 2   | -   | MHz     |
| $C_c$            | Collector capacitance at $f = 1MHz$           | $V_{CB} = 10V$   | 80  | -   | pF      |
| $t_s$            | Switching times(16KHz line deflecton circuit) | $I_{Csat} = 4.0A; L_c = 1mH; C_{fb} = 4nF$                   | -   | -   | $\mu s$ |
| $t_f$            | Turn-off storage time Turn-off fall time      | $I_{B(end)} = 0.8A; I_C = 4.0A; V_{CC} = 105V$               | 0.5 | 1.0 | $\mu s$ |