

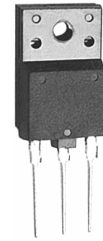


**S2055AF**

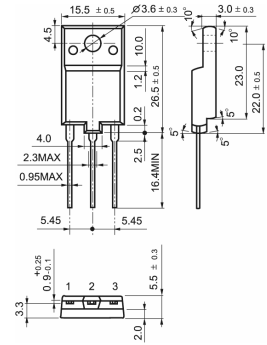
**SILICON DIFFUSED POWER TRANSISTOR**

**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-3PM



**QUICK REFERENCE DATA**

| 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)                |  |     | 8    | A       |
| $I_{CM}$    | Collector current peak value          |  |     | 15   | A       |
| $P_{tot}$   | Total power dissipation               | $T_{mb} \leq 25^\circ C$                             |     | 125  | W       |
| $V_{CEsat}$ | Collector-emitter saturation voltage  | $I_C = 4.5A; I_B = 2.0A$                             |     | 1.5  | V       |
| $I_{csat}$  | Collector saturation current          | $f = 16KHz$  |     |      | A       |
| $V_F$       | Diode forward voltage                 | $I_F = 4.0A$   |     | 2.0  | V       |
| $t_f$       | Fall time                             | $I_C = 4.5A, I_{B1} = -I_{B2} = 1.2A, V_{CC} = 140V$ |     | 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          |
| $V_{EBO}$  | Emitter-base voltage(open collector)  |                          |     | 5    | V          |
| $I_C$      | Collector current (DC)                |                          |     | 8    | A          |
| $I_B$      | Base current (DC)                     |                          |     | 4    | A          |
| $I_{BM}$   | Base current peak value               |                          |     | 6    | A          |
| $P_{tot}$  | Total power dissipation               | $T_{mb} \leq 25^\circ C$ |     | 125  | W          |
| $T_{stn}$  | Storage temperature                   |                          | -55 | 150  | $^\circ C$ |
| $T_j$      | Junction temperature                  |                          |     | 150  | $^\circ C$ |

**ELECTRICAL CHARACTERISTICS**

| SYMBOL        | PARAMETER                                     | CONDITIONS   | MIN | MAX | UNIT    |
|---------------|---|--|-----|-----|---------|
| $I_{CE}$      | Collector-emitter 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      |
| $V_{CEOsust}$ | 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         | $I_C = 4.5A; I_B = 2.0A$                                     |     | 1.5 | V       |
| $V_{BEsat}$   | Base-emitter saturation voltage               | $I_C = 4.5A; I_B = 2.0A$                                     |     | 2.5 | V       |
| $h_{FE}$      | DC current gain                               | $I_C = 1.0A; V_{CE} = 5V$                                    | 8   | 30  |         |
| $V_F$         | Diode forward voltage                         | $I_F = 4.5A$   |     | 2.0 | V       |
| $f_T$         | Transition frequency at $f = 1MHz$            | $I_C = 0.1A; V_{CE} = 10V$                                   | 3   |     | MHz     |
| $C_c$         | Collector capacitance at $f = 1MHz$           | $V_{CB} = 10V$   |     |     | pF      |
| $t_s$         | Switching times(16KHz line deflecton circuit) | $I_C = 4.5A, I_{B1} = -I_{B2} = 1.2A, V_{CC} = 140V$         |     | 7.0 | $\mu s$ |
| $t_f$         | Turn-off storage time Turn-off fall time      | $I_C = 4.5A, I_{B1} = -I_{B2} = 1.2A, V_{CC} = 140V$         |     | 1.0 | $\mu s$ |