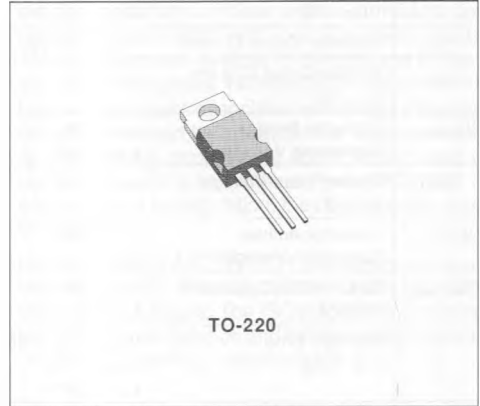




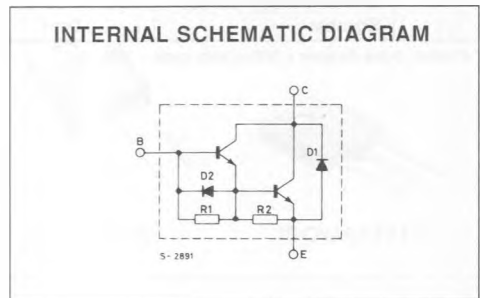
**HIGH VOLTAGE FAST SWITCHING NPN DARLINGTON**

ADVANCE DATA

- HIGH VOLTAGE
- HIGH GAIN
- FAST SWITCHING
- GOOD RBSOA



**INTERNAL SCHEMATIC DIAGRAM**



**DESCRIPTION**

The SGSD00055 is a silicon multiepitaxial planar NPN transistor in monolithic Darlington configuration with an integrated speed-up diode mounted in TO-220 plastic package. It is a fast switching high voltage device intended for off-line flyback SMPS and monochrome deflection.

**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CES}$	Collector-emitter Voltage ( $V_{BE} = 0$ )	1000	V
$V_{CEV}$	Collector-emitter Voltage ( $V_{BE} = -1.5V$ )	1000	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	400	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	7	V
$I_C$	Collector Current	7	A
$I_{CM}$	Collector Peak Current ( $t_p < 1ms$ )	10	A
$I_B$	Base Current	3	A
$P_{tot}$	Total Dissipation at $T_c < 25^\circ C$	75	W
$T_{stg}$	Storage Temperature	- 65 to 150	$^\circ C$
$T_j$	Max. Operating Junction Temperature	150	$^\circ C$

## THERMAL DATA

$R_{th(j-case)}$	Thermal Resistance Junction-case	max	1.67	$^{\circ}\text{C/W}$
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ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}\text{C}$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CES}$	Collector Cutoff Current ( $V_{BE} = 0$ )	$V_{CE} = 1000\text{V}$ $V_{CE} = 1000\text{V}$ $T_c = 125^{\circ}\text{C}$			200 2	$\mu\text{A}$ $\text{mA}$
$I_{CEX}$	Collector Cutoff Current	$V_{CE} = 1000\text{V}$ $V_{BE} = -1.5\text{V}$			200	$\mu\text{A}$
$I_{EBC}$	Emitter Cutoff Current ( $I_C = 0$ )	$V_{EB} = 5\text{V}$			50	$\text{mA}$
$V_{CE0(isus)}^*$	Collector Emitter Sustaining Voltage	$I_C = 0.2\text{A}$ $V_{CL} = 400\text{V}$ $L = 25\text{mH}$	400			V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	$I_E = 50\text{mA}$	7			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 1.6\text{A}$ $I_B = 25\text{mA}$ $I_C = 3\text{A}$ $I_B = 200\text{mA}$			2 2.5	V V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	$I_C = 1.6\text{A}$ $I_B = 25\text{mA}$ $I_C = 3\text{A}$ $I_B = 200\text{mA}$			2.2 3	V V
$t_s$ $t_f$	Storage Time Fall Time	$V_{CC} = V_{CL} = 350\text{V}$ $I_C = 3\text{A}$ $V_{BB} = -5\text{V}$ $I_{B1} = 0.2\text{A}$ $L_C = 0.9\text{mH}$		0.8 0.15		$\mu\text{s}$ $\mu\text{s}$
$V_{CEW}$	Maximum Collector Emitter Voltage without Snubber	$V_{CC} = V_{CL} = 400\text{V}$ $I_C = 8\text{A}$ $V_{BB} = -5\text{V}$ $I_{B1} = 0.5\text{A}$ $L_C = 0.9\text{mH}$	400			V

\* Pulsed pulse duration =  $300\mu\text{s}$ , duty cycle = 1.5%.