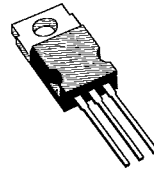
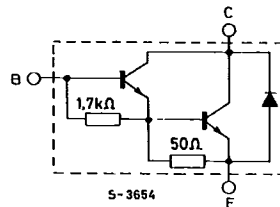


**DESCRIPTION**

The BU910, BU911, and BU912 are high voltage, silicon NPN transistors in monolithic Darlington configuration in JEDEC TO-220 plastic package, designed for applications such as electronic ignition, DC and AC motor controls, solenoid drivers, etc.



TO-220

**INTERNAL SCHEMATIC DIAGRAM****ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value			Unit
		BU910	BU911	BU912	
$V_{CES}$	Collector-emitter Voltage ( $V_{BE} = 0$ )	400	450	500	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	350	400	450	V
$V_{EBO}$	Emitter-base Voltage ( $I_C = 0$ )	5			V
$I_C$	Collector Current	6			A
$I_{CM}$	Collector Peak Current	10			A
$I_B$	Base Current	1			A
$P_{tot}$	Total Power Dissipation at $T_{case} \leq 25^\circ\text{C}$	60			W
$T_{slg}$	Storage Temperature	- 65 to 150			$^\circ\text{C}$
$T_J$	Junction Temperature	150			$^\circ\text{C}$

## THERMAL DATA

S G S-THOMSON

3QE D

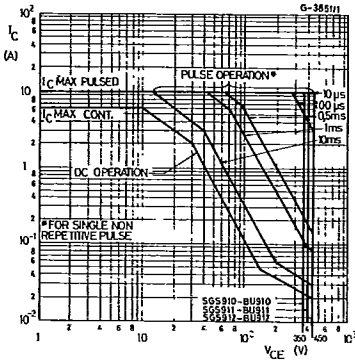
R <sub>th j-case</sub>	Thermal Resistance Junction-case	Max	2.08	°C/W
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ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25°C unless otherwise specified)

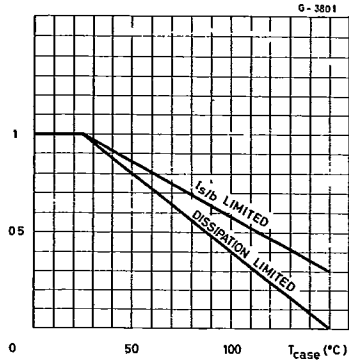
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CES</sub>	Collector Cutoff Current (V <sub>BE</sub> = 0)	for <b>BU910</b> V <sub>CE</sub> = 400V for <b>BU911</b> V <sub>CE</sub> = 450V for <b>BU912</b> V <sub>CE</sub> = 500V T <sub>case</sub> = 125°C for <b>BU910</b> V <sub>CE</sub> = 400V for <b>BU911</b> V <sub>CE</sub> = 450V for <b>BU912</b> V <sub>CE</sub> = 500V			1 1 1 5 5 5	mA mA mA mA mA mA
I <sub>CEO</sub>	Collector Cutoff Current (I <sub>B</sub> = 0)	for <b>BU910</b> V <sub>CE</sub> = 350V for <b>BU911</b> V <sub>CE</sub> = 400V for <b>BU912</b> V <sub>CE</sub> = 450V			1 1 1	mA mA mA
I <sub>EBO</sub>	Emitter Cutoff Current (I <sub>C</sub> = 0)	V <sub>EB</sub> = 5V			5	mA
V <sub>CEO(sus)</sub> *	Collector-emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 100mA for <b>BU910</b> for <b>BU911</b> for <b>BU912</b>	350 400 450			V V V
V <sub>CE(sat)</sub> *	Collector-emitter Saturation Voltage	for <b>BU910</b> and <b>BU911</b> I <sub>C</sub> = 2.5A I <sub>B</sub> = 50mA for <b>BU912</b> I <sub>C</sub> = 2A I <sub>B</sub> = 50mA All Types I <sub>C</sub> = 4A I <sub>B</sub> = 200mA			1.8 1.8 1.8	V V V
V <sub>BE(sat)</sub> *	Base-emitter Saturation Voltage	for <b>BU910</b> and <b>BU911</b> I <sub>C</sub> = 2.5A I <sub>B</sub> = 50mA for <b>BU912</b> I <sub>C</sub> = 2A I <sub>B</sub> = 50mA All Types I <sub>C</sub> = 4A I <sub>B</sub> = 200mA			2.2 2.2 2.5	V V V
V <sub>F</sub> *	Diode Forward Voltage	I <sub>F</sub> = 4A			2.5	V

\* Pulsed : pulse duration = 300μs, duty cycle = 1.5%

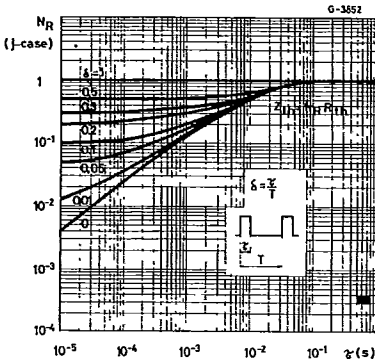
Safe Operating Area.



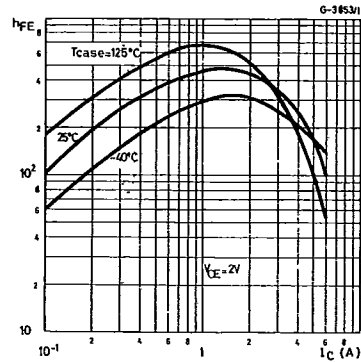
Derating Curves.



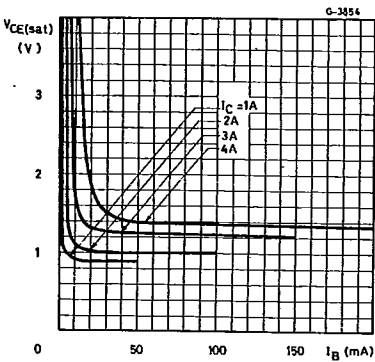
Thermal Transient Response.



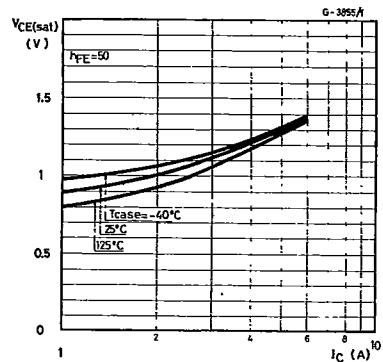
DC Current Gain.



Collector-emitter Saturation Voltage.



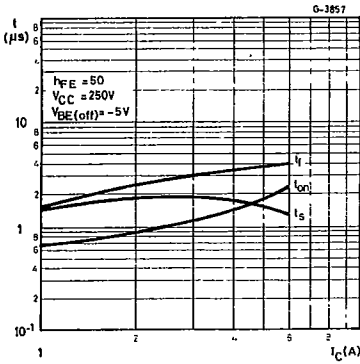
Collector-emitter Saturation Voltage.



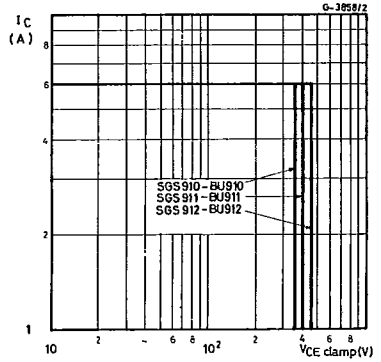
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3DE D

Saturated Switching Characteristics.



Clamped Reverse bias Safe Operating Areas.



Clamped  $E_{s/b}$  Test Circuit.

SGS-THOMSON

3DE D

