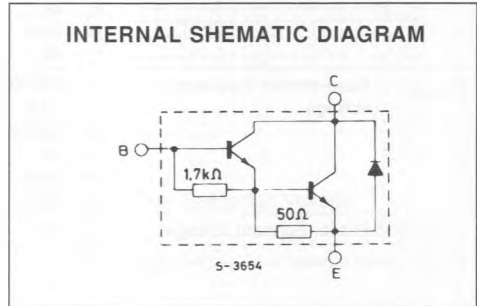
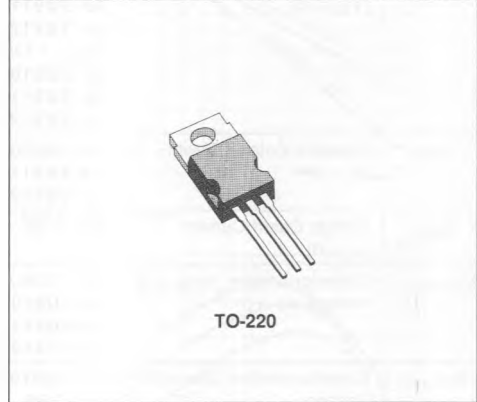


HIGH VOLTAGE POWER DARLINGTON

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.



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_{101}	Total Power Dissipation at $T_{case} \leq 25^\circ\text{C}$	60			W
T_{sig}	Storage Temperature	- 65 to 150			$^\circ\text{C}$
T_J	Junction Temperature	150			$^\circ\text{C}$

THERMAL DATA

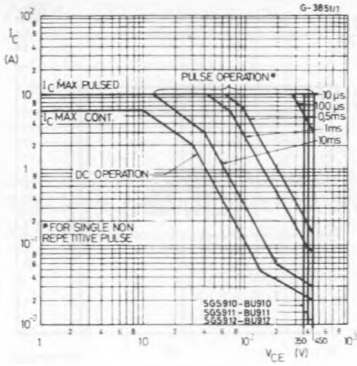
$R_{th(j-case)}$	Thermal Resistance Junction-case	Max	2.08	$^{\circ}C/W$
------------------	----------------------------------	-----	------	---------------

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

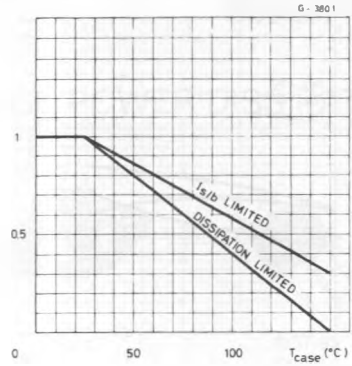
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cutoff Current ($V_{BE} = 0$)	for BU910 $V_{CE} = 400V$ for BU911 $V_{CE} = 450V$ for BU912 $V_{CE} = 500V$ $T_{case} = 125^{\circ}C$ for BU910 $V_{CE} = 400V$ for BU911 $V_{CE} = 450V$ for BU912 $V_{CE} = 500V$			1 1 1 5 5 5	mA mA mA mA mA mA
I_{CEO}	Collector Cutoff Current ($I_B = 0$)	for BU910 $V_{CE} = 350V$ for BU911 $V_{CE} = 400V$ for BU912 $V_{CE} = 450V$			1 1 1	mA mA mA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 5V$			5	mA
$V_{CEO(sus)}^*$	Collector-emitter Sustaining Voltage ($I_B = 0$)	$I_C = 100mA$ for BU910 for BU911 for BU912	350 400 450			V V V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	for BU910 and BU911 $I_C = 2.5A$ $I_B = 50mA$ for BU912 $I_C = 2A$ $I_B = 50mA$ All Types $I_C = 4A$ $I_B = 200mA$			1.8 1.8 1.8	V V V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	for BU910 and BU911 $I_C = 2.5A$ $I_B = 50mA$ for BU912 $I_C = 2A$ $I_B = 50mA$ All Types $I_C = 4A$ $I_B = 200mA$			2.2 2.2 2.5	V V V
V_F^*	Diode Forward Voltage	$I_F = 4A$			2.5	V

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

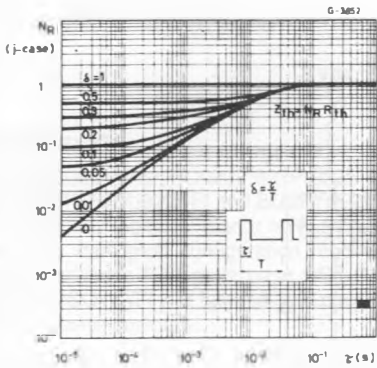
Safe Operating Area.



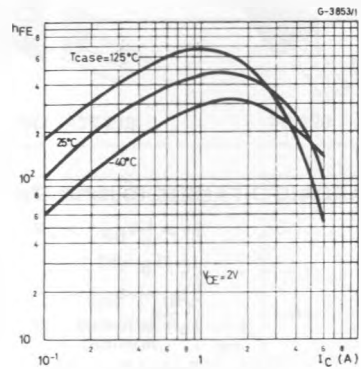
Derating Curves.



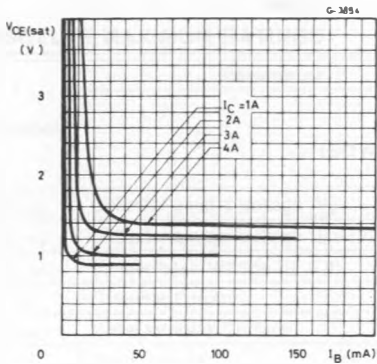
Thermal Transient Response.



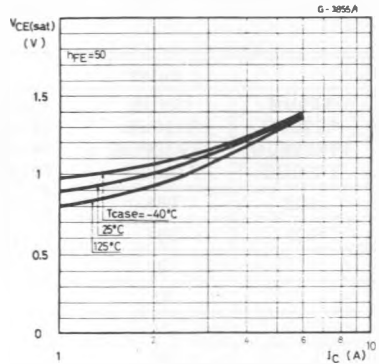
DC Current Gain.



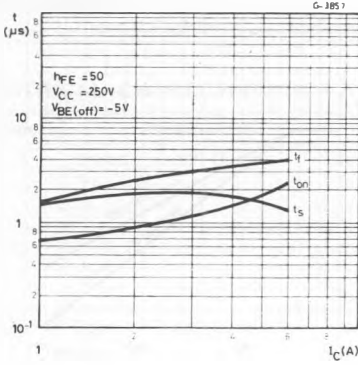
Collector-emitter Saturation Voltage.



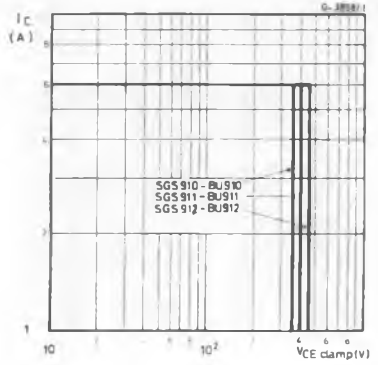
Collector-emitter Saturation Voltage.



Saturated Switching Characteristics.



Clamped Reverse bias Safe Operating Areas.



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

