

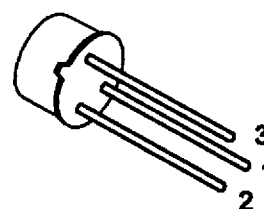
COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

■ SGS-THOMSON PREFERRED SALESTYPES

DESCRIPTION

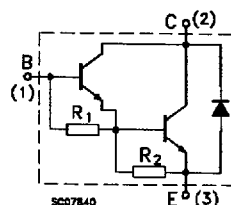
The BDW91 is a silicon epitaxial-base NPN transistors in monolithic Darlington configuration mounted in Jedec TO-39 metal case, intended for use in linear and switching applications.

The complementary PNP types is BDW92.

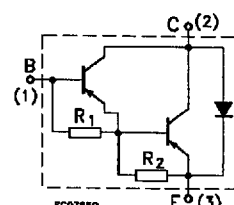


TO-39

INTERNAL SCHEMATIC DIAGRAM



R_1 Typ. = 10 K Ω



R_2 Typ. = 150 Ω

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		NPN	BDW91	
		PNP	BDW92	
V_{CBO}	Collector-Base Voltage ($I_E = 0$)		180	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)		180	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)		6	V
I_C	Collector Current		4	A
I_B	Base Current		100	mA
P_{tot}	Total Dissipation at $T_{case} \leq 25^\circ C$ $T_{amb} \leq 25^\circ C$		10	W
			1	W
T_{stg}	Storage Temperature		-65 to 200	$^\circ C$
T_j	Max. Operating Junction Temperature		200	$^\circ C$

For PNP types voltage and current values are negative.

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	17.5	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-amb	Max	175	$^{\circ}C/W$

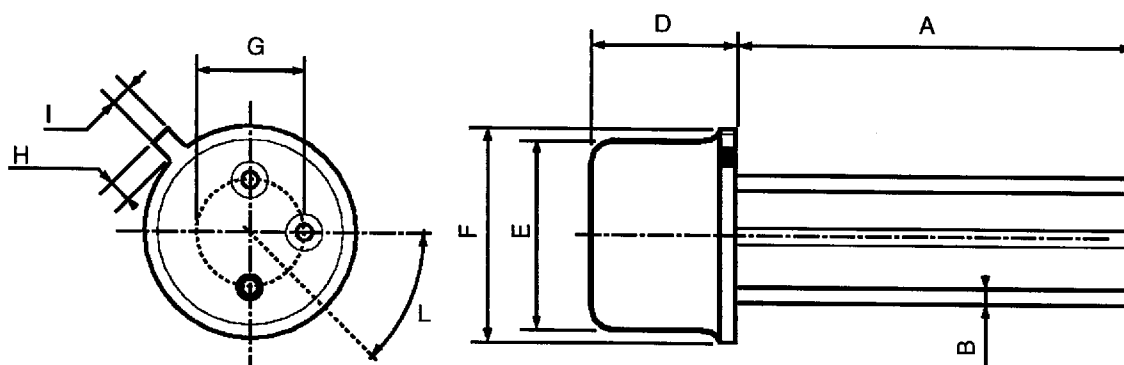
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 180\text{ V}$			50	μA
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	$V_{CE} = 90\text{ V}$			50	μA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 6\text{ V}$	0.4		2	mA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage	$I_C = 50\text{ mA}$	180			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 2\text{ A}$ $I_B = 4\text{ mA}$			2	V
V_{BE}^*	Base-Emitter Voltage	$I_C = 2\text{ A}$ $V_{CE} = 2\text{ V}$			2.5	V
h_{FE}^*	DC Current Gain	$I_C = 2\text{ A}$ $V_{CE} = 5\text{ V}$ $I_C = 50\text{ mA}$ $V_{CE} = 5\text{ V}$	1000 150	3000 300		
V_F^*	Parallel Diode Forward Voltage	$I_F = 2\text{ A}$			2.5	V
h_{fe}	Small Signal Current Gain	$I_C = 0.5\text{ A}$ $V_{CE} = 2\text{ V}$ $f = 1\text{ MHz}$		20		MHz

* Pulsed: Pulse duration = 300 μs , duty cycle 1.5 %
For PNP types voltage and current values are negative.

TO39 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45° (typ.)					



P008B