

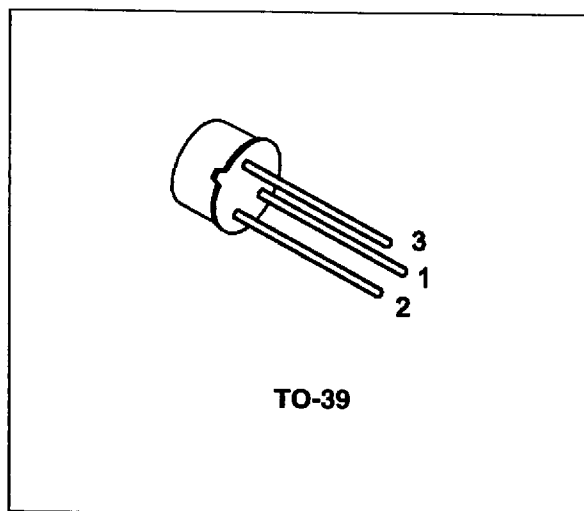
COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

■ SGS-THOMSON PREFERRED SALESTYPES

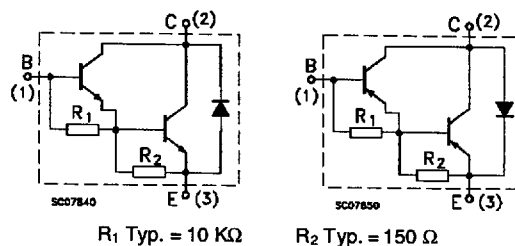
DESCRIPTION

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.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
		NPN	BDW91	
		PNP	BDW92	
V _{CB0}	Collector-Base Voltage (I _E = 0)		180	V
V _{CEO}	Collector-Emitter Voltage (I _B = 0)		180	V
V _{EB0}	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 °C		10	W
	T _{amb} $\leq$ 25 °C		1	W
T _{stg}	Storage Temperature		-65 to 200	°C
T _j	Max. Operating Junction Temperature		200	°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	$^{\circ}C/W$

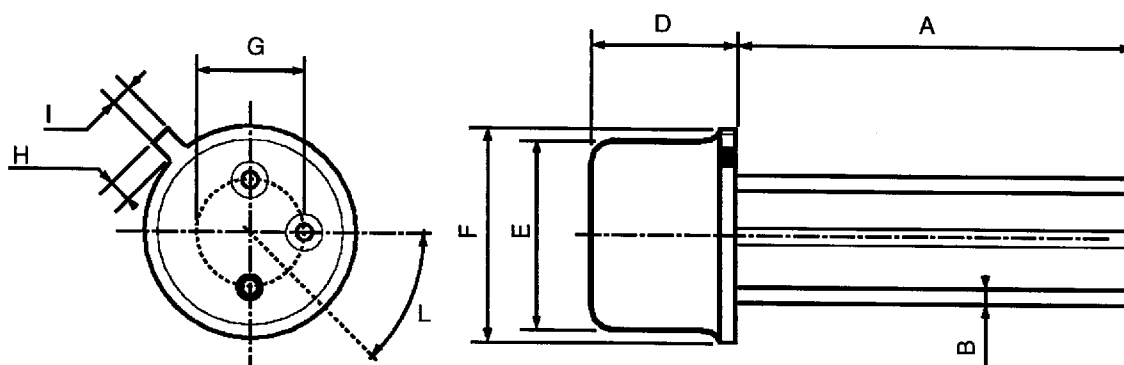
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

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