SGS-THOMSON MICROELECTRONICS

BDW91
BDW92

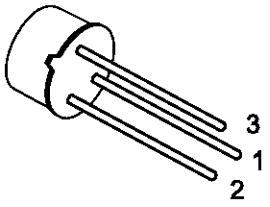
COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTORS

- SGS-THOMSON PREFERRED SALESTYPES

DESCRIPTION

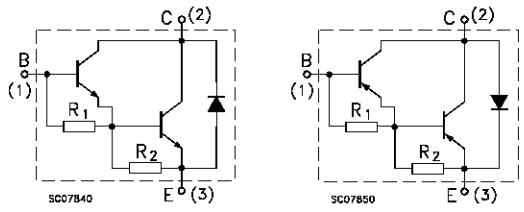
The BDW91 is a silicon epitaxial-base NPN transistors in monolithic Darlington configuration mounted in Jedec TO-39 metal case, intented for use in linear and switching applications.

The complementary PNP types is BDW92.



TO-39

INTERNAL SCHEMATIC DIAGRAM



R_1 Typ. = 10 KΩ 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 $T_{case} \leq 25\ ^oC$ $T_{amb} \leq 25\ ^oC$		10 1	W W
T_{stg}	Storage Temperature		-65 to 200	^oC
T_j	Max. Operating Junction Temperature		200	^oC

For PNP types voltage and current values are negative.

THERMAL DATA

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

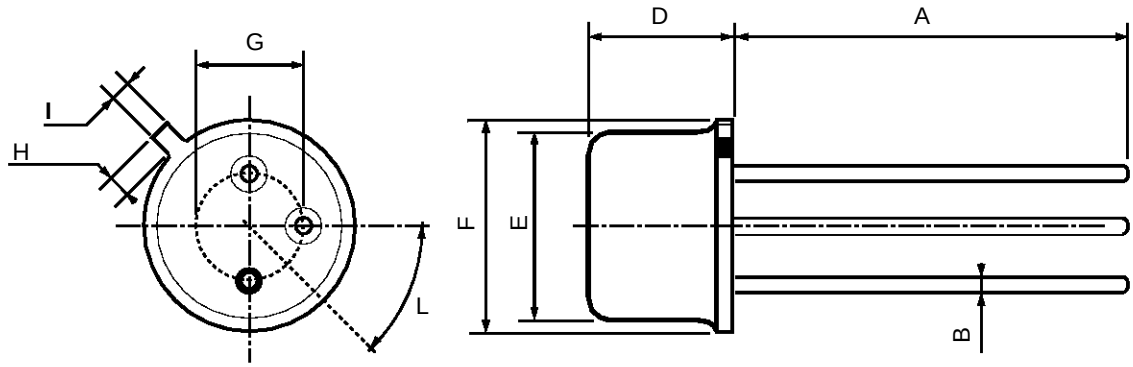
ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

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	IC = 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^{o} (typ.)					



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