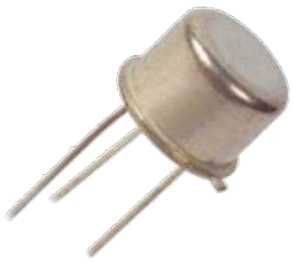
BSS52

NPN Darlington Transistor - 1

KEY FEATURES

- HIGH CURRENT
- LOW VOLTAGE
- INTEGRATED DIODE AND RESISTOR
- SECOND SOURCE FOR PHILIPS
- DESIGNED FOR INDUSTRIAL HIGH GAIN AMPLIFIERS

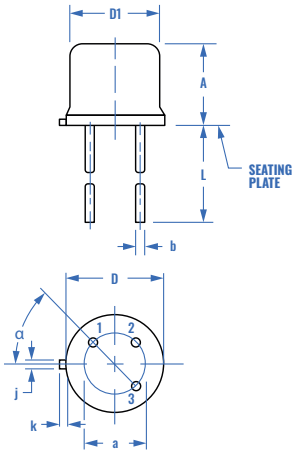


Part Number	Package	Collector/Emitter Voltage	Collector/Base Voltage	Collector Current
BSS52	TO-39	80V	90V	1A

ABSOLUTE MAXIMUM RATINGS

Collector-Base Voltage V_{CBO}	90V	Base Current I_B	100mA
Collector- Emitter Voltage V_{CES}	80V	Power Dissipation P_{tot}	0.8W @ T_{amb} ≤25°C | 5.0W @ T_{case} ≤25°C
Emitter-Base Voltage V_{EBO}	5V	Storage Temperature T_{stg}	-65 to +150°C
Collector Current I_C	1A	Junction Temperature T_j	200°C
Peak Collector Current I_{CM}	2A	Operating Ambient Temperature T_{amb}	-65 to +150°C

TO-39 PACKAGE OUTLINE & PIN CONNECTIONS



Ltr	Dimensions			
	Inches		mm	
	Min.	Max.	Min.	Max.
A	0.245	0.260	6.22	6.60
a	0.200		5.08	
b	0.016	0.019	0.41	0.48
D	0.357	0.370	9.08	9.39
D1	0.322	0.328	8.18	8.33
j	0.029	0.033	0.75	0.85
k	0.029	0.033	0.75	0.95
L	0.500	0.559	12.7	14.2
w	0.008		0.2	
α	45°			

ELECTRICAL SPECIFICATIONS

Typical T_j = 25°C unless otherwise noted

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Collector Cut-off Current	V_{BE} = 0V, V_{CE} = 80V	I_{CES}			50	nA
Emitter Cut-off Current	I_C = 0A, V_{EB} = 4V	I_{EBO}			50	nA
DC Current Gain	V_{CE} = 10 V, I_C = 150 mA V_{CE} = 10 V, I_C = 500 mA	h_{FE}	1000 2000			
Collector-Emitter Saturation Voltage	I_C = 500mA, I_B = 0.5mA I_C = 500mA, I_B = 0.5mA, T_j = 150°C I_C = 1A, I_B = 4mA I_C = 1A, I_B = 4mA, T_j = 150°C	$V_{CE(sat)}$			1.3 1.3 1.6 1.6	V
Base-Emitter Saturation Voltage	I_C = 500mA, I_B = 0.5mA I_C = 1A, I_B = 4mA	$V_{BE(sat)}$			1.9 2.2	V
Base-Emitter On-state Voltage	I_C = 150mA, V_{CE} = 10V I_C = 500mA, V_{CE} = 10V	$V_{BE(on)}$	1.2 1.3		1.65 1.75	V
Transition Frequency	I_C = 500mA, V_{CE} = 10V, f = 100MHz	f_T	150	200		MHz
Turn-on Time (between 10% and 90% levels)	$I_{C(on)}$ = 500mA, $I_{B(on)}$ = 0.5mA, $I_{B(off)}$ = -0.5mA $I_{C(on)}$ = 1A, $I_{B(on)}$ = 1mA, $I_{B(off)}$ = -1mA	t_{on}		2 1		µs
Turn-off Time (between 10% and 90% levels)	$I_{C(on)}$ = 500mA, $I_{B(on)}$ = 0.5mA, $I_{B(off)}$ = -0.5mA $I_{C(on)}$ = 1A, $I_{B(on)}$ = 1mA, $I_{B(off)}$ = -1mA	t_{off}		5 5		µs

ELECTRICAL SPECIFICATIONS

Typical T_j = 25°C unless otherwise noted

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance from Junction to Ambient	Free air	$R_{th\ j\text{-}a}$		220		K/W
Thermal Resistance from Junction to Case		$R_{th\ j\text{-}c}$		35		K/W

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