

NPN BSS50A-51A-52A

SILICON PLANAR EPITAXIAL TRANSISTORS

They are NPN transistors mounted in TO-39 metal package.
They are designed for use in industrial switching applications e.g. print hammer, solenoid, relay and lamp driving.

PNP complements are the BSS60A – 61A – 62A .

Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit	
V_{CBO}	Collector-Base Voltage	BSS50A	60	V	
		BSS51A	80		
		BSS52A	90		
V_{CER}	Collector-Emitter Voltage $V_{BE} = 0$	BSS50A	45	V	
		BSS51A	60		
		BSS52A	80		
V_{EBO}	Emitter-Base Voltage	BSS50A	5	V	
		BSS51A			
		BSS52A			
I_C	Collector Current	I_C	BSS50A	1	A
			BSS51A		
			BSS52A		
		I_{CM}	BSS50A	2	
			BSS51A		
			BSS52A		
I_B	Base Current	BSS50A	0.1	A	
		BSS51A			
		BSS52A			
P_{tot}		@ $T_{case} = 25^\circ$	5	Watts	
		@ $T_{amb} = 25^\circ$	0.8		
T_J	Junction Temperature		200	$^\circ C$	
T_{Stg}	Storage Temperature range		-65 to +150	$^\circ C$	

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-c}	Thermal Resistance, Junction-case	35	K/ W
$R_{thJ-amb}$	Thermal Resistance, Junction-ambient	220	K/ W

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ELECTRICAL CHARACTERISTICS

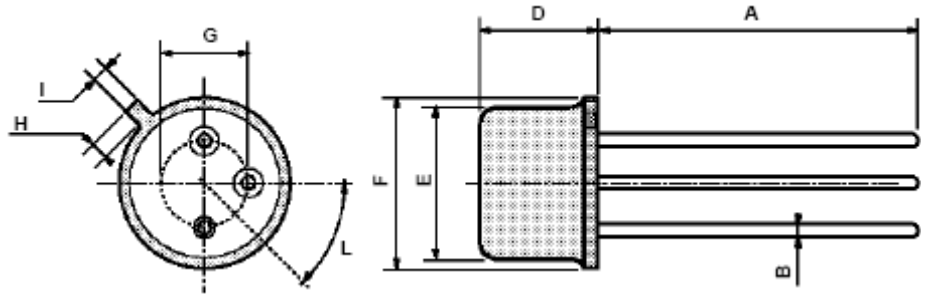
TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
I_{CBO}	Collector Cutoff Current	$I_E = 0 ; V_{CB} = 45V$	BSS50A	-	-	50	nA
		$I_E = 0 ; V_{CB} = 60V$	BSS51A				
		$I_E = 0 ; V_{CB} = 80V$	BSS52A				
I_{EBO}	Emitter Cutoff Current	$I_C = 0 ; V_{EB} = 4 V$	BSS50A	-	-	700	μA
			BSS51A				
			BSS52A				
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage	$I_C = 500 \text{ mA} , I_B = 0.5 \text{ mA}$		-	-	1.3	V
		$I_C = 500 \text{ mA} , I_B = 0.5 \text{ mA} , T_j = 200^\circ C$		-	-	1.3	
		$I_C = 1 \text{ A} , I_B = 1 \text{ mA}$	BSS51A	-	-	1.6	
		$I_C = 1 \text{ A} , I_B = 1 \text{ mA} , T_j = 200^\circ C$		-	-	2.3	
		$I_C = 1 \text{ A} , I_B = 4 \text{ mA}$	BSS50A	-	-	1.6	
		$I_C = 1 \text{ A} , I_B = 4 \text{ mA} , T_j = 200^\circ C$	BSS52A	-	-	1.6	
$V_{BE(SAT)}$	Base-Emitter saturation Voltage	$I_C = 500 \text{ mA} , I_B = 0.5 \text{ mA}$		-	-	1.9	
		$I_C = 1 \text{ A} , I_B = 1 \text{ mA}$	BSS51A	-	-	2.2	
		$I_C = 1 \text{ A} , I_B = 4 \text{ mA}$	BSS50A BSS52A	-	-	2.2	
h_{FE}	DC Current Gain	$I_C = 150 \text{ mA} , V_{CE} = 10 \text{ V}$	BSS50A	800	-	-	-
			BSS51A				
			BSS52A				
		$I_C = 500 \text{ mA} , V_{CE} = 10 \text{ V}$	BSS50A	2000	-	-	
			BSS51A				
			BSS52A				
h_{fe}	Small Signal Current Gain	$I_C = 500 \text{ mA} , V_{CE} = 5 \text{ V}$ $f = 35 \text{ MHz}$	BSS50A	-	10	-	-
			BSS51A				
			BSS52A				
t_{on}	Switching times	$I_{Con} = 500 \text{ mA}$ $I_{B1} = -I_{B2} = 0.5 \text{ mA}$		-	0.4	-	μs
t_{off}				-	1.5	-	
t_{on}	Switching times	$I_{Con} = 1 \text{ mA}$ $I_{B1} = -I_{B2} = 1 \text{ mA}$		-	0.4	-	μs
t_{off}				-	1.5	-	

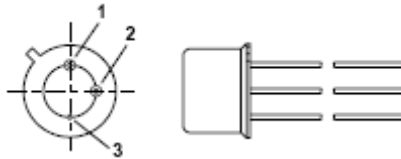
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MECHANICAL DATA CASE TO-39

DIMENSIONS (mm)			
	min	typ	max
A	12.7	-	-
B	-	-	0.49
D	-	-	6.6
E	-	-	8.5
F	-	-	9.4
G	5.08	-	-
H	-	-	1.2
I	-	-	0.9
L	45°	-	-



Pin 1 :	Emitter
Pin 2 :	Base
Case :	Collector



Information furnished is believed to be accurate and reliable. However, CS assumes no responsibility for the consequences of use of such information nor for errors that could appear.

Data are subject to change without notice.