

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		5	V
I_C	Collector Current	I_C	1	A
		I_{CM}	2	
I_B	Base Current		0.1	A
P_{tot}	Total Power Dissipation	@ $T_{case} = 25^\circ$	5	W
		@ $T_{amb} = 25^\circ$	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

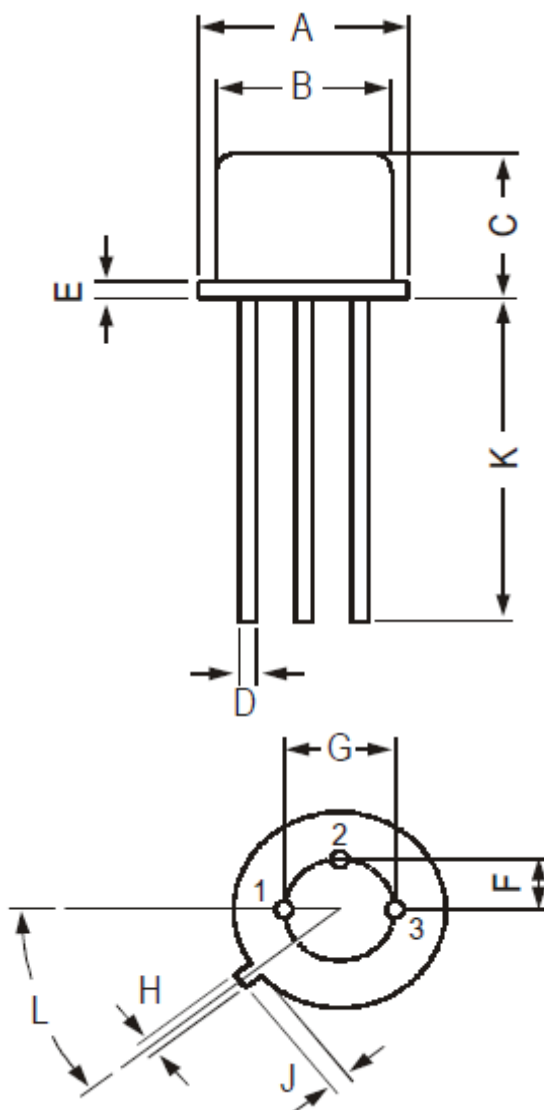
Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit	
I _{CBO}	Collector Cutoff Current	I _E = 0 ;V _{CB} = 45V	BSS50A	-	-	50	nA	
		I _E = 0 ;V _{CB} = 60V	BSS51A					
		I _E = 0 ;V _{CB} = 80V	BSS52A					
I _{EB0}	Emitter Cutoff Current	I _C = 0 ;V _{EB} =4 V	BSS50A	-	-	700	μA	
			BSS51A					
			BSS52A					
V _{CE(SAT)}	Collector-Emitter saturation Voltage	I _C =500 mA , I _B =0.5 mA		-	-	1.3	V	
		I _C =500 mA , I _B =0.5 mA T _j =200℃		-	-	1.3		
		I _C =1 A, I _B =1 mA	BSS51A	-	-	1.6		
		I _C =1 A, I _B =1 mA T _j =200℃		-	-	2.3		
		I _C =1 A I _B =4 mA	BSS50A / BSS52A	-	-	1.6		
		I _C =1 A I _B =4 mA T _j =200℃		-	-	1.6		
V _{BE(SAT)}	Base-Emitter saturation Voltage	I _C =500 mA , I _B =0.5 mA		-	-	1.9		
		I _C =1 A I _B =1 mA	BSS51A	-	-	2.2		
		I _C =1 A I _B =4 mA	BSS50A / BSS52A	-	-	2.2		
h _{FE}	DC Current Gain	I _C =150 mA V _{CE} =10 V	BSS50A	800	-	-	-	
			BSS51A					
			BSS52A					
		I _C =500 mA V _{CE} =10 V	BSS50A	2000	-	-		
			BSS51A					
			BSS52A					
h _{fe}	Small Signal Current Gain	I _C =500 mA V _{CE} =5 V f = 35 MHz	BSS50A	-	10	-	-	
			BSS51A					
			BSS52A					
t _{on}	Switching times	I _{Con} =500 mA I _{B1} =-I _{B2} =0.5 mA		-	0.4	-	μs	
t _{off}				-	1.5	-		
t _{on}	Switching times	I _{Con} =1 mA I _{B1} =-I _{B2} =1 mA		-	0.4	-	μs	
t _{off}				-	1.5	-		

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MECHANICAL DATA CASE TO-39

DIMENSIONS (mm)		
	min	max
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	-	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	-
L	42°	48°

Pin 1 :	Emitter
Pin 2 :	Base
Pin 3 :	Collector
Case :	Collector



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