

## NPN BSS60A-61A-62A

### SILICON PLANAR EPITAXIAL TRANSISTORS

They are PNP 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.

NPN complements are the BSS50A – 51A – 52A .

Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit	
$V_{CBO}$	Collector-Base Voltage	BSS60A	60	V	
		BSS61A	80		
		BSS62A	90		
$V_{CES}$	Collector-Emitter Voltage $V_{BE} = 0$	BSS60A	45	V	
		BSS61A	60		
		BSS62A	80		
$V_{EBO}$	Emitter-Base Voltage	BSS60A	5	V	
		BSS61A			
		BSS62A			
$I_C$	Collector Current	$I_C$	BSS60A	1	A
			BSS61A		
			BSS62A		
		$I_{CM}$	BSS60A	2	
			BSS61A		
			BSS62A		
$I_B$	Base Current	BSS60A	0.1	A	
		BSS61A			
		BSS62A			
$P_{tot}$		@ $T_{case} = 25^\circ$	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

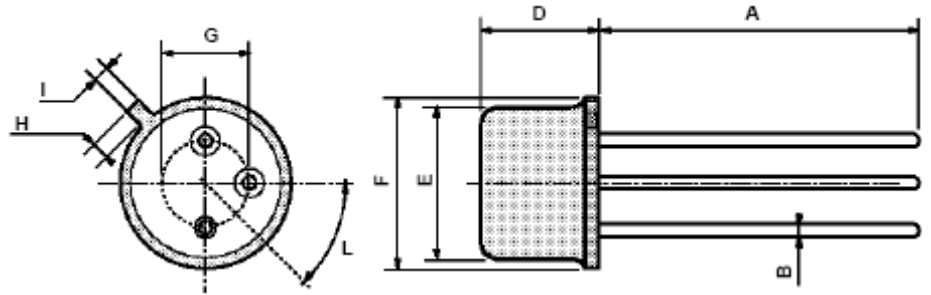
TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
$-I_{CBO}$	Collector Cutoff Current	$I_E = 0 ; -V_{CB} = 45V$	<b>BSS60A</b>	-	-	50	nA
		$I_E = 0 ; -V_{CB} = 60V$	<b>BSS61A</b>				
		$I_E = 0 ; -V_{CB} = 80V$	<b>BSS62A</b>				
$-I_{EBO}$	Emitter Cutoff Current	$I_C = 0 ; -V_{EB} = 4 V$	<b>BSS60A</b>	-	-	700	$\mu A$
			<b>BSS61A</b>				
			<b>BSS62A</b>				
$-V_{CE(SAT)}$	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	
		$-I_C = 1 \text{ A} , -I_B = 1 \text{ mA}$	<b>BSS61A</b>	-	-	1.6	
		$-I_C = 1 \text{ A} , -I_B = 1 \text{ mA} , T_j = 200^\circ C$		-	-	1.6	
		$-I_C = 1 \text{ A} , -I_B = 4 \text{ mA}$	<b>BSS60A</b>	-	-	1.6	
		$-I_C = 1 \text{ A} , -I_B = 4 \text{ mA} , T_j = 200^\circ C$	<b>BSS62A</b>	-	-	1.6	
$-V_{BE(SAT)}$	Base-Emitter saturation Voltage	$-I_C = 500 \text{ mA} , -I_B = 0.5 \text{ mA}$		-	-	1.9	
		$-I_C = 1 \text{ A} , -I_B = 1 \text{ mA}$	<b>BSS61A</b>	-	-	2.2	
		$-I_C = 1 \text{ A} , -I_B = 4 \text{ mA}$	<b>BSS60A</b> <b>BSS62A</b>	-	-	2.2	
$h_{FE}$	DC Current Gain	$-I_C = 150 \text{ mA} , -V_{CE} = 10 \text{ V}$	<b>BSS60A</b>	800	-	-	-
			<b>BSS61A</b>				
			<b>BSS62A</b>				
		$-I_C = 500 \text{ mA} , -V_{CE} = 10 \text{ V}$	<b>BSS60A</b>	2000	-	-	
			<b>BSS61A</b>				
			<b>BSS62A</b>				
$h_{fe}$	Small Signal Current Gain	$-I_C = 500 \text{ mA} , -V_{CE} = 5 \text{ V}$ $f = 35 \text{ MHz}$	<b>BSS60A</b>	-	10	-	-
			<b>BSS61A</b>				
			<b>BSS62A</b>				
$t_{on}$	Switching times	$-I_{Con} = 500 \text{ mA}$ $-I_{B1} = I_{B2} = 0.5 \text{ mA}$		-	0.4	-	$\mu s$
$t_{off}$				-	1.5	-	
$t_{on}$	Switching times	$-I_{Con} = 1 \text{ mA}$ $-I_{B1} = I_{B2} = 1 \text{ mA}$		-	0.4	-	$\mu s$
$t_{off}$				-	1.5	-	

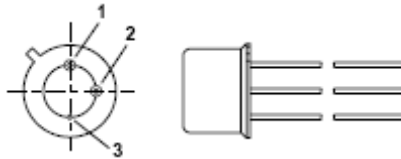
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### MECHANICAL DATA CASE TO-39

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.