

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

#### ELECTRICAL CHARACTERISTICS

## NPN BSS60A-61A-62A

TC=25°C unless otherwise noted

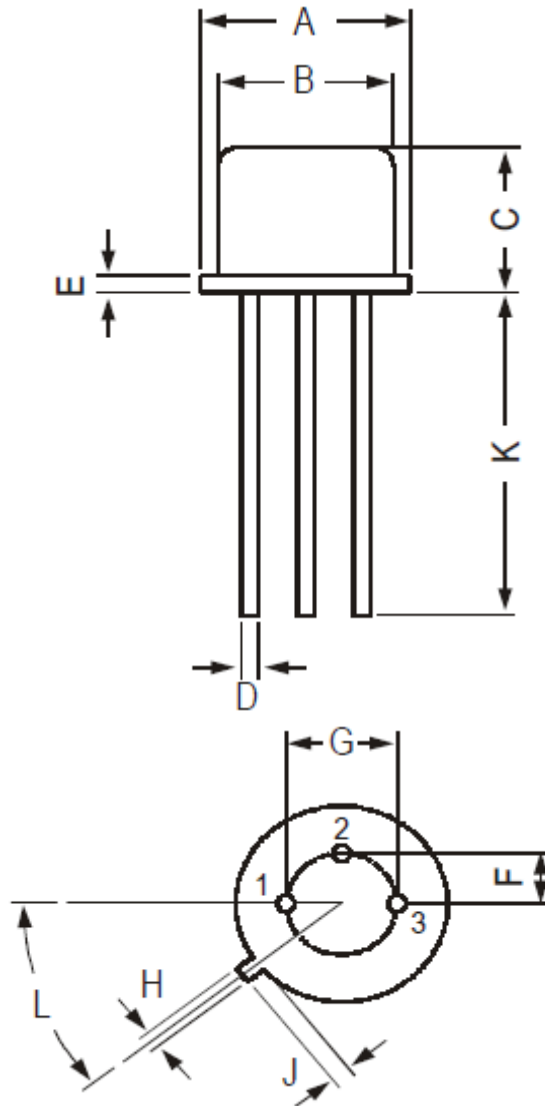
Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
$-I_{CBO}$	Collector Cutoff Current	$I_E = 0, -V_{CB} = 45V$	BSS60A	-	-	50	nA
		$I_E = 0, -V_{CB} = 60V$	BSS61A				
		$I_E = 0, -V_{CB} = 80V$	BSS62A				
$-I_{EBO}$	Emitter Cutoff Current	$I_C = 0, -V_{EB} = 4 V$	BSS60A	-	-	700	$\mu A$
			BSS61A				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

### MECHANICAL DATA CASE TO-39

## NPN BSS60A-61A-62A

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



Revised september 2012

Information furnished is believed to be accurate and reliable. However, Comset Semiconductors assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. Data are subject to change without notice. Comset Semiconductors makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Comset Semiconductors assume any liability arising out of the application or use of any product and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Comset Semiconductors' products are not authorized for use as critical components in life support devices or systems.