

isc Silicon NPN Power Transistor

BD905

DESCRIPTION

- DC Current Gain -
: $h_{FE} = 40(\text{Min.}) @ I_C = 0.5A$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 45V(\text{Min})$
- Complement to Type BD906
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

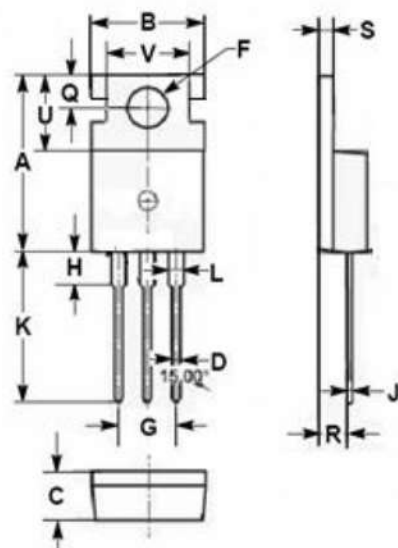
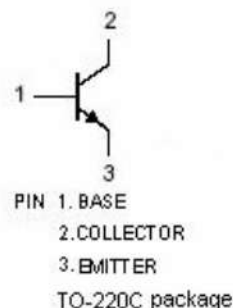
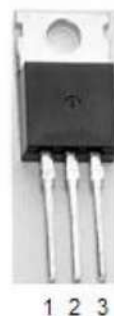
- Designed for use in general purpose power amplifier and switching applications.

ABSOLUTE MAXIMUM RATINGS($T_a = 25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	45	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	15	A
I_{CM}	Collector Current-Peak	20	A
I_B	Base Current	5	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	90	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.38	$^\circ\text{C/W}$



DIM	mm	
	MIN	MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CE(sus)}$	Collector-Emitter Sustaining Voltage	$I_C=50\text{mA}; I_B=0$	45		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=5\text{A}; I_B=0.5\text{A}$		1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=2.5\text{A}$		3.0	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=2.5\text{A}$		2.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C=5\text{A}; V_{CE}=4\text{V}$		1.5	V
I_{CBO}	Collector Cutoff Current	$V_{CB}=45\text{V}; I_E=0$		0.5	mA
I_{CEO}	Collector Cutoff Current	$V_{CE}=30\text{V}; I_B=0$		1.0	mA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=5\text{V}; I_C=0$		1.0	mA
h_{FE-1}	DC Current Gain	$I_C=0.5\text{A}; V_{CE}=4\text{V}$	40	250	
h_{FE-2}	DC Current Gain	$I_C=5\text{A}; V_{CE}=4\text{V}$	15	150	
h_{FE-3}	DC Current Gain	$I_C=10\text{A}; V_{CE}=4\text{V}$	5		
f_T	Current-Gain—Bandwidth Product	$I_C=0.5\text{A}; V_{CE}=4\text{V}; f_{test}=1.0\text{MHz}$	3.0		MHz

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