

# isc Silicon PNP Power Transistor

# BDV92/94/96

## DESCRIPTION

- Collector Current  $-I_C = -10A$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = -45V(\text{Min})$ - BDV92;  $-60V(\text{Min})$ - BDV94  
 $-80V(\text{Min})$ - BDV96
- Complement to Type BDV91/93/95
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

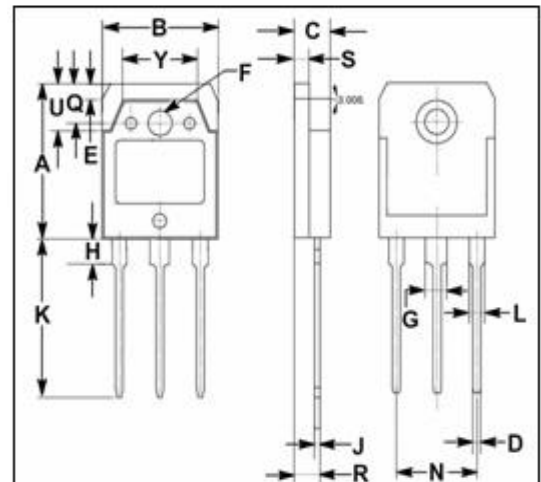
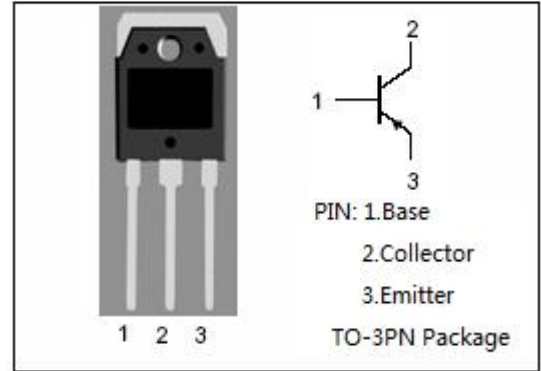
- Designed for use in audio output stages and general amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT	
$V_{CER}$	Collector-Emitter Voltage	BDV92	-60	V
		BDV94	-80	
		BDV96	-100	
$V_{CEO}$	Collector-Emitter Voltage	BDV92	-60	V
		BDV94	-80	
		BDV96	-100	
$V_{EBO}$	Emitter-Base Voltage	-7	V	
$I_C$	Collector Current-Continuous	-10	A	
$I_{CM}$	Collector Current-Peak	-20	A	
$I_B$	Base Current	-7	A	
$I_E$	Emitter Current	-14	A	
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	100	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	1.25	$^\circ\text{C/W}$



DIM	mm	
	MIN	MAX
A	19.60	20.30
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.20
H	3.20	3.40
J	0.595	0.605
K	19.80	20.70
L	1.90	2.20
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.100
U	5.90	6.20
Y	9.90	10.10

**isc Silicon NPN Power Transistor**
**BDV92/94/96**
**ELECTRICAL CHARACTERISTICS**

 T<sub>C</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
V <sub>CE0(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = -30mA ; I <sub>B</sub> =0	BDV92	-60			V
			BDV94	-80			
			BDV96	-100			
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -4A; I <sub>B</sub> = -0.4A			-1.0	V	
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -10A; I <sub>B</sub> = -3.3A			-3.0	V	
V <sub>BE(sat)</sub>	Base -Emitter Saturation Voltage	I <sub>C</sub> = -4A; I <sub>B</sub> = -0.4A			-1.6	V	
V <sub>BE(on)</sub>	Base-Emitter On Voltage	I <sub>C</sub> = -4A ; V <sub>CE</sub> = -4V			-1.6	V	
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = V <sub>CE0max</sub> ; I <sub>B</sub> = 0			-0.2	mA	
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = V <sub>CB0max</sub> ; I <sub>E</sub> = 0 V <sub>CB</sub> = 1/2V <sub>CB0max</sub> ; I <sub>E</sub> = 0; T <sub>J</sub> = 150°C			-0.1 -1.0	mA	
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = -7V; I <sub>C</sub> =0			-0.1	mA	
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = -4A ; V <sub>CE</sub> = -4V	20				
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = -10A ; V <sub>CE</sub> = -4V	5				
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = -0.5A ; V <sub>CE</sub> = -10V	4			MHz	

**Switching times**

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = -4A; I <sub>B1</sub> = -I <sub>B2</sub> = -0.4A; V <sub>CC</sub> = -30V		0.3		μs
t <sub>off</sub>	Turn-off Time			0.7		μs
t <sub>f</sub>	Fall Time			0.3		μs

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