

isc Silicon NPN Power Transistor

BDV91/93/95

DESCRIPTION

- Collector Current $-I_C=10A$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)}=45V(\text{Min})$ - BDV91; $60V(\text{Min})$ - BDV93
80V(Min)- BDV95
- Complement to Type BDV92/94/96

APPLICATIONS

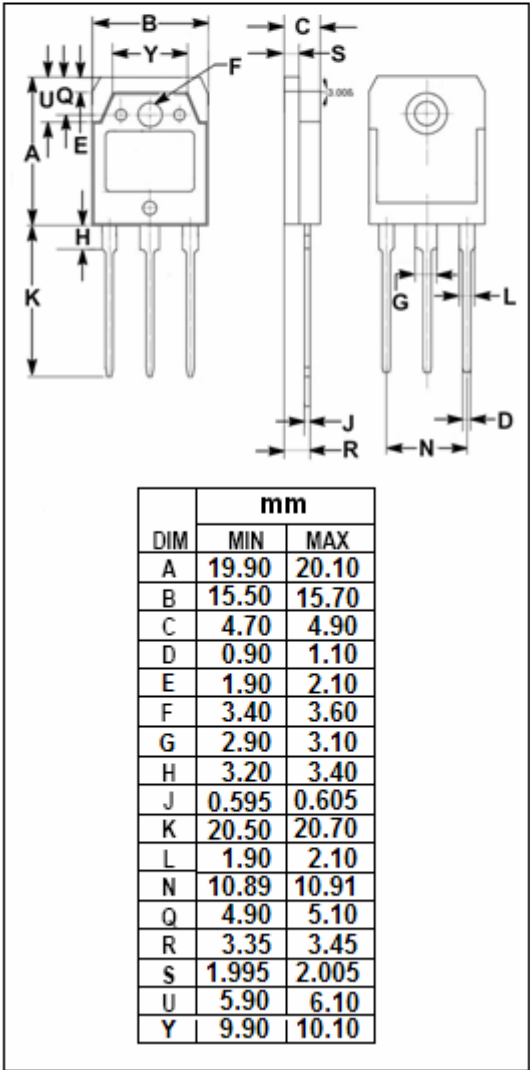
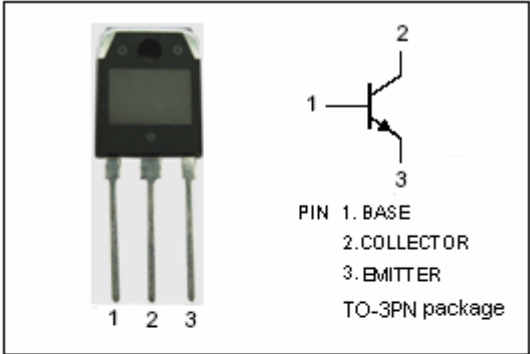
- Designed for use in audio output stages and general amplifier and switching applications

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

SYMBOL	PARAMETER		VALUE	UNIT
V_{CER}	Collector-Emitter Voltage	BDV91	60	V
		BDV93	80	
		BDV95	100	
V_{CEO}	Collector-Emitter Voltage	BDV91	60	V
		BDV93	80	
		BDV95	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 @ $T_C=25^{\circ}C$		100	W
T_J	Junction Temperature		150	$^{\circ}C$
T_{stg}	Storage Temperature Range		-65~150	$^{\circ}C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.25	$^{\circ}C/W$



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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEQ(SUS)}$	Collector-Emitter Sustaining Voltage	BDV91	$I_C=100\text{mA}; I_B=0$	60			V
		BDV93		80			
		BDV95		100			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		$I_C=4\text{A}; I_B=0.4\text{A}$			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		$I_C=10\text{A}; I_B=3.3\text{A}$			3.0	V
$V_{BE(sat)}$	Base -Emitter Saturation Voltage		$I_C=4\text{A}; I_B=0.4\text{A}$			1.6	V
$V_{BE(on)}$	Base-Emitter On Voltage		$I_C=4\text{A}; V_{CE}=4\text{V}$			1.6	V
I_{CEO}	Collector Cutoff Current		$V_{CE}=V_{CEOmax}; I_B=0$			0.2	mA
I_{CBO}	Collector Cutoff Current		$V_{CB}=V_{CB0max}; I_E=0$ $V_{CB}=1/2 V_{CB0max}; I_E=0; T_J=150^{\circ}\text{C}$			0.1 1.0	mA
I_{EBO}	Emitter Cutoff Current		$V_{EB}=7\text{V}; I_C=0$			0.1	mA
h_{FE-1}	DC Current Gain		$I_C=4\text{A}; V_{CE}=4\text{V}$	20			
h_{FE-2}	DC Current Gain		$I_C=10\text{A}; V_{CE}=4\text{V}$	5			
f_T	Current-Gain—Bandwidth Product		$I_C=0.5\text{A}; V_{CE}=10\text{V}$	3.0			MHz

Switching times

t_{on}	Turn-on Time	$I_C=4\text{A}; I_{B1}=-I_{B2}=0.4\text{A};$ $V_{CC}=30\text{V}$		0.5		μS
t_{off}	Turn-off Time			2.0		μS
t_f	Fall Time			0.7		μS