

isc Silicon NPN Power Transistor

BDT91F/93F/95F

DESCRIPTION

- DC Current Gain- $h_{FE} = 20 \sim 200 @ I_C = 4A$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 60V(\text{Min})$ - BDT91F; $80V(\text{Min})$ - BDT93F;
100V(Min)- BDT95F
- Complement to Type BDT92F/94F/96F
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

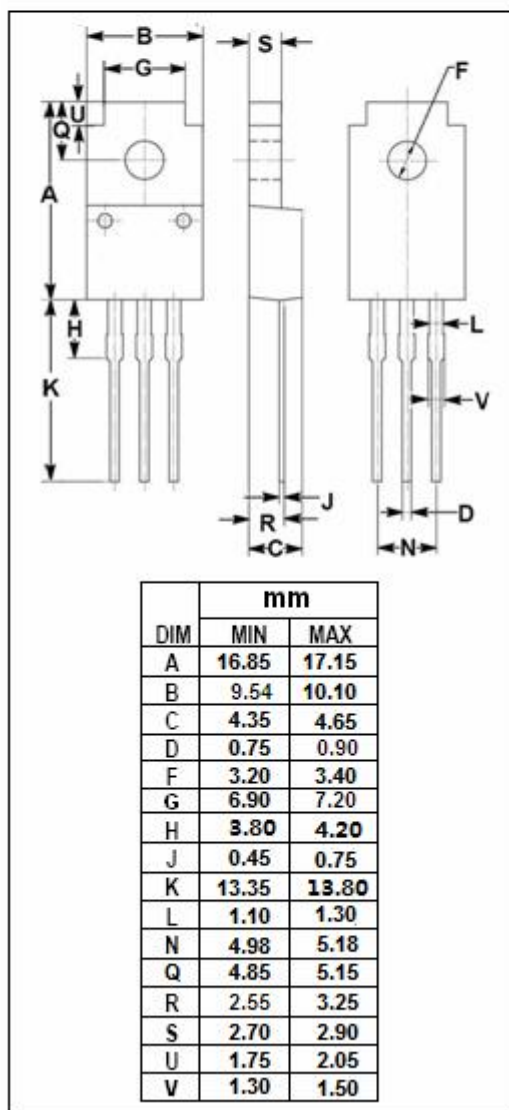
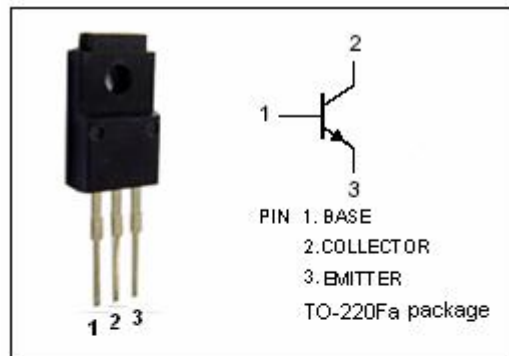
- Designed for use in audio output stages and general amplifier and switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BDT91F 60	V
		BDT93F 80	
		BDT95F 100	
V_{CEO}	Collector-Emitter Voltage	BDT91F 60	V
		BDT93F 80	
		BDT95F 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-Continuous	4	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	32	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	6.4	$^\circ\text{C/W}$



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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	BDT91F	$I_C= 30mA ; I_B= 0$	60			V
		BDT93F		80			
		BDT95F		100			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		$I_C= 4A; I_B= 0.4A$			1	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		$I_C= 10A; I_B= 3.3A$			3	V
$V_{BE(on)}$	Base-Emitter On Voltage		$I_C= 4A; V_{CE}= 4V$			1.6	V
I_{CBO}	Collector Cutoff Current		$V_{CB}= V_{CB0max}; I_E= 0$ $V_{CB}= 1/2V_{CB0max}; I_E= 0, T_J=150^{\circ}C$			0.1 5	mA
I_{CEO}	Collector Cutoff Current		$V_{CE}= V_{CE0max} V; I_B= 0$			1	mA
I_{EBO}	Emitter Cutoff Current		$V_{EB}= 7V; I_C= 0$			1	mA
h_{FE-1}	DC Current Gain		$I_C= 4A ; V_{CE}= 4V$	20		200	
h_{FE-2}	DC Current Gain		$I_C= 10A ; V_{CE}= 4V$	5			
f_T	Current-Gain—Bandwidth Product		$I_C= 500mA ; V_{CE}= 10V$	4			MHz
Switching times							
t_{on}	Turn-On Time		$I_C= 4A; I_{B1}= -I_{B2}= 0.4A$		0.5	1	μs
t_{off}	Turn-Off Time				2	4	μs

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