

isc Silicon NPN Power Transistor

BD943/945/947

DESCRIPTION

- DC Current Gain-
: $h_{FE} = 85(\text{Min}) @ I_C = 500\text{mA}$
- Complement to Type BD944/946/948

APPLICATIONS

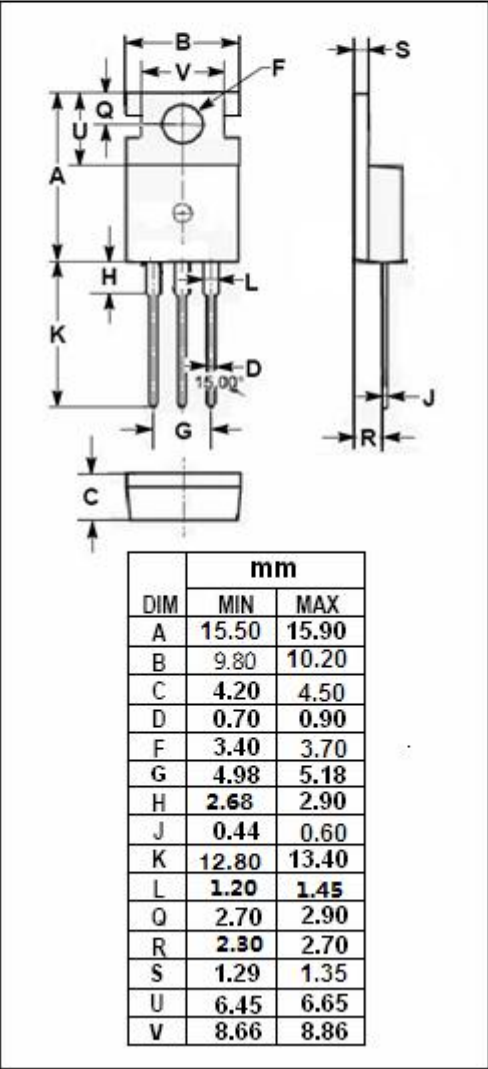
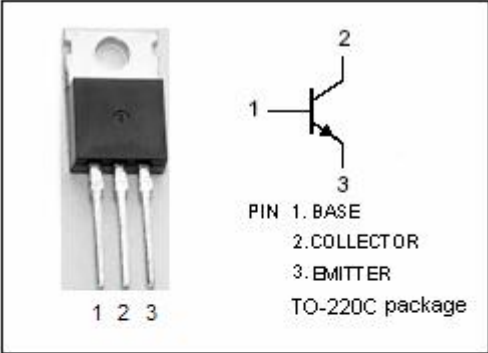
- Designed for use in audio output stages and general purpose amplifier applications.

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

SYMBOL	PARAMETER		VALUE	UNIT
V _{CBO}	Collector-Base Voltage	BD943	22	V
		BD945	32	
		BD947	45	
V _{CEO}	Collector-Emitter Voltage	BD943	22	V
		BD945	32	
		BD947	45	
V _{EBO}	Emitter-Base Voltage		5	V
I _C	Collector Current-Continuous		5	A
I _{CM}	Collector Current-Peak		8	A
I _B	Base Current-Continuous		1	A
P _C	Collector Power Dissipation @ T _C =25 °C		40	W
T _J	Junction Temperature		150	°C
T _{stg}	Storage Temperature Range		-65~150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	3.12	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	70	$^\circ\text{C/W}$



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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	BD943	$I_C = 30\text{mA}; I_B = 0$	22			V
		BD945		32			
		BD947		45			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	BD943/945	$I_C = 2\text{A}; I_B = 0.2\text{A}$			0.5	V
		BD947	$I_C = 3\text{A}; I_B = 0.3\text{A}$			0.7	
$V_{BE(on)}$	Base-Emitter On Voltage	BD943/945	$I_C = 2\text{A}; V_{CE} = 1\text{V}$			1.1	V
		BD947	$I_C = 3\text{A}; V_{CE} = 1\text{V}$			1.3	
I_{CBO}	Collector Cutoff Current		$V_{CB} = V_{CB0max}; I_E = 0$ $V_{CB} = V_{CB0max}; I_E = 0, T_J = 150^{\circ}\text{C}$			0.05 1.0	mA
I_{CEO}	Collector Cutoff Current	BD943	$V_{CE} = 15\text{V}; I_B = 0$			0.1	mA
		BD945	$V_{CE} = 20\text{V}; I_B = 0$				
		BD947	$V_{CE} = 25\text{V}; I_B = 0$				
I_{EBO}	Emitter Cutoff Current		$V_{EB} = 5\text{V}; I_C = 0$			0.2	mA
h_{FE-1}	DC Current Gain		$I_C = 10\text{mA}; V_{CE} = 5\text{V}$	25			
h_{FE-2}	DC Current Gain		$I_C = 500\text{mA}; V_{CE} = 1\text{V}$	85		475	
h_{FE-3}	DC Current Gain	BD943/945	$I_C = 2\text{A}; V_{CE} = 1\text{V}$	50			
		BD947		40			
h_{FE-4}	DC Current Gain-- Only For BD947		$I_C = 3\text{A}; V_{CE} = 1\text{V}$	30			
f_T	Current-Gain—Bandwidth Product		$I_C = 250\text{mA}; V_{CE} = 1\text{V}$	3			MHz