

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

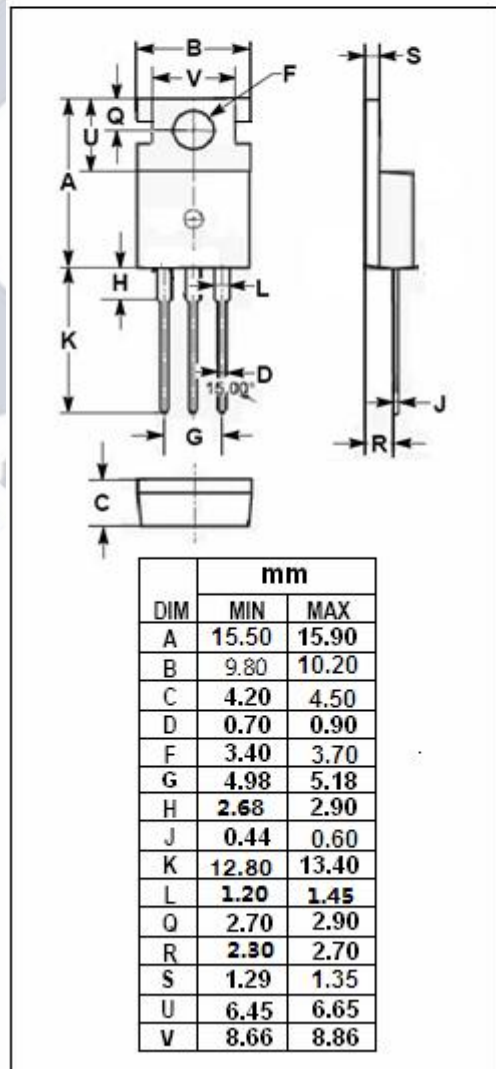
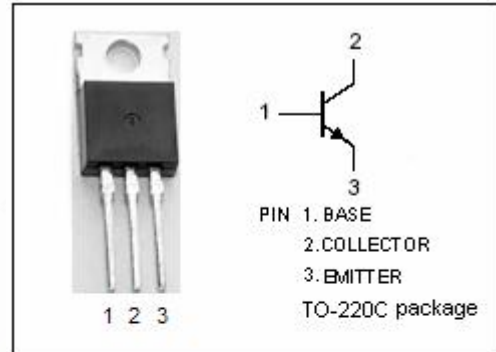
- Designed for use in audio output stages and general purpose amplifier applications.

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 @ $T_C = 25^\circ\text{C}$	40	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	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	$I_C=30\text{mA}; I_B=0$			V
		BD945				
		BD947				
$V_{CE(sat)}$	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	$I_C=2\text{A}; V_{CE}=1\text{V}$			
		BD947				
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