isc Silicon NPN Power Transistor BD933/935/937/939/941

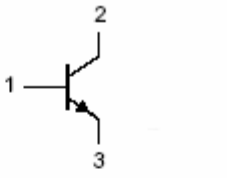
DESCRIPTION

- DC Current Gain-
  : h_{FE}= 40(Min)@ I_C= 150mA
- Complement to Type BD934/936/938/940/942

APPLICATIONS

- Designed for use in output stages of audio and television amplifier circuits where high peak powers can occur.

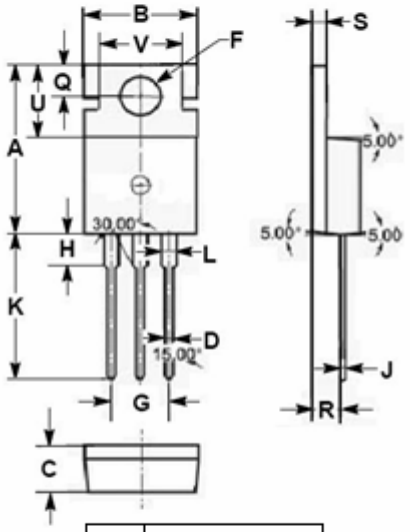




PIN 1. BASE
2. COLLECTOR
3. EMITTER
TO-220C package

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BD933	45	V
		BD935	60	
		BD937	100	
		BD939	120	
		BD941	140	
V_{CEO}	Collector-Emitter Voltage	BD933	45	V
		BD935	60	
		BD937	80	
		BD939	100	
		BD941	120	
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current-Continuous		3	A
I_{CM}	Collector Current-Peak		7	A
I_B	Base Current-Continuous		0.5	A
P_C	Collector Power Dissipation @ T_C=25℃		30	W
T_J	Junction Temperature		150	℃
T_{stg}	Storage Temperature Range		-65~150	℃



DIM	mm MIN	MAX
A	15.70	15.90
B	9.90	10.10
C	4.20	4.40
D	0.70	0.90
F	3.40	3.60
G	4.98	5.18
H	2.70	2.90
J	0.44	0.46
K	13.20	13.40
L	1.10	1.30
Q	2.70	2.90
R	2.50	2.70
S	1.29	1.31
U	6.45	6.65
V	8.66	8.86

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	4.17	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	70	℃/W

isc Silicon NPN Power Transistor BD933/935/937/939/941

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	BD933	I_C= 100mA ; I_B= 0	45			V
		BD935		60			
		BD937		80			
		BD939		100			
		BD941		120			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage		I_C= 1A; I_B= 0.1A			0.6	V
$V_{BE(on)}$	Base-Emitter On Voltage		I_C= 1A; V_{CE}= 2V			1.3	V
I_{CBO}	Collector Cutoff Current		V_{CB}= V_{CBOmax}; I_E= 0 V_{CB}= V_{CBOmax}; I_E= 0,T_J=150℃			0.05 1	mA
I_{CEO}	Collector Cutoff Current		V_{CE}= V_{CEOmax}; I_B= 0			0.1	mA
I_{EBO}	Emitter Cutoff Current		V_{EB}= 5V; I_C= 0			0.2	mA
h_{FE-1}	DC Current Gain		I_C= 150mA ; V_{CE}= 2V	40		250	
h_{FE-2}	DC Current Gain		I_C= 1A ; V_{CE}= 2V	25			
f_T	Current-Gain—Bandwidth Product		I_C= 250mA ; V_{CE}= 10V	3			MHz

Switching Times

t_{on}	Turn-On Time	I_C= 1.0A; I_{B1}= -I_{B2}= 0.1A		0.4	1.0	μs
t_{off}	Turn-Off Time			1.5	3.0	μs