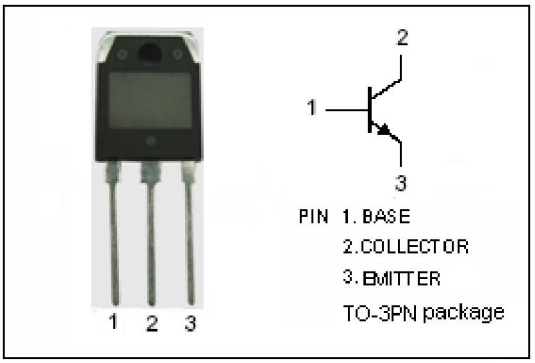
isc Silicon NPN Power Transistor BD245/A/B/C

DESCRIPTION

- Collector Current -I_C= 10A
- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$ = 45V(Min)- BD245; 60V(Min)- BD245A
  80V(Min)- BD245B; 100V(Min)- BD245C
- Complement to Type BD246/A/B/C

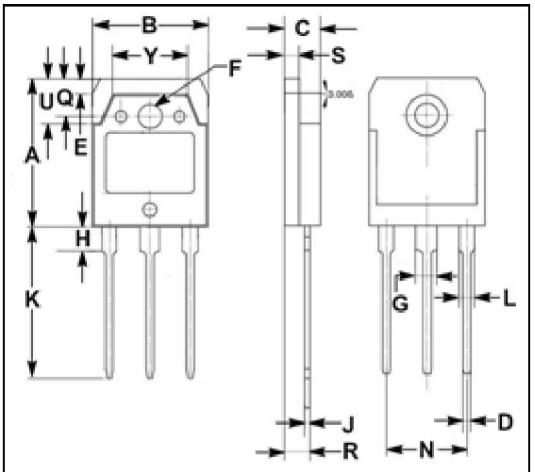
APPLICATIONS

- Designed for use in general purpose power amplifier and switching applications



ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER		VALUE	UNIT
V_{CER}	Collector-Emitter Voltage (R_{BE}= 100Ω)	BD245	55	V
		BD245A	70	
		BD245B	90	
		BD245C	115	
V_{CEO}	Collector-Emitter Voltage	BD245	45	V
		BD245A	60	
		BD245B	80	
		BD245C	100	
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current-Continuous		10	A
I_{CM}	Collector Current-Peak		15	A
I_B	Base Current		3	A
P_C	Collector Power Dissipation @ T_a=25℃		3	W
	Collector Power Dissipation @ T_C=25℃		80	
T_J	Junction Temperature		150	℃
T_{stg}	Storage Temperature Range		-65~150	℃



DIM	mm MIN	MAX
A	19.90	20.10
B	15.50	15.70
C	4.70	4.90
D	0.90	1.10
E	1.90	2.10
F	3.40	3.60
G	2.90	3.10
H	3.20	3.40
J	0.595	0.605
K	20.50	20.70
L	1.90	2.10
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.005
U	5.90	6.10
Y	9.90	10.10

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	1.56	℃/W

isc Silicon NPN Power Transistor BD245/A/B/C

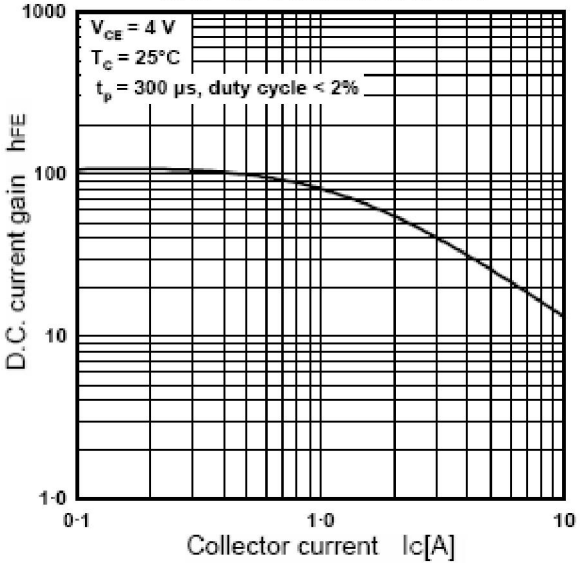
ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

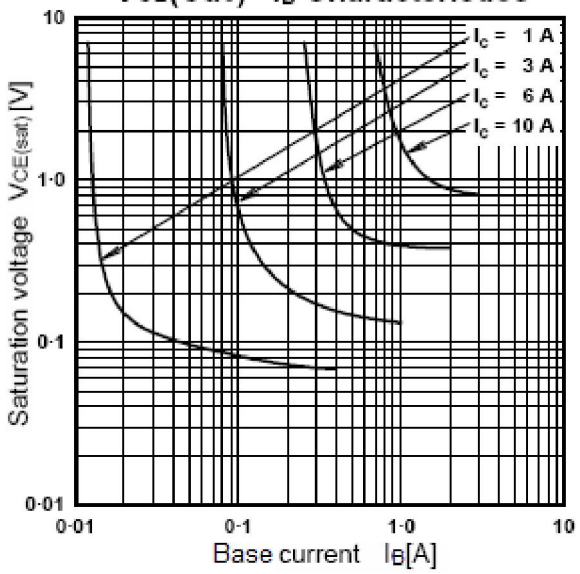
SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	BD245	I_C= 30mA ;I_B=0	45			V
		BD245A		60			
		BD245B		80			
		BD245C		100			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		I_C= 3A; I_B= 0.3A			1.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		I_C= 10A; I_B= 2.5A			4.0	V
$V_{BE(on)-1}$	Base-Emitter On Voltage		I_C= 3A ; V_{CE}= 4V			1.6	V
$V_{BE(on)-2}$	Base-Emitter On Voltage		I_C= 10A ; V_{CE}= 4V			3.0	V
I_{CES}	Collector Cutoff Current	BD245	V_{CE}= 55V; V_{BE}= 0			0.4	mA
		BD245A	V_{CE}= 70V; V_{BE}= 0				
		BD245B	V_{CE}= 90V; V_{BE}= 0				
		BD245C	V_{CE}= 115V; V_{BE}= 0				
I_{CEO}	Collector Cutoff Current	BD245/A	V_{CE}= 30V;I_B= 0			0.7	mA
		BD245B/C	V_{CE}= 60V;I_B= 0				
I_{EBO}	Emitter Cutoff Current		V_{EB}= 5V; I_C=0			1.0	mA
h_{FE-1}	DC Current Gain		I_C= 1A ; V_{CE}= 4V	40			
h_{FE-2}	DC Current Gain		I_C= 3A ; V_{CE}= 4V	20			
h_{FE-3}	DC Current Gain		I_C= 10A ; V_{CE}= 4V	4			
f_T	Current-Gain—Bandwidth Product		I_C= 0.5A ;V_{CE}= 10V,f_{test}= 1.0MHz	3.0			MHz
Switching times							
t_{on}	Turn-on Time		I_C= 1A; I_{B1}= -I_{B2}= 0.1A; R_L=20Ω; $V_{BE(OFF)}$= -3.7V		0.2		μs
t_{off}	Turn-off Time				0.8		μs

isc Silicon NPN Power Transistor BD245/A/B/C

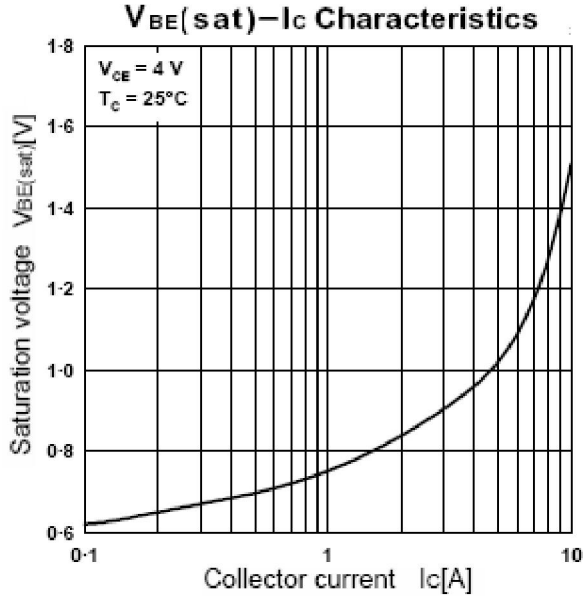
h_{FE}–I_C Characteristics



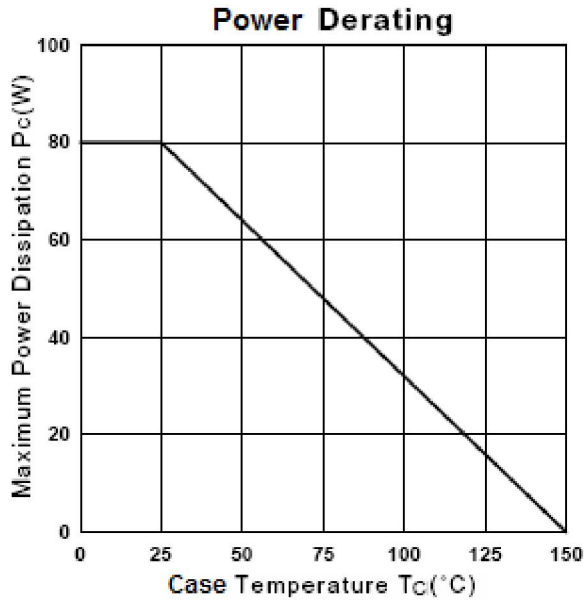
$V_{CE}(sat)$–I_B Characteristics



$V_{BE}(sat)$–I_C Characteristics



Power Derating



Safe Operating Area