

Silicon NPN Power Transistor

BD245/A/B/C

DESCRIPTION

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

APPLICATIONS

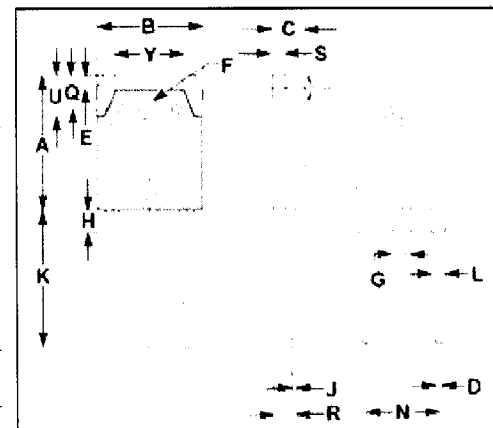
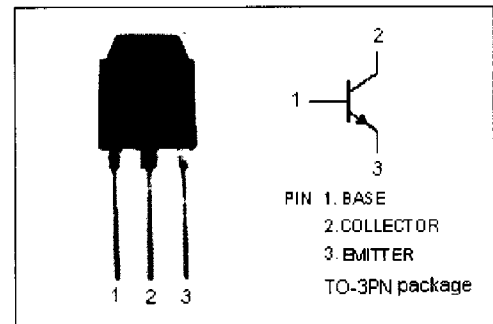
- Designed for use in general purpose power amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT	
V_{CER}	Collector-Emitter Voltage ($R_{BE} = 100 \Omega$)	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 @ $T_a = 25^\circ C$	3	W	
	Collector Power Dissipation @ $T_c = 25^\circ C$	80		
T_J	Junction Temperature	150	$^\circ C$	
T_{stg}	Storage Temperature Range	-65~150	$^\circ C$	

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R_{th-jc}	Thermal Resistance, Junction to Case	1.56	$^\circ C/W$



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



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ELECTRICAL CHARACTERISTICS

$T_C=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	BD245	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	$I_C=0.5A; V_{CE}=10V; f_{test}=1.0\text{MHz}$	3.0			MHz	

Switching times

t_{on}	Turn-on Time	$I_C=1A; I_{B1}=-I_{B2}=0.1A;$ $R_L=20\Omega; V_{BE(OFF)}=-3.7V$		0.2		μs
t_{off}	Turn-off Time			0.8		μs