

isc Silicon NPN Power Transistor

BD545/A/B/C

DESCRIPTION

- Collector Current $-I_C = 15A$
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 40V(\text{Min})$ - BD545; $60V(\text{Min})$ - BD545A
 $80V(\text{Min})$ - BD545B; $100V(\text{Min})$ - BD545C
- Complement to Type BD546/A/B/C
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

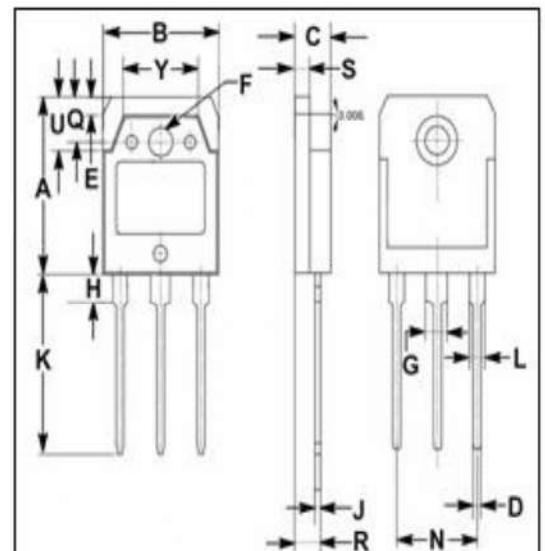
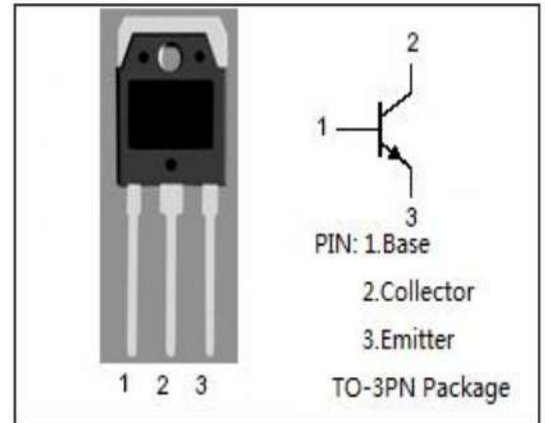
- Designed for use in general purpose power amplifier and switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	BD545	40
		BD545A	60
		BD545B	80
		BD545C	100
V_{CEO}	Collector-Emitter Voltage	BD545	40
		BD545A	60
		BD545B	80
		BD545C	100
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	15	A
P_C	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	3.5	W
	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	85	
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	1.47	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	35.7	$^\circ\text{C/W}$



DIM	mm	
	MIN	MAX
A	19.60	20.30
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	3.20
H	3.20	3.40
J	0.595	0.605
K	19.80	20.70
L	1.90	2.20
N	10.89	10.91
Q	4.90	5.10
R	3.35	3.45
S	1.995	2.100
U	5.90	6.20
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	BD545	$I_C = 30\text{mA}; I_B = 0$	40			V
		BD545A		60			
		BD545B		80			
		BD545C		100			
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage		$I_C = 5\text{A}; I_B = 0.625\text{A}$			0.8	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage		$I_C = 10\text{A}; I_B = 2\text{A}$			1.0	V
$V_{BE(on)}$	Base-Emitter On Voltage		$I_C = 10\text{A}; V_{CE} = 4\text{V}$			1.8	V
I_{CES}	Collector Cutoff Current	BD545	$V_{CE} = 40\text{V}; V_{BE} = 0$			0.4	mA
		BD545A	$V_{CE} = 60\text{V}; V_{BE} = 0$				
		BD545B	$V_{CE} = 80\text{V}; V_{BE} = 0$				
		BD545C	$V_{CE} = 100\text{V}; V_{BE} = 0$				
I_{CEO}	Collector Cutoff Current	BD545/A	$V_{CE} = 30\text{V}; I_B = 0$			0.7	mA
		BD545B/C	$V_{CE} = 60\text{V}; I_B = 0$				
I_{EBO}	Emitter Cutoff Current		$V_{EB} = 5\text{V}; I_C = 0$			1.0	mA
h_{FE-1}	DC Current Gain		$I_C = 1\text{A}; V_{CE} = 4\text{V}$	60			
h_{FE-2}	DC Current Gain		$I_C = 5\text{A}; V_{CE} = 4\text{V}$	25			
h_{FE-3}	DC Current Gain		$I_C = 10\text{A}; V_{CE} = 4\text{V}$	10			
Switching times							
t_{on}	Turn-on Time		$I_C = 6\text{A}; I_{B1} = -I_{B2} = 0.6\text{A};$ $R_L = 5\Omega; V_{BE(off)} = -4\text{V}$		0.6		$\mu\text{ s}$
t_{off}	Turn-off Time				1.0		$\mu\text{ s}$

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