



BD245 – A – B – C

NPN SINGLE-DIFFUSED MESA SILICON POWER TRANSISTORS

They are the power transistors for power amplifier and high-speed-switching applications. The complementary is BD246, A, B, C
Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value	Unit	
V_{CEO}	Collector-Emitter Voltage ($I_C = -30mA$)	BD245	45	V
		BD245A	60	
		BD245B	80	
		BD245C	100	
V_{CER}	Collector-Emitter Voltage ($R_{BE} = 100 \Omega$)	BD245	55	V
		BD245A	70	
		BD245B	90	
		BD245C	115	
V_{EBO}	Emitter-Base Voltage	5.0	V	
I_C	Collector Current	I_C	10	A
		I_{CM}	15	
I_B	Base Current	3	A	
P_T	Power Dissipation $T_{mb} = 25^\circ C$	80	Watts	
T_J	Junction Temperature	-65 to +150	°C	
T_S	Storage Temperature	-65 to +150		

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJC}	Junction to Case Thermal Resistance	1.56	°C / W
R_{thJA}	Junction to free air Thermal Resistance	42	°C / W

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit	
I_{CES}	Collector- Emitter Cut-off Current	$V_{CE} = 55 \text{ V}, V_{BE} = 0$	BD245	-	-	0.4	mA
		$V_{CE} = 70 \text{ V}, V_{BE} = 0$	BD245A				
		$V_{CE} = 90 \text{ V}, V_{BE} = 0$	BD245B				
		$V_{CE} = 115 \text{ V}, V_{BE} = 0$	BD245C				
I_{CEO}	Collector Cut-off Current	$V_{CE} = 30 \text{ V}, I_B = 0$	BD245	-	-	0.7	mA
			BD245A				
		$V_{CE} = 60 \text{ V}, I_B = 0$	BD245B				
			BD245C				
I_{EBO}	Emitter Cut-off Current	$V_{EB} = 5 \text{ V}, I_C = 0$	-	-	1	mA	
V_{CEO}	Collector- Emitter Breakdown Voltage (*)	$I_C = 30 \text{ mA}, I_B = 0$	BD245	45	-	-	V
			BD245A	60	-	-	
			BD245B	80	-	-	
			BD245C	100	-	-	
h_{FE}	DC Current Gain (*)	$V_{CE} = 4 \text{ V}, I_C = 1 \text{ A}$	40	-	-	-	
		$V_{CE} = 4 \text{ V}, I_C = 3 \text{ A}$	20	-	-		
		$V_{CE} = 4 \text{ V}, I_C = 10 \text{ A}$	4	-	-		
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = 3 \text{ A}, I_B = 300 \text{ mA}$	-	-	1	V	
		$I_C = 10 \text{ A}, I_B = 2.5 \text{ A}$	-	-	4		
V_{BE}	Base-Emitter Voltage(*)	$V_{CE} = 4 \text{ V}, I_C = 3 \text{ A}$	-	-	1.6	V	
		$V_{CE} = 4 \text{ V}, I_C = 10 \text{ A}$	-	-	3		
h_{fe}	Small Signal forward Current Transfer ratio	$V_{CE} = 10 \text{ V}, I_C = 500 \text{ mA}$ $f = 1 \text{ MHz}$	20	-	-	-	
$ h_{fe} $	Small Signal forward Current Transfer ratio	$V_{CE} = 10 \text{ V}, I_C = 500 \text{ m}$ $Af = 1 \text{ MHz}$	3	-	-	-	

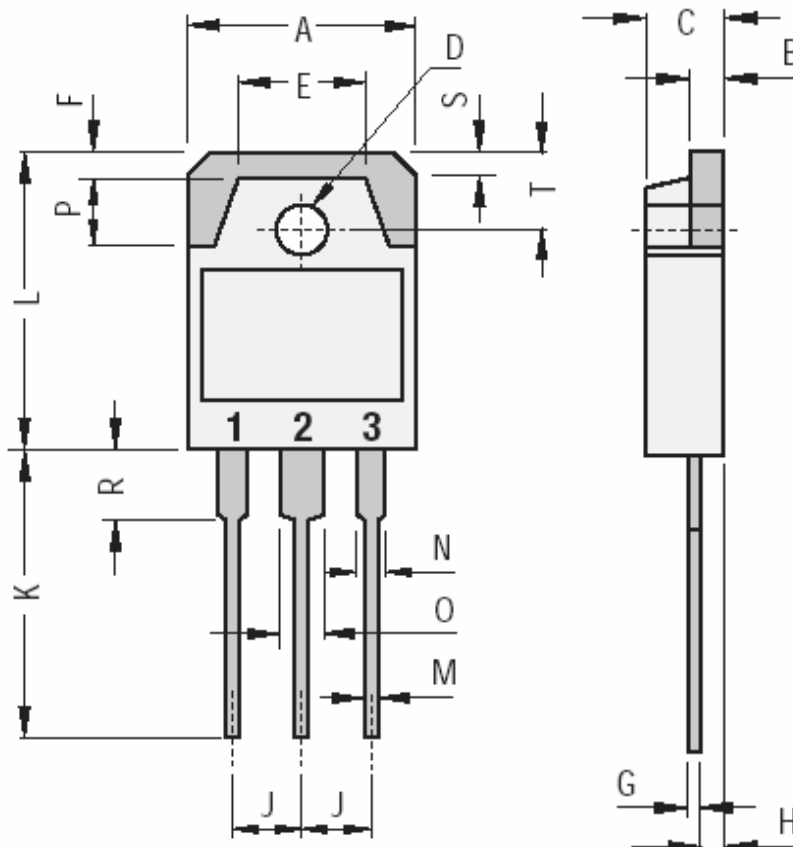
(*) Pulse Width $\approx 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$

RESISTIVE-LOAD-SWITCHING CHARACTERISTICS AT 25°C CASE TEMPERATURE

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
t_{on}	Turn-on Time	$I_C = 1 \text{ A}, I_{B(on)} = 100 \text{ mA},$ $I_{B(off)} = -100 \text{ mA}$ $V_{BE(off)} = -3.7 \text{ V}, R_L = 20 \Omega$	-	0.3	-	μs
t_{off}	Turn-off Time		$t_p = 20 \mu\text{s}$ $dc < 2\%$	-	1	

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MECHANICAL DATA CASE TO3PN Non Isolated Plastic Package



DIMENSIONS (mm)		
	Min.	Max.
A	15.20	1600
B	1.90	2.10
C	4.60	5.00
D	3.10	3.30
E		9.60
F		2.00
G	0.35	0.55
H		1.40
J	5.35	5.55
K	20.00	
L	19.60	20.20
M	0.95	1.25
N		2.00
O		3.00
P		4.00
R		4.00
S		1.80
T	4.80	5.20

Pin 1 :	Base
Pin 2 :	Collector
Pin 3 :	Emitter

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