



BD246, A, B, C

PNP SINGLE-DIFFUSED MESA SILICON POWER TRANSISTORS

The BD246 series are PNP power transistors in a TO3PN envelope. They are the power transistors for power amplifier and high-speed-switching applications. The complementary is BD245, A, B, C. Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value	Unit	
V_{CEO}	Collector-Emitter Voltage ($I_C = -30\text{mA}$)	BD246	-45	V
		BD246A	-60	
		BD246B	-80	
		BD246C	-100	
V_{CER}	Collector-Emitter Voltage ($R_{BE} = 100 \Omega$)	BD246	-55	V
		BD246A	-70	
		BD246B	-90	
		BD246C	-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	$T_{mb} = 25^\circ \text{C}$	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

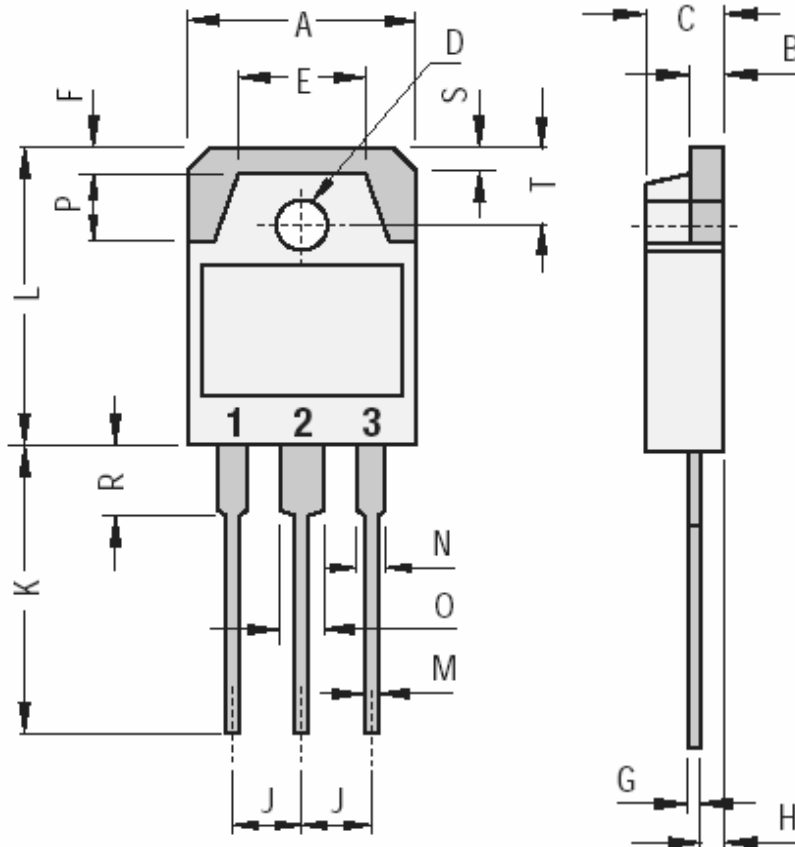
Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
I_{CES}	Collector- Emitter Cut-off Current	$V_{CE} = -55 V, V_{BE} = 0$ BD246	-	-	-0.4	mA	
		$V_{CE} = -70 V, V_{BE} = 0$ BD246A					
		$V_{CE} = -90 V, V_{BE} = 0$ BD246B					
		$V_{CE} = -115 V, V_{BE} = 0$ BD246C					
I_{CEO}	Collector Cut-off Current	$V_{CE} = -30 V, I_B = 0$ BD246	-	-	-0.7	mA	
		BD246A					
		$V_{CE} = -60 V, I_B = 0$ BD246B					
		BD246C					
I_{EBO}	Emitter Cut-off Current	$V_{EB} = -5 V, I_C = 0$	-	-	-1	mA	
V_{CEO}	Collector- Emitter Breakdown Voltage (*)	$I_C = -30 mA, I_B = 0$	BD246	-45	-	-	V
			BD246A	-60	-	-	
			BD246B	-80	-	-	
			BD246C	-100	-	-	
h_{FE}	DC Current Gain (*)	$V_{CE} = -4 V, I_C = -1 A$	40	-	-	-	
		$V_{CE} = -4 V, I_C = -3 A$	20	-	-		
		$V_{CE} = -4 V, I_C = -10 A$	4	-	-		
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C = -3 A, I_B = -300 mA$	-	-	-1	V	
		$I_C = -10 A, I_B = -2.5 A$	-	-	-4		
V_{BE}	Base-Emitter Voltage(*)	$V_{CE} = -4 V, I_C = -3 A$	-	-	-1.6	V	
		$V_{CE} = -4 V, I_C = -10 A$	-	-	-3		
h_{fe}	Small Signal forward Current Transfer ratio	$V_{CE} = -10 V, I_C = -500 mA, f = 1MHz$	20	-	-	-	
$ h_{fe} $	Small Signal forward Current Transfer ratio	$V_{CE} = -10 V, I_C = -500 mA, f = 1MHz$	3	-	-		

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

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit
t_{on}	Turn-on Time	$I_C = -1 A, I_{B(on)} = -100 mA, I_{B(off)} = 100 mA$ $V_{BE(off)} = 3.7 V, R_L = 20 \Omega, t_p = 20 \mu s$ dc < 2%	-	0.2	-	μs
t_{off}	Turn-off Time	$I_C = -1 A, I_{B(on)} = -100 mA, I_{B(off)} = 100 mA$ $V_{BE(off)} = 3.7 V, R_L = 20 \Omega, t_p = 20 \mu s$ dc < 2%	-	0.8	-	

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MECHANICAL DATA CASE TO3PN Non Isolated Plastic Package



DIMENSIONS (mm)		
	Min.	Max.
A	15.20	16.00
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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