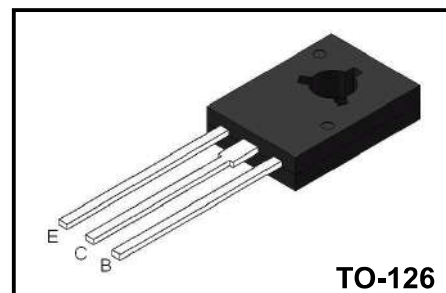


NPN Plastic-Encapsulate Transistors

Medium Power Linear and Switching Applications

◆ Complement to BD434, BD436 and BD438 respectively



TO-126

Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Value	Unit
Collector-Base Voltage	BD433	BV_{CBO}	22	V
	BD435		32	
	BD437		45	
Collector-Emitter Voltage	BD433	BV_{CEO}	22	V
	BD435		32	
	BD437		45	
Emitter-Base Voltage		BV_{EBO}	5	V
Collector Current (DC)		I_C	4	A
Collector Current(Pulse) *		I_{CP}	7	A
		I_B	1	A
Collector Power Dissipation		P_C	36	W
Junction Temperature		T_j	150	℃
Storage Temperature		T_{stg}	-55~150	℃

Electrical Characteristics (Ta=25°C)

Parameter		Symbol	Conditions	Value			Unit
				Min	Typ	Max	
Collector-base breakdown voltage	BD433 BD435 BD437	BV_{CBO}	$I_C = 100\mu A, I_E = 0$	22 32 45			V
Collector-emitter breakdown voltage	BD433 BD435 BD437	BV_{CEO}	$I_C = 10mA, I_B = 0$	22 32 45			V
Emitter-base breakdown voltage		BV_{EBO}	$I_E = 100\mu A, I_C = 0$	5			V
Collector cut-off current	BD433 BD435 BD437	I_{CBO}	$V_{CB} = 22V, I_E = 0$ $V_{CB} = 32V, I_E = 0$ $V_{CB} = 45V, I_E = 0$			100	μA
Collector cut-off current	BD433 BD435 BD437	I_{CEO}	$V_{CE} = 22V, V_{BE} = 0$ $V_{CE} = 32V, V_{BE} = 0$ $V_{CE} = 45V, V_{BE} = 0$			100	μA
Emitter cut-off current		I_{EBO}	$V_{EB} = 5V, I_C = 0$			100	μA
DC current gain*		h_{FE}	$V_{CE} = 5V, I_C = 10mA$ $V_{CE} = 1V, I_C = 0.5A$ $V_{CE} = 1V, I_C = 2A$	30 85 40		140 140	
Collector-emitter saturation voltage*		$V_{CE(sat)}$	$I_C = 2A, I_B = 0.2A$		0.2	0.5	V
Base -emitter saturation voltage*		$V_{BE(on)}$	$V_{CE} = 1V, I_C = 2A$			1.1	V
Transition frequency		f_T	$V_{CE} = 1V, I_B = 250mA$	3			MHz

* Pulse Test: PW=300 μ s, duty Cycle=1.5% Pulsed

Typical Characteristics

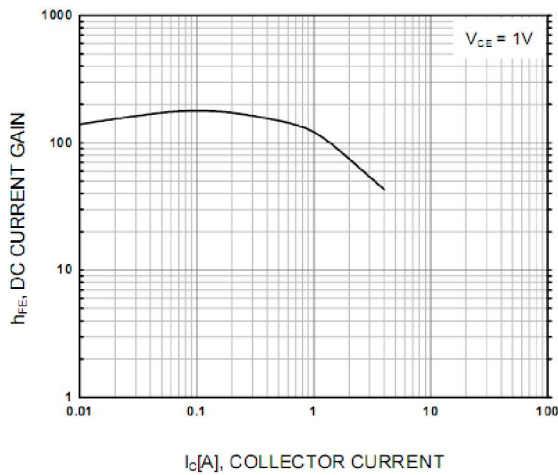


Figure 1. DC current Gain

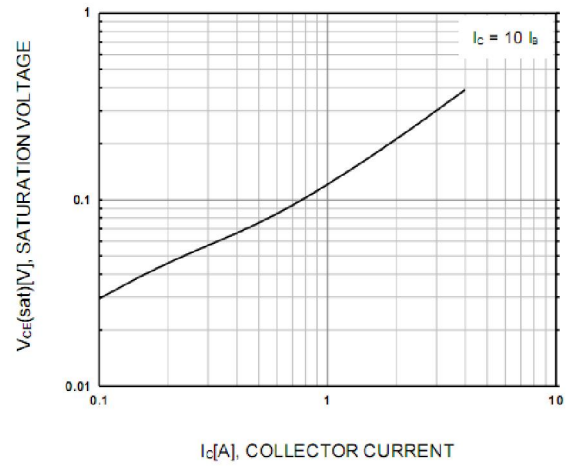


Figure 2. Collector-Emitter Saturation Voltage

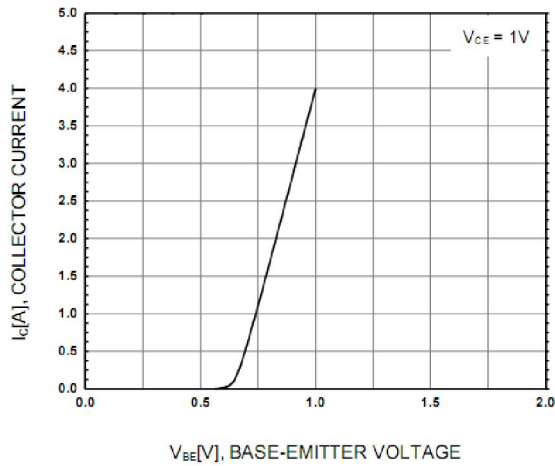


Figure 3. Base-Emitter On Voltage

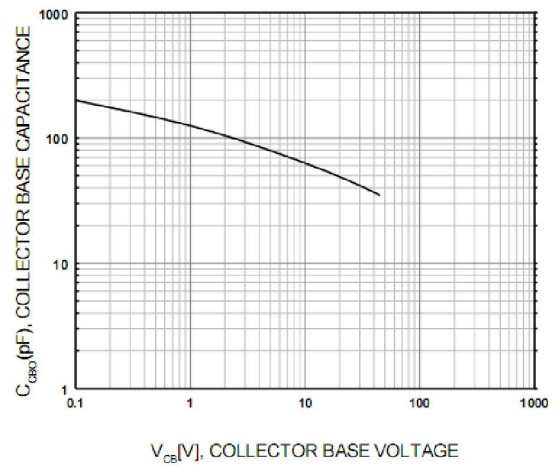


Figure 4. Collector-Base Capacitance

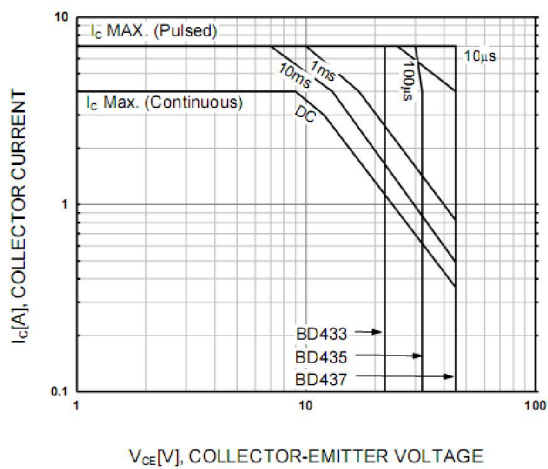


Figure 5. Safe Operating Area

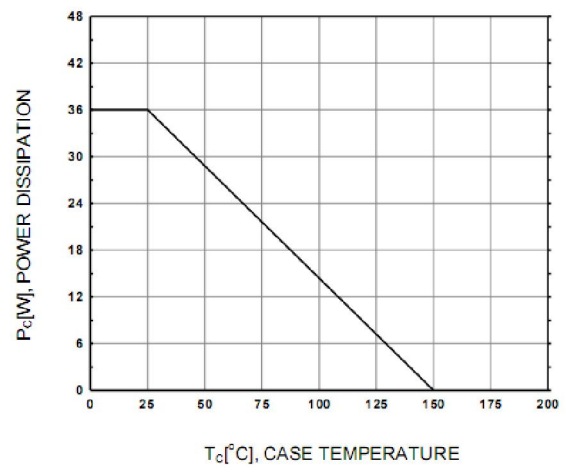


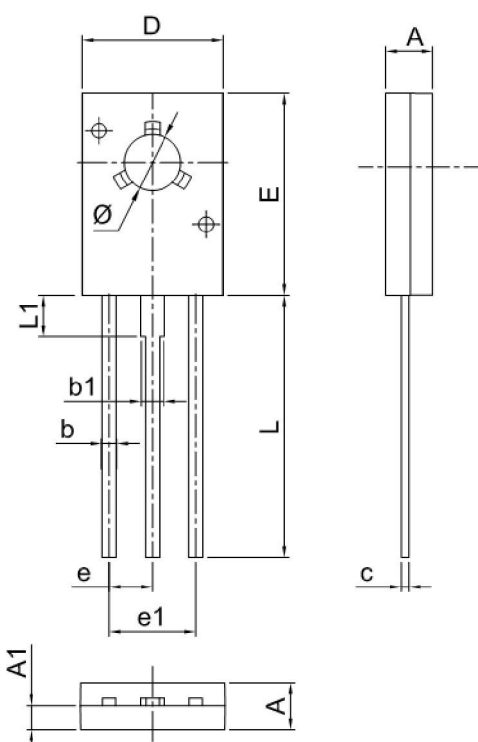
Figure 6. Power Derating

Ordering information

Package	Packing Description	Base Quantity
TO-126	Bulk	500pcs/Bag

Package Dimensions

TO-126

	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.40	2.80	0.094	0.110
A1	1.00	1.40	0.039	0.055
b	0.66	0.86	0.026	0.034
b1	1.17	1.37	0.046	0.054
c	0.40	0.60	0.016	0.024
D	7.30	7.70	0.287	0.303
E	10.60	11.00	0.417	0.433
e	2.25	2.33	0.089	0.092
e1	4.50	4.66	0.177	0.183
L	14.00	15.00	0.551	0.591
L1	1.90	2.50	0.075	0.098
Φ	3.10	3.30	0.122	0.130

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