

COMPLEMENTARY SILICON POWER TRANSISTORS

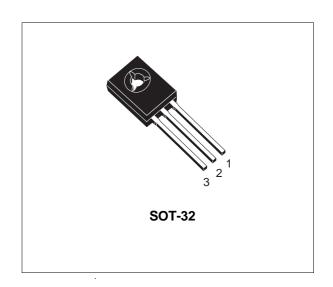
- STMicroelectronics PREFERRED SALESTYPE
- COMPLEMENTARY PNP NPN DEVICES

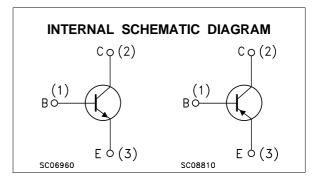
DESCRIPTION

The BD433, BD435, and BD437 are silicon epitaxial-base NPN power transistors in Jedec SOT-32 plastic package, intented for use in medium power linear and switching applications.

The BD433 is especially suitable for use in car-radio output stages.

The complementary PNP types are BD434, BD436, and BD438 respectively.





ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter			Unit		
		NPN	BD433	BD435	BD437	
		PNP	BD434	BD436	BD438	
V _{CBO}	Collector-Base Voltage (I _E = 0)		22	32	45	V
Vces	Collector-Emitter Voltage (V _{BE} = 0)		22	32	45	V
V _{CEO}	Collector-Emitter Voltage (I _B = 0)		22	32	45	V
V _{EBO}	Emitter-Base Voltage (I _C = 0)			5		V
Ic	Collector Current			4		Α
I _{CM}	Collector Peak Current (t ≤ 10 ms)			7		
Ι _Β	Base Current		1			Α
P _{tot}	Total Dissipation at T _c ≤ 25 °C		36		W	
T _{stg}	Storage Temperature		-65 to 150			°C
Tj	Max. Operating Junction Temperature		°C			

For PNP types voltage and current values are negative.

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BD433 BD434 BD435 BD436 BD437 BD438

THERMAL DATA

R _{thj-case}	Thermal Resistance Junction-case	Max	3.5	°C/W
R _{thj-amb}	Thermal Resistance Junction-ambient	Max	100	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

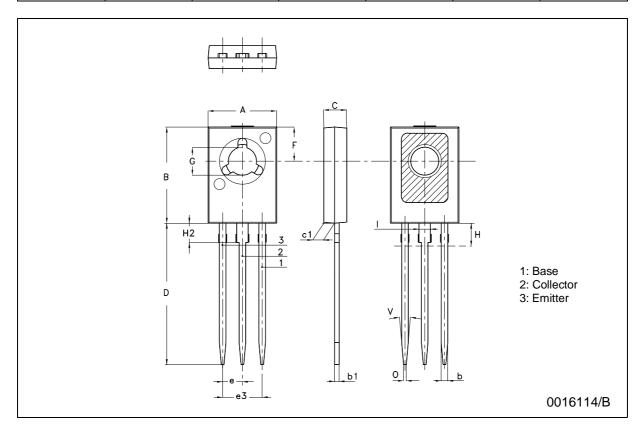
Symbol	Parameter	Test	Conditions	Min.	Тур.	Max.	Unit
Ісво	Collector Cut-off Current (I _E = 0)	for BD433/434 for BD435/436 for BD437/438	$V_{CB} = 32 \text{ V}$			100 100 100	μΑ μΑ μΑ
I _{CES}	Collector Cut-off Current (V _{BE} = 0)	for BD433/434 for BD435/436 for BD437/438	$V_{CE} = 32 \text{ V}$			100 100 100	μΑ μΑ μΑ
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V				1	mA
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 100 mA	for BD433/434 for BD435/436 for BD437/438	22 32 45			V V V
VCE(sat)*	Collector-Emitter Saturation Voltage	I _C = 2 A	I _B = 0.2 A for BD433/434 for BD435/436 for BD437/438		0.2 0.2 0.2	0.5 0.5 0.6	V V V
V _{BE} *	Base-Emitter Voltage	I _C = 10 mA I _C = 2 A	$V_{CE} = 5 \text{ V}$ $V_{CE} = 1 \text{ V}$ for BD433/434 for BD435/436 for BD437/438		0.58	1.1 1.1 1.2	V V V
h _{FE} *	DC Current Gain	I _C = 10 mA I _C = 500 mA I _C = 2 A	VCE = 5 V for BD433/434 for BD435/436 for BD437/438 VCE = 1 V VCE = 1 V for BD433/434 for BD435/436	40 40 30 85 50 50 40	130 130 130 140		
h _{FE1} /h _{FE2} *	Matched Pair	I _C = 500 mA	V _{CE} = 1 V			1.4	
f _T	Transition frequency	I _C = 250 mA	V _{CE} = 1 V	3			MHz

^{*} Pulsed: Pulse duration = 300 µs, duty cycle 1.5 %

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SOT-32 (TO-126) MECHANICAL DATA

DIM.		mm			inch	
Dilvi.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
Α	7.4		7.8	0.291		0.307
В	10.5		10.8	0.413		0.425
b	0.7		0.9	0.028		0.035
b1	0.40		0.65	0.015		0.025
С	2.4		2.7	0.094		0.106
c1	1.0		1.3	0.039		0.051
D	15.4		16.0	0.606		0.630
е		2.2			0.087	
e3		4.4			0.173	
F		3.8			0.150	
G	3		3.2	0.118		0.126
Н			2.54			0.100
H2		2.15			0.084	
I		1.27			0.05	
0		0.3			0.011	
V		10°			10°	



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