

COMPLEMENTARY SILICON POWER TRANSISTORS

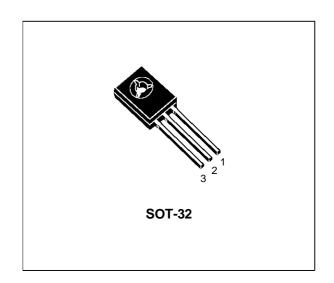
■ SGS-THOMSON PREFERRED SALESTYPES

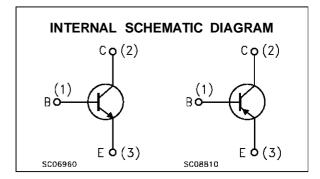
DESCRIPTION

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		Value			Unit
		NPN	BD433	BD435	BD437]
		PNP	BD434	BD436	BD438	
V _{CBO}	Collector-Base Voltage (I _E = 0)		22	32	45	V
V _{CES}	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		Α	
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		150			°C

For PNP types voltage and current values are negative.

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THERMAL DATA

R _{thj-case}	Thermal Resistance Ju	unction-case Max	3.5	°C/W
$R_{thj-amb}$	Thermal Resistance Ju	unction-ambient Max	100	°C/W

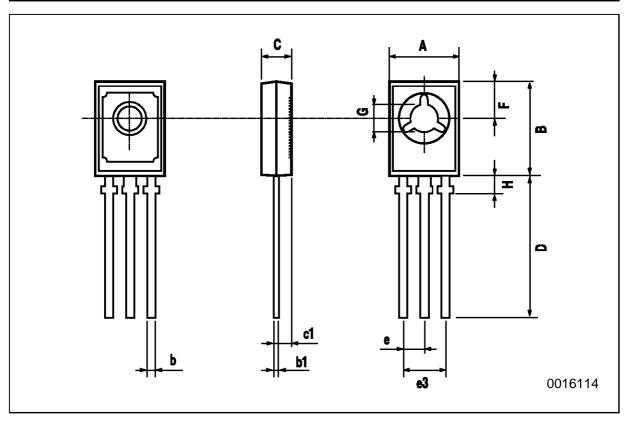
ELECTRICAL CHARACTERISTICS ($T_{case} = 25$ °C unless otherwise specified)

Symbol	Parameter	Test Conditions		Min.	Тур.	Max.	Unit
І _{СВО}	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
Ices	Collector Cut-off Current (V _{BE} = 0)	for BD433/434 for BD435/436 for BD437/438	$V_{CB} = 32 \text{ V}$			100 100 100	mA mA mA
ГЕВО	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
V _{CE(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 _{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	V _{CE} = 5 V for BD433/434 for BD435/436 for BD437/438 V _{CE} = 1 V V _{CE} = 1 V for BD433/434 for BD435/436 for BD437/438	40 40 30 85 50 50 40	130 130 130 140		
h _{FE1} /h _{FE2} *	Matched Pair	IC = 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 %

SOT-32 MECHANICAL DATA

DIM.	mm			inch			
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
А	7.4		7.8	0.291		0.307	
В	10.5		10.8	0.413		0.445	
b	0.7		0.9	0.028		0.035	
b1	0.49		0.75	0.019		0.030	
С	2.4		2.7	0.04		0.106	
c1		1.2			0.047		
D		15.7			0.618		
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	



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