

BD439/BD440 BD441/BD442

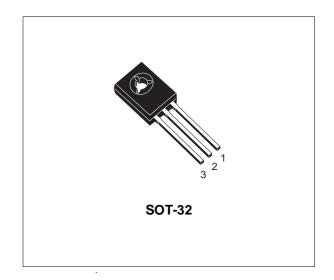
COMPLEMENTARY SILICON POWER TRANSISTORS

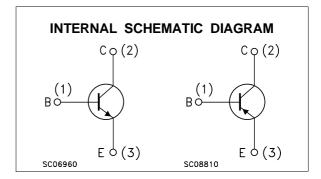
- SGS-THOMSON PREFERRED SALESTYPES
- COMPLEMENTARY PNP NPN DEVICES

DESCRIPTION

The BD439 and BD441 are silicon epitaxial-base NPN power transistors in Jedec SOT-32 plastic package, intented for use in power linear and switching applications.

The complementary PNP types are BD440, and BD442 respectively.





ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value			Unit
		NPN	BD439	BD441	
		PNP	BD440	BD442	
V _{CBO}	Collector-Base Voltage (I _E = 0)		60	80	V
V _{CES}	Collector-Emitter Voltage (V _{BE} = 0)		60	80	V
V _{CEO}	Collector-Emitter Voltage (I _B = 0)		60	80	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
I_{B}	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 Junction-case	Max	3.5	°C/W	l
R _{thj-amb}	Thermal Resistance Junction-ambient	Max	100	°C/W	l

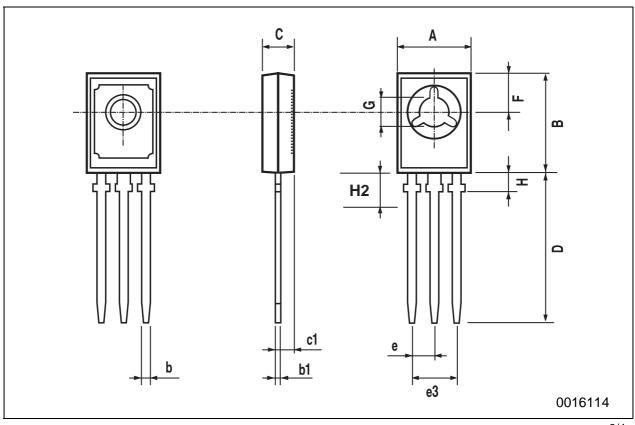
ELECTRICAL CHARACTERISTICS ($T_{case} = 25$ $^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test	Test Conditions		Тур.	Max.	Unit
Ісво	Collector Cut-off Current (I _E = 0)	for BD439/440 for BD441/442	05			100 100	μA μA
Ices	Collector Cut-off Current (V _{BE} = 0)	for BD439/440 for BD441/442	05			100 100	μA μA
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 DB439/440 for BD441/442	60 80			V
V _{CE(sat)} *	Collector-Emitter Saturation Voltage	I _C = 2 A	$I_B = 0.2 A$			0.8	V
V _{BE} *	Base-Emitter Voltage	I _C = 10 mA I _C = 2 A	$V_{CE} = 5 V$ $V_{CE} = 1 V$		0.58	1.5	V
h _{FE} *	DC Current Gain	$I_C = 10 \text{ mA}$ $I_C = 500 \text{ mA}$ $I_C = 2 \text{ A}$	V _{CE} = 5 V for BD439/440 for BD441/442 V _{CE} = 1 V for BD439/440 for BD441/442 V _{CE} = 1 V for BD439/440 for BD441/442	20 15 40 40 25 15	130 130 140 140		
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 (TO-126) 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	0.040		0.106	
c1	1.0		1.3	0.039		0.050	
D	15.4		16.0	0.606		0.629	
е		2.2			0.087		
e3	4.15		4.65	0.163		0.183	
F		3.8			0.150		
G	3		3.2	0.118		0.126	
Н			2.54			0.100	
H2		2.15			0.084		



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