BD533 BD535 BD537
BD534 BD536 BD538

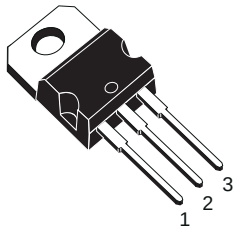
COMPLEMENTARY SILICON POWER TRANSISTORS

- BD534, BD535, BD536, BD537 AND BD538 ARE STMicroelectronics PREFERRED SALESTYPES

DESCRIPTION

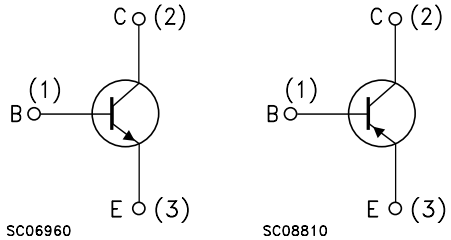
The BD533, BD535, and BD537 are silicon Epitaxial-Base NPN power transistors in Jedec TO-220 plastic package, intented for use in medium power linear and switching applications.

The complementary PNP types are BD534, BD536, and BD538 respectively.



TO-220

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value			Unit
		NPN	BD533	BD535	BD537	
		PNP	BD534	BD536	BD538	
V_{CBO}	Collector-Base Voltage (I_E = 0)		45	60	80	V
V_{CES}	Collector-Emitter Voltage (V_{BE} = 0)		45	60	80	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)		45	60	80	V
V_{EBO}	Emitter-Base Voltage (I_C = 0)		5			V
I_C,I_E	Collector and Emitter Current		8			A
I_B	Base Current		1			A
P_{tot}	Total Dissipation at $T_c \leq 25\ ^oC$		50			W
T_{stg}	Storage Temperature		-65 to 150			^oC
T_j	Max. Operating Junction Temperature		150			^oC

For PNP types voltage and current values are negative.

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	2.5	$^oC/W$
$R_{thj\text{-}amb}$	Thermal Resistance Junction-ambient	Max	70	$^oC/W$

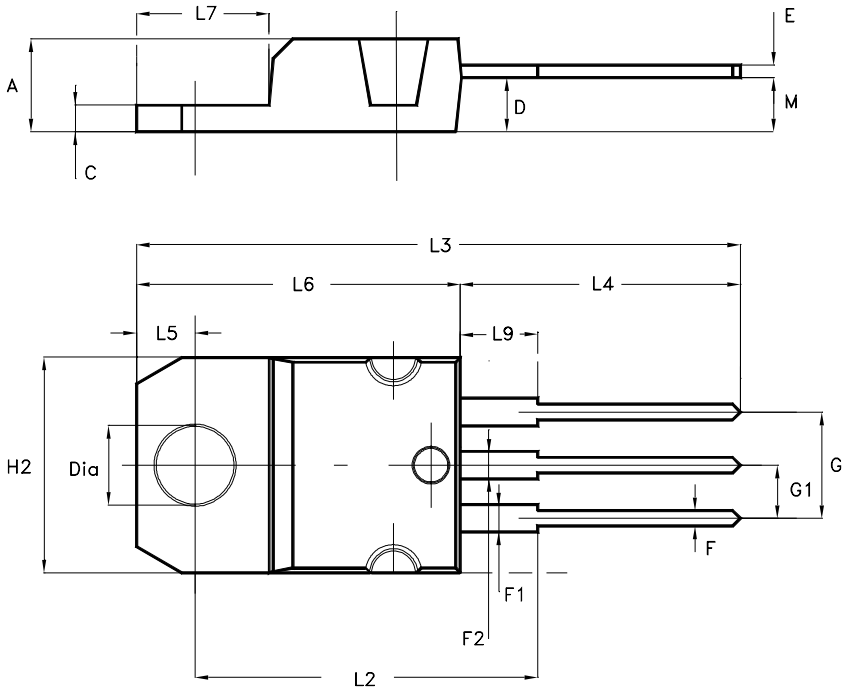
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current (I_E = 0)	for **BD533/534**	V_{CB} = 45 V			100	µA
		for **BD535/536**	V_{CB} = 60 V			100	µA
		for **BD537/538**	V_{CB} = 80 V			100	µA
I_{CES}	Collector Cut-off Current (V_{BE} = 0)	for **BD533/534**	V_{CE} = 45 V			100	µA
		for **BD535/536**	V_{CE} = 60 V			100	µA
		for **BD537/538**	V_{CE} = 80 V			100	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 **BD533/534**	45			V
			for **BD535/536**	60			V
			for **BD537/538**	80			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 2 A	I_B = 0.2 A			0.8	V
		I_C = 6 A	I_B = 0.6 A		0.8		V
V_{BE}*	Base-Emitter Voltage	I_C = 2 A	V_{CE} = 2 V			1.5	V
h_{FE}*	DC Current Gain	I_C = 10 mA	V_{CE} = 5 V				
			for **BD533/534**	20			
			for **BD535/536**	20			
			for **BD537/538**	15			
		I_C = 500 mA	V_{CE} = 2 V	40			
		I_C = 2 A	V_{CE} = 2 V				
			for **BD533/534**	25			
			for **BD535/536**	25			
			for **BD537/538**	15			
f_T	Transition frequency	I_C = 500 mA	V_{CE} = 1 V	3	12		MHz

* Pulsed: Pulse duration = 300 µs, duty cycle 1.5 %
For PNP types voltage and current values are negative.

TO-220 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.052
D	2.40		2.72	0.094		0.107
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.202
G1	2.40		2.70	0.094		0.106
H2	10.00		10.40	0.394		0.409
L2		16.40			0.645	
L4	13.00		14.00	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.20		6.60	0.244		0.260
L9	3.50		3.93	0.137		0.154
M		2.60			0.102	
DIA.	3.75		3.85	0.147		0.151



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