

COMPLEMENTARY SILICON POWER TRANSISTORS

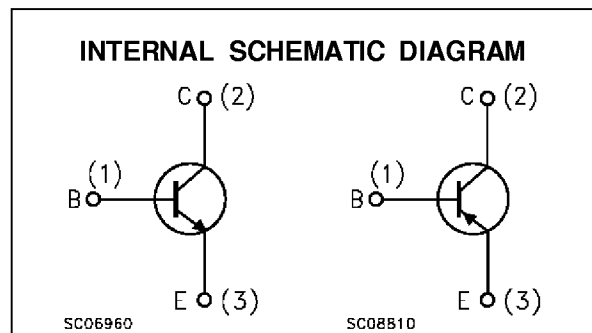
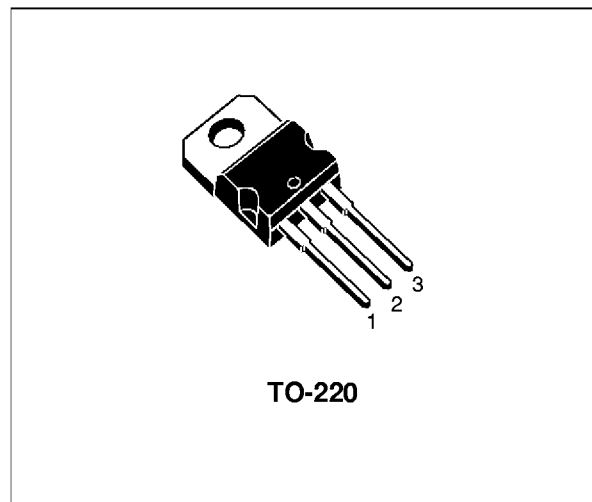
■ SGS-THOMSON PREFERRED SALESTYPES

DESCRIPTION

The BD241A, BD241B and BD241C are silicon epitaxial-base NPN transistors mounted in Jedec TO-220 plastic package.

They are intended for use in medium power linear and switching applications.

The complementary PNP types are BD242A, BD242B and BD242C respectively.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value			Unit	
		NPN	BD241A	BD241B		BD241C
		PNP	BD242A	BD242B		BD242C
V_{CER}	Collector-Base Voltage ($R_{BE} = 100 \Omega$)		70	90	115	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)		60	80	100	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)			5		V
I_C	Collector Current			3		A
I_{CM}	Collector Peak Current			5		A
I_B	Base Current			1		A
P_{tot}	Total Dissipation at $T_c \leq 25^\circ C$			40		W
P_{tot}	Total Dissipation at $T_{amb} \leq 25^\circ C$			2		W
T_{stg}	Storage Temperature			-65 to 150		$^\circ C$
T_j	Max. Operating Junction Temperature			150		$^\circ C$

For PNP types voltage and current values are negative.

BD241A/B/C/BD242A/B/C

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	3.13	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	62.5	$^{\circ}C/W$

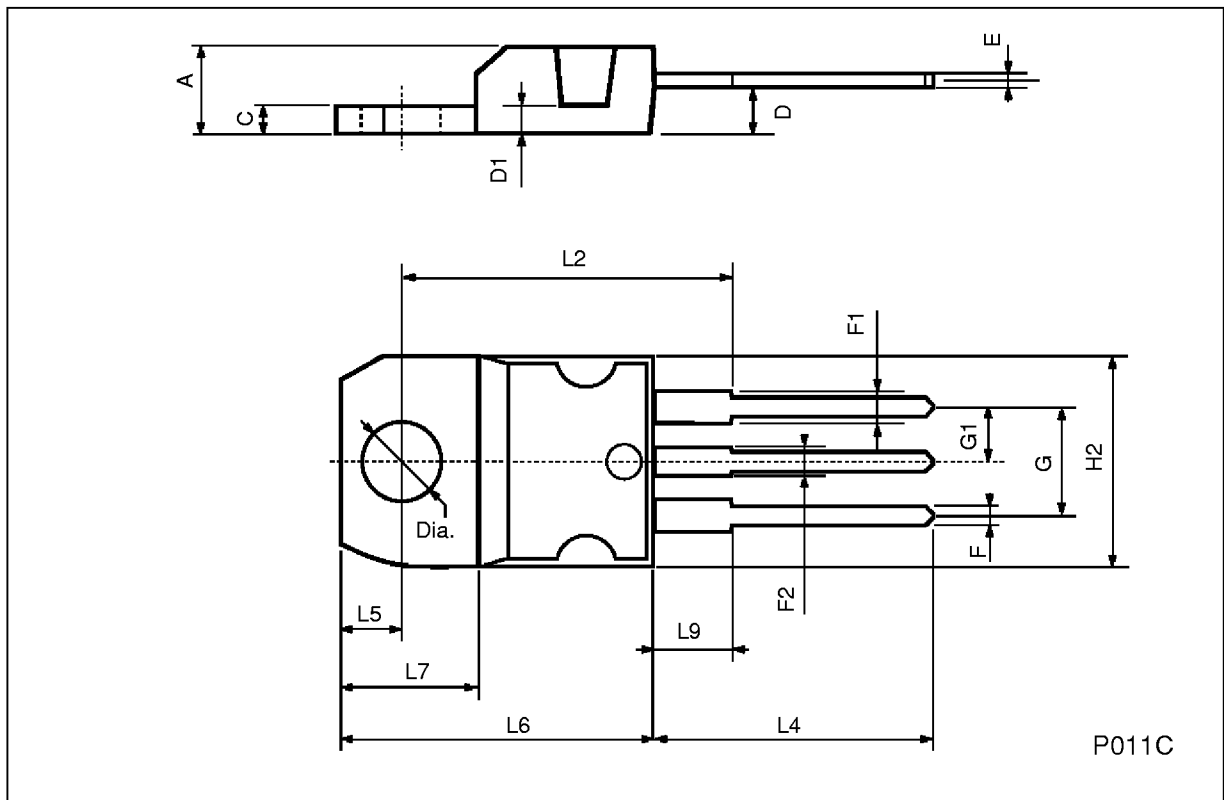
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current ($V_{BE} = 0$)	$V_{CE} = \text{rated } V_{CEO}$			0.2	mA
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	for BD241A/BD242A $V_{CE} = 30\text{ V}$ for BD241B/BD242B $V_{CE} = 60\text{ V}$ for BD241C/BD242C $V_{CE} = 60\text{ V}$			0.3 0.3 0.3	mA mA mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5\text{ V}$			1	mA
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage	$I_C = 30\text{ mA}$ for BD241A/BD242A for BD241B/BD242B for BD241C/BD242C	60 80 100			V V V
$V_{CE(sat)*}$	Collector-Emitter Saturation Voltage	$I_C = 3\text{ A}$ $I_B = 0.6\text{ A}$			1.2	V
V_{BE*}	Base-Emitter Voltage	$I_C = 3\text{ A}$ $V_{CE} = 4\text{ V}$			1.8	V
h_{FE*}	DC Current Gain	$I_C = 1\text{ A}$ $V_{CE} = 4\text{ V}$ $I_C = 3\text{ A}$ $V_{CE} = 4\text{ V}$	25 10			
h_{fe}	Small Signal Current Gain	$I_C = 0.5\text{ A}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ MHz}$ $I_C = 0.5\text{ A}$ $V_{CE} = 10\text{ V}$ $f = 1\text{ KHz}$	3 20			

* Pulsed: Pulse duration = 300 μs , duty cycle $\leq 2\%$
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		0.051
D	2.40		2.72	0.094		0.107
D1		1.27			0.050	
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		0.203
G1	2.4		2.7	0.094		0.106
H2	10.0		10.40	0.393		0.409
L2		16.4			0.645	
L4	13.0		14.0	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.2		6.6	0.244		0.260
L9	3.5		3.93	0.137		0.154
DIA.	3.75		3.85	0.147		0.151



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