

# BD241A/B/C BD242A/B/C

## COMPLEMENTARY SILICON POWER TRANSISTORS

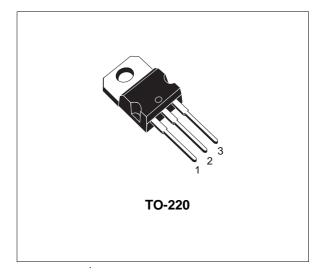
- STMicroelectronics PREFERRED SALESTYPES
- COMPLEMENTARY PNP NPN DEVICES

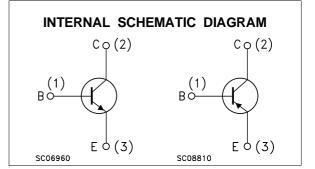
#### DESCRIPTION

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

They are inteded 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			
		NPN	BD241A	BD241B	BD241C	
		PNP	BD242A	BD242B	BD242C	
Vcer	Collector-Base Voltage ( $R_{BE} = 100 \Omega$ )		70	90	115	V
VCEO	Collector-Emitter Voltage $(I_B = 0)$		60	80	100	V
V <sub>EBO</sub>	Emitter-Base Voltage $(I_C = 0)$			5		V
Ι <sub>C</sub>	Collector Current		3			Α
Ісм	Collector Peak Current		5			Α
IB	Base Current		1			Α
Ptot	Total Dissipation at $T_c \le 25$ °C			W		
P <sub>tot</sub>	Total Dissipation at $T_{amb} \le 25 \ ^{\circ}C$		2			W
$T_{stg}$	Storage Temperature			°C		

### THERMAL DATA

R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	3.13	°C/W
R <sub>thj-amb</sub>	Thermal Resistance Junction-ambient	Max	62.5	°C/W

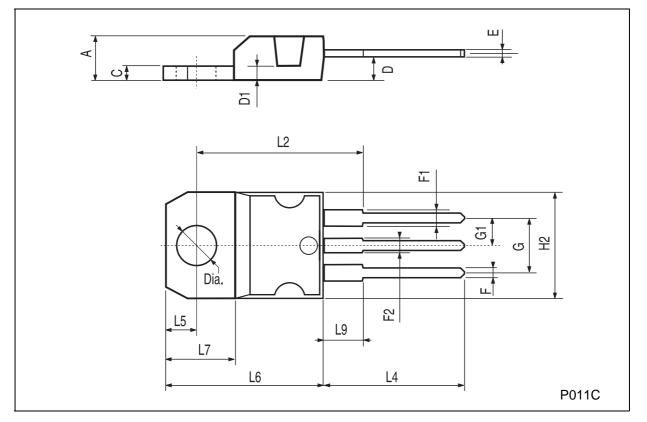
### **ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25 \ ^{\circ}C$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
ICES	Collector Cut-off Current (V <sub>BE</sub> = 0)	V <sub>CE</sub> = rated V <sub>CEO</sub>			0.2	mA
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)				0.3 0.3 0.3	mA mA mA
I <sub>EBO</sub>	Emitter Cut-off Current $(I_C = 0)$	V <sub>EB</sub> = 5 V			1	mA
VCEO(sus)*	Collector-Emitter Sustaining Voltage	Ic = 30 mA for BD241A/BD242A for BD241B/BD242B for BD241C/BD242C	60 80 100			V V V
V <sub>CE(sat)</sub> *	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 3 A I <sub>B</sub> = 0.6 A			1.2	V
V <sub>BE</sub> *	Base-Emitter Voltage	$I_C = 3 A$ $V_{CE} = 4 V$			1.8	V
h <sub>FE</sub> *	DC Current Gain		25 10			
h <sub>fe</sub>	Small Signal Current Gain		3 20			

\* Pulsed: Pulse duration =  $300 \ \mu s$ , duty cycle  $\leq 2 \%$ For PNP types voltage and current values are negative. For the characteristics curves see TIP31/TIP32 series.

DIM.	mm			inch			
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
А	4.40		4.60	0.173		0.181	
С	1.23		1.32	0.048		0.051	
D	2.40		2.72	0.094		0.107	
D1		1.27			0.050		
Е	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	

## TO-220 MECHANICAL DATA



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