

## COMPLEMENTARY SILICON POWER TRANSISTORS

- STMicroelectronics PREFERRED SALES TYPES
- COMPLEMENTARY PNP - NPN DEVICES
- FULLY MOLDED ISOLATED PACKAGE
- 2000 V DC ISOLATION (U.L. COMPLIANT)

### APPLICATIONS

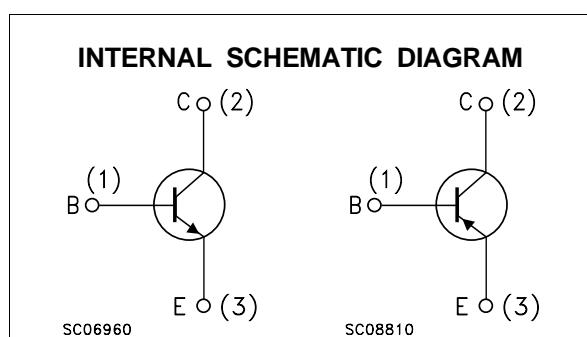
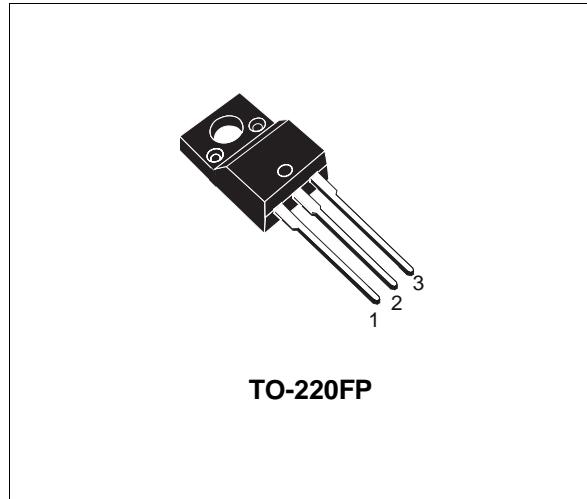
- GENERAL PURPOSE SWITCHING
- GENERAL PURPOSE AMPLIFIERS

### DESCRIPTION

The BD241BFP is silicon epitaxial-base NPN transistors mounted in TO-220FP fully molded isolated package.

It is intended for power linear and switching applications.

The complementary PNP types is the BD242BFP.



### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		NPN	BD241BFP	
V <sub>CER</sub>	Collector-Base Voltage ( $R_{BE} = 100 \Omega$ )	90	V	
	Collector-Emitter Voltage ( $I_B = 0$ )			
V <sub>EBO</sub>	Emitter-Base Voltage ( $I_C = 0$ )	5		V
I <sub>C</sub>	Collector Current	3		A
I <sub>CM</sub>	Collector Peak Current	5		A
I <sub>B</sub>	Base Current	1		A
P <sub>tot</sub>	Total Dissipation at $T_c \leq 25^\circ\text{C}$	24		W
T <sub>stg</sub>	Storage Temperature	-65 to 150		°C
T <sub>j</sub>	Max. Operating Junction Temperature	150		°C

For PNP types voltage and current values are negative.

## BD241BFP / BD242BFP

### THERMAL DATA

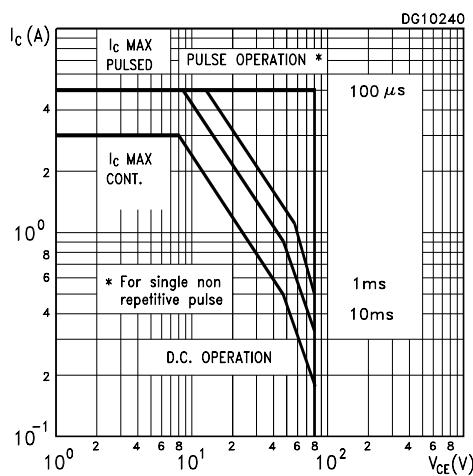
$R_{thj-case}$	Thermal Resistance Junction-case	Max	5.3	$^{\circ}\text{C/W}$
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### ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CEO}$	Collector Cut-off Current ( $I_B = 0$ )	$V_{CE} = 60 \text{ V}$			0.3	mA
$I_{CES}$	Collector Cut-off Current ( $V_{BE} = 0$ )	$V_{CE} = 80 \text{ V}$			0.2	mA
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 5 \text{ V}$			1	mA
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 30 \text{ mA}$	80			V
$V_{CE(sat)*}$	Collector-Emitter Saturation Voltage	$I_C = 3 \text{ A}$ $I_B = 0.6 \text{ A}$			1.2	V
$V_{BE(ON)*}$	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			

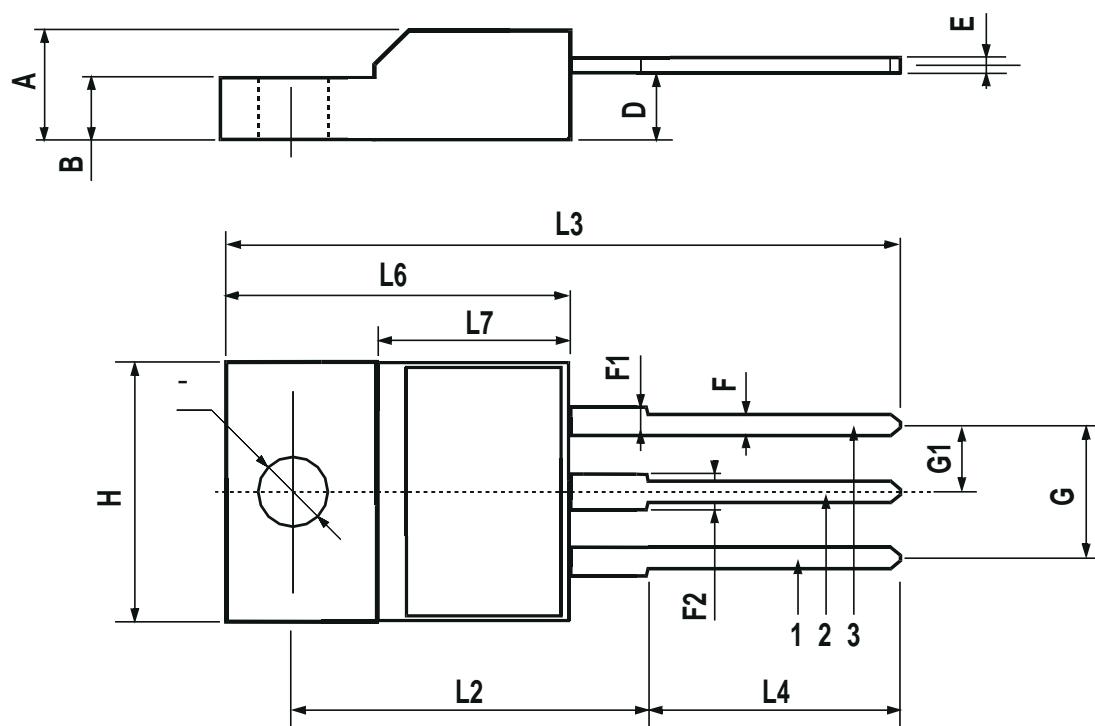
\* Pulsed: Pulse duration = 300  $\mu\text{s}$ , duty cycle  $\leq 2\%$   
For PNP types voltage and current values are negative.

### Safe Operating Area



## TO-220FP MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.4		4.6	0.173		0.181
B	2.5		2.7	0.098		0.106
D	2.5		2.75	0.098		0.108
E	0.45		0.7	0.017		0.027
F	0.75		1	0.030		0.039
F1	1.15		1.7	0.045		0.067
F2	1.15		1.7	0.045		0.067
G	4.95		5.2	0.195		0.204
G1	2.4		2.7	0.094		0.106
H	10		10.4	0.393		0.409
L2		16			0.630	
L3	28.6		30.6	1.126		1.204
L4	9.8		10.6	0.385		0.417
L6	15.9		16.4	0.626		0.645
L7	9		9.3	0.354		0.366
Ø	3		3.2	0.118		0.126



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