SGS-THOMSON MICROELECTRONICS

BD241BFI
BD242BFI

COMPLEMENTARY SILICON POWER TRANSISTORS

- SGS-THOMSON PREFERRED SALESTYPES
- COMPLEMENTARY PNP - NPN DEVICES

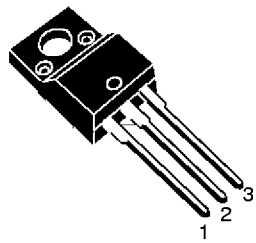
APPLICATIONS
- GENERAL PURPOSE SWITCHING
- GENERAL PURPOSE AMPLIFIERS

DESCRIPTION

The BD241BFI is silicon epitaxial-base NPN transistors mounted in ISOWATT220 plastic package.

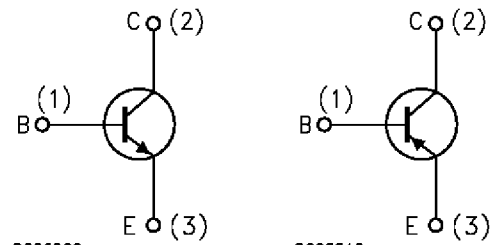
It is are inteded for power linear and switching applications.

The complementary PNP types is the BD242BFI.



ISOWATT220

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
		NPN	BD241BFI	
		PNP	BD242BFI	
V_{CER}	Collector-Base Voltage (R_{BE} = 100 Ω)		90	V
V_{CEO}	Collector-Emitter Voltage (I_B = 0)		80	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 $T_c \leq 25$ °C		18	W
T_{stg}	Storage Temperature		-65 to 150	°C
T_j	Max. Operating Junction Temperature		150	°C

For PNP types voltage and current values are negative.

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	7	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO}	Collector Cut-off Current (I_B = 0)	V_{CE} = 60 V			0.3	mA
I_{CES}	Collector Cut-off Current (V_{BE} = 0)	V_{CE} = 80 V			0.2	mA
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 = 30 mA	80			V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = 3 A I_B = 0.6 A			1.2	V
$V_{BE(ON)}$*	Base-Emitter Voltage	I_C = 3 A V_{CE} = 4 V			1.8	V
h_{FE}*	DC Current Gain	I_C = 1 A V_{CE} = 4 V I_C = 3 A V_{CE} = 4 V	25 10			

* Pulsed: Pulse duration = 300 μs, duty cycle ≤ 2 %
For PNP types voltage and current values are negative.

ISOWATT220 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	0.4		0.7	0.015		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