

New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

COMPLEMENTARY SILICON PLASTIC POWER TRANSISTORS

... designed for use in general purpose power amplifier and switching applications.

FEATURES:

- * Collector-Emitter Sustaining Voltage -
 $V_{CE(sus)}$ = 45V(Min)- BD241, BD242
60V(Min)- BD241A, BD242A
80V(Min)- BD241B, BD242B
100V(Min)- BD241C, BD242C
- * DC Current Gain $hFE = 25(\text{Min}) @ I_C = 1.0A$
- * Current Gain-Bandwidth Product $fT = 3.0 \text{ MHz (Min)} @ I_C = 500mA$

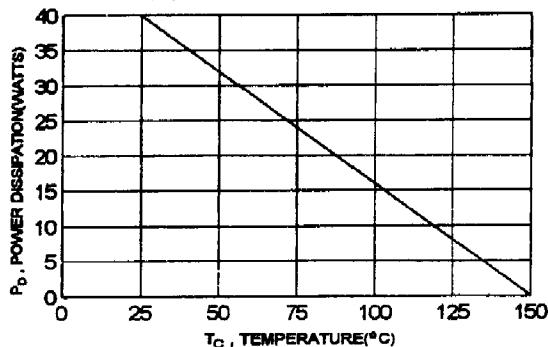
MAXIMUM RATINGS

Characteristic	Symbol	BD241 BD242	BD241A BD242A	BD241B BD242B	BD241C BD242C	Unit
Collector-Emitter Voltage	V_{CE}	45	60	80	100	V
Collector-Base Voltage	V_{CB}	55	70	90	115	V
Emitter-Base Voltage	V_{EB}	5.0				V
Collector Current - Continuous - Peak	I_C	3.0 5.0				A
Base Current	I_B	1.0				A
Total Power Dissipation @ $T_C = 25^\circ C$ Derate above $25^\circ C$	P_D	40 0.32				W W/ $^\circ C$
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +150				$^\circ C$

THERMAL CHARACTERISTICS

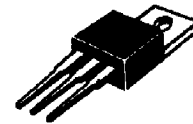
Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta JC}$	3.125	$^\circ C/W$

FIGURE -1 POWER DERATING

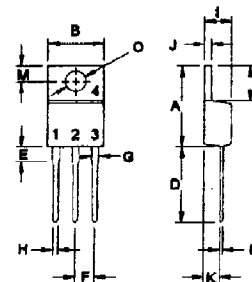


NPN	PNP
BD241	BD242
BD241A	BD242A
BD241B	BD242B
BD241C	BD242C

3 AMPERE
COMPLEMENTARY SILICON
POWER TRANSISTORS
45-100 VOLTS
40 WATTS

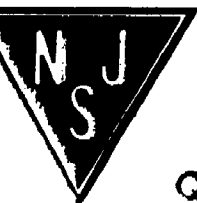


TO-220



PIN 1. BASE
2. COLLECTOR
3. EMITTER
4. COLLECTOR(CASE)

DIM	MILLIMETERS	
	MIN	MAX
A	14.98	15.31
B	9.78	10.42
C	5.01	8.52
D	13.08	14.62
E	3.57	4.07
F	2.42	3.66
G	1.12	1.36
H	0.72	0.98
I	4.22	4.98
J	1.14	1.38
K	2.20	2.97
L	0.33	0.55
M	2.48	2.98
O	3.70	3.90



NJ Semi-Conductors reserves the right to change test conditions, parameters limits and package dimensions without notice information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

ELECTRICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage(1) ($I_C = 30\text{mA}, I_B = 0$)	BD241,BD242 BD241A,BD242A BD241B,BD242B BD241C,BD242C	$V_{CE(sus)}$	45 60 80 100	V
Collector Cutoff Current ($V_{CE} = 30\text{V}, I_B = 0$) ($V_{CE} = 60\text{V}, I_B = 0$)	BD241/42/41A/42A BD241B/42B/41C/42C	I_{CEO}	0.3 0.3	mA
Collector Cutoff Current ($V_{CE} = 45\text{V}, V_{BE} = 0$) ($V_{CE} = 60\text{V}, V_{BE} = 0$) ($V_{CE} = 80\text{V}, V_{BE} = 0$) ($V_{CE} = 100\text{V}, V_{BE} = 0$)	BD241/42 BD241A/42A BD241B/42B BD241C/42C	I_{CES}	0.2 0.2 0.2 0.2	mA
Emitter Cutoff Current ($V_{EB} = 5\text{V}, I_C = 0$)		I_{EBO}	1.0	mA

ON CHARACTERISTICS (1)

DC Current Gain ($V_{CE} = 4.0\text{V}, I_C = 1.0\text{A}$) ($V_{CE} = 4.0\text{V}, I_C = 3.0\text{A}$)	h_{FE}	25 10		
Collector-Emitter Saturation Voltage ($I_C = 3.0\text{A}, I_B = 600\text{mA}$)	$V_{CE(sat)}$		1.2	V
Base-Emitter On Voltage ($I_C = 3.0\text{A}, V_{CE} = 4.0\text{V}$)	$V_{BE(On)}$		1.8	V

DYNAMIC CHARACTERISTICS

Current Gain-Bandwidth Product (2) ($I_C = 500\text{mA}, V_{CE} = 10\text{V}, f = 1\text{MHz}$)	f_T	3.0		MHz
Small-Signal Current Gain ($I_C = 500\text{mA}, V_{CE} = 10\text{V}, f = 1\text{kHz}$)	h_{fe}	20		

(1) Pulse Test: Pulse width = $300\mu\text{s}$, Duty Cycle $\leq 2.0\%$

(2) $f_T = |h_{fe}| \cdot f_{max}$