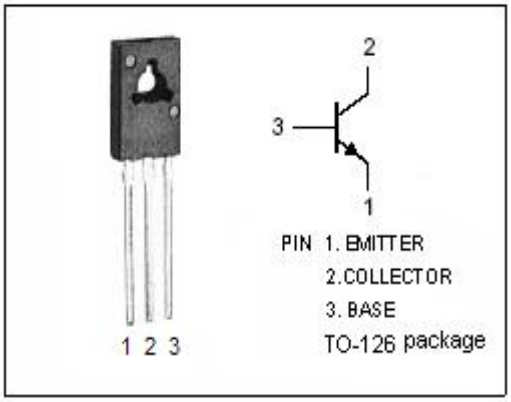
isc Silicon NPN Power Transistor — BDX37

DESCRIPTION

- High Current Capability-I_C= 5A(DC)
- DC Current Gain—
  : h_{FE} = 45-450(Min) @ I_C= 0.5 A
- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 75V(Min.)
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

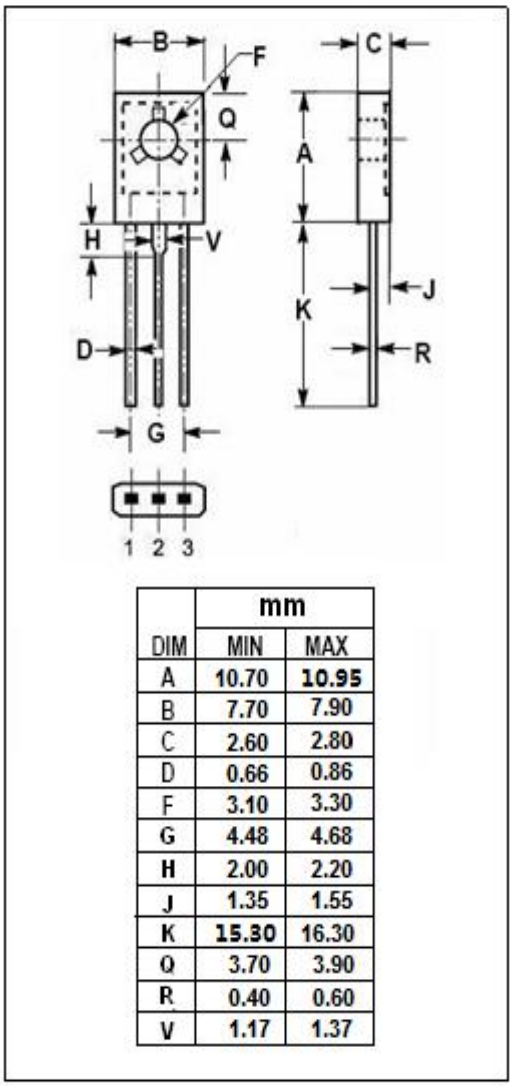


APPLICATIONS

- High-current switching in power applications.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	75	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	5	A
I_{CM}	Collector Current-Peak	10	A
I_{BM}	Base Current-Peak	2	A
P_C	Collector Power Dissipation T_a=25℃	1.25	W
	Collector Power Dissipation T_C≤ 75℃	15	
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-65~150	℃



DIM	mm MIN	MAX
A	10.70	10.95
B	7.70	7.90
C	2.60	2.80
D	0.66	0.86
F	3.10	3.30
G	4.48	4.68
H	2.00	2.20
J	1.35	1.55
K	15.30	16.30
Q	3.70	3.90
R	0.40	0.60
V	1.17	1.37

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance, Junction to Case	5	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	100	℃/W

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ELECTRICAL CHARACTERISTICS

T_C =25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN		MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C= 10mA; I_B= 0	75			V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	I_C= 5 A ;I_B= 0.5A			0.9	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	I_C= 7A ;I_B= 0.7A			1.2	V
$V_{BE(sat)-1}$	Base-Emitter Saturation Voltage	I_C= 5 A ;I_B= 0.5A			1.7	V
$V_{BE(sat)-2}$	Base-Emitter Saturation Voltage	I_C= 7A ;I_B= 0.7A			2.0	V
I_{CBO}	Collector Cutoff Current	V_{CB}= 100V; I_E= 0 V_{CB}= 100V; I_E= 0; T_C= 100℃			0.1 10	μA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5V; I_C= 0			0.1	μA
h_{FE}	DC Current Gain	I_C= 0.5A ; V_{CE}= 10V	45		450	
f_T	Current-Gain—Bandwidth Product	I_C= 0.5 A; V_{CE}= 5V; f= 100MHz		100		MHz
C_{OB}	Collector Capacitance	I_E= 0; V_{CB}= 10V; f_{test} = 1MHz		40		pF
Switching Times						
t_{on}	Turn-On Time	I_C= 1A; I_{B1}= -I_{B2}= 0.1A			100	ns
t_{off}	Turn-Off Time				800	ns
t_{on}	Turn-On Time	I_C= 2A; I_{B1}= -I_{B2}= 0.2A			80	ns
t_{off}	Turn-Off Time				700	ns
t_{on}	Turn-On Time	I_C= 5A; I_{B1}= -I_{B2}= 0.5A			300	ns
t_{off}	Turn-Off Time				500	ns