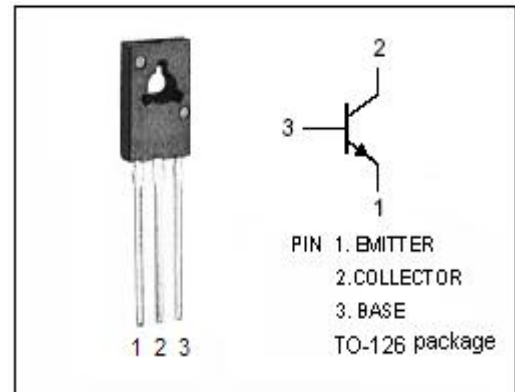


isc Silicon NPN Power Transistor
BDX37
DESCRIPTION

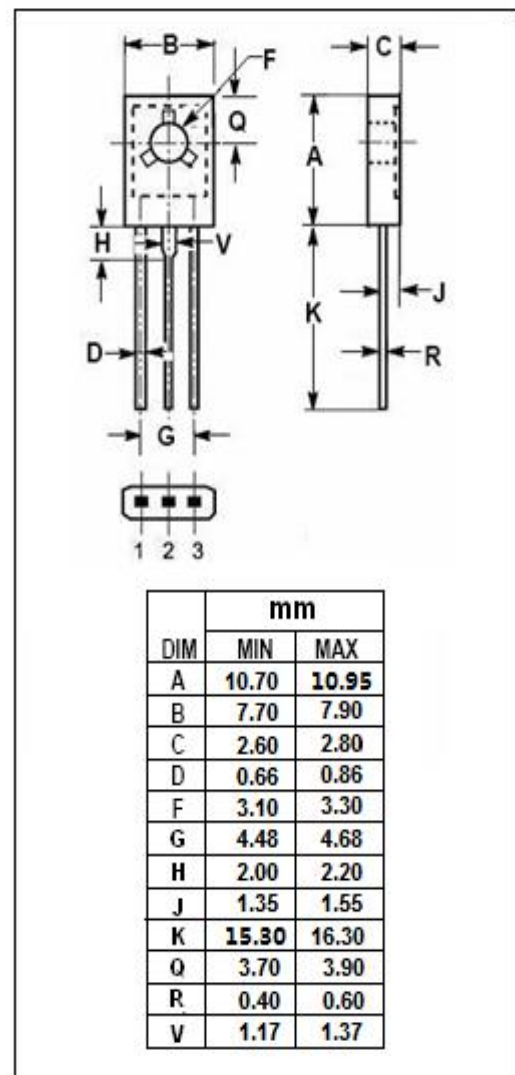
- High Current Capability- $I_C= 5A(DC)$
- DC Current Gain—
: $h_{FE} = 45-450(\text{Min}) @ I_C= 0.5 A$
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO}= 75V(\text{Min.})$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- High-current switching in power applications.


ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

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 $T_a=25^\circ\text{C}$	1.25	W
	Collector Power Dissipation $T_c \leq 75^\circ\text{C}$	15	
T_j	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^\circ\text{C}$


THERMAL CHARACTERISTICS

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

isc Silicon NPN Power Transistor
BDX37
ELECTRICAL CHARACTERISTICS

 T_c =25°C 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°C		0.1 10	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0		0.1	μ A
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

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