

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

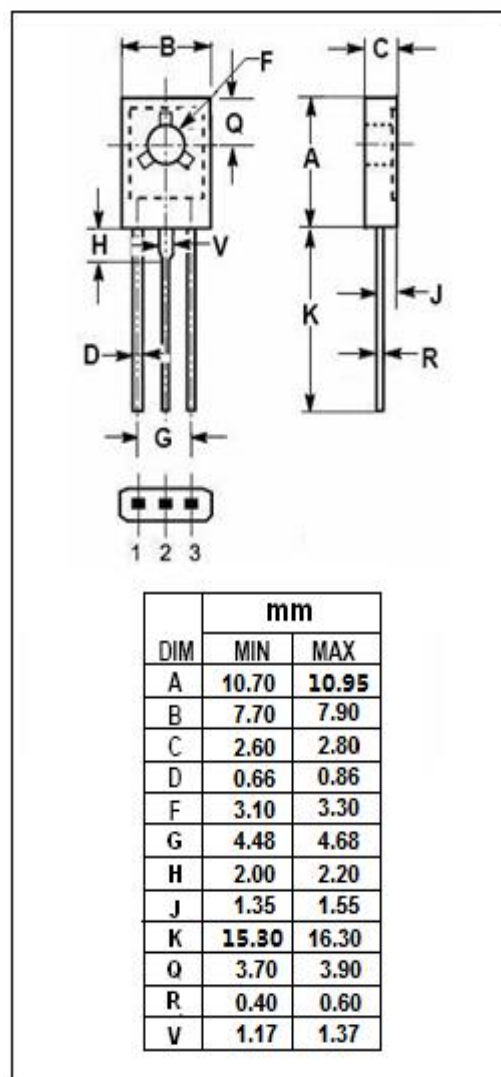
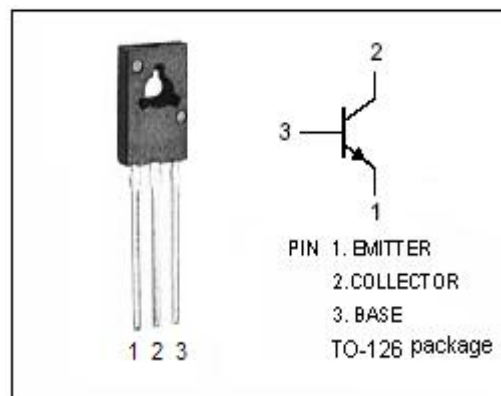
- High-current switching in power applications.

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	$^\circ\text{C/W}$



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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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