

isc Silicon NPN Power Transistor
BD539D
DESCRIPTION

- DC Current Gain -
: $h_{FE} = 40(\text{Min.}) @ I_C = 0.5A$
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 120V(\text{Min})$
- Complement to Type BD540D
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

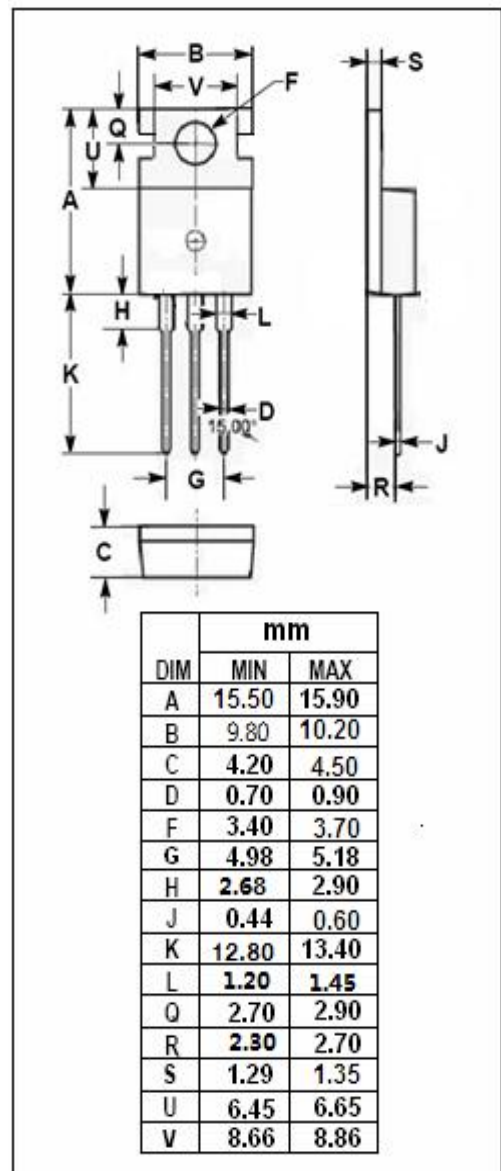
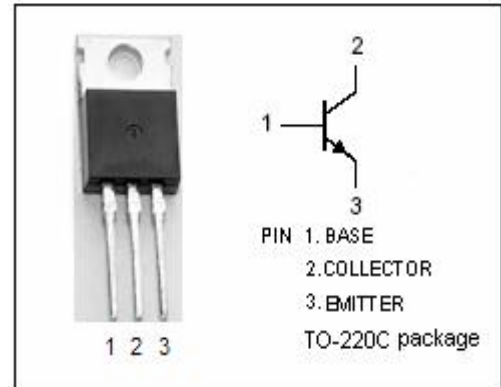
- Designed for use in medium power linear and switching applications.

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	120	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	5	A
P_C	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	2	W
	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	45	
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	2.78	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ\text{C/W}$



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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 = 30mA; I _B = 0	120		V
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = 1A; I _B = 0.125A		0.25	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = 3A; I _B = 0.375A		0.8	V
V _{CE(sat)-3}	Collector-Emitter Saturation Voltage	I _C = 5A; I _B = 1A		1.5	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 3A; V _{CE} = 4V		1.25	V
I _{CEO}	Collector Cutoff Current	V _{CB} = 90V; I _B = 0		0.3	mA
I _{CES}	Collector Cutoff Current	V _{CE} = 120V; V _{BE} = 0		0.2	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0		1.0	mA
h _{FE-1}	DC Current Gain	I _C = 0.5A; V _{CE} = 4V	40		
h _{FE-2}	DC Current Gain	I _C = 1A; V _{CE} = 4V	30		
h _{FE-3}	DC Current Gain	I _C = 3A; V _{CE} = 4V	12		

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