

**isc Silicon NPN Power Transistor**
**BD539C**
**DESCRIPTION**

- DC Current Gain -  
:  $h_{FE} = 40(\text{Min.}) @ I_C = 0.5A$
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 100V(\text{Min})$
- Complement to Type BD540C
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

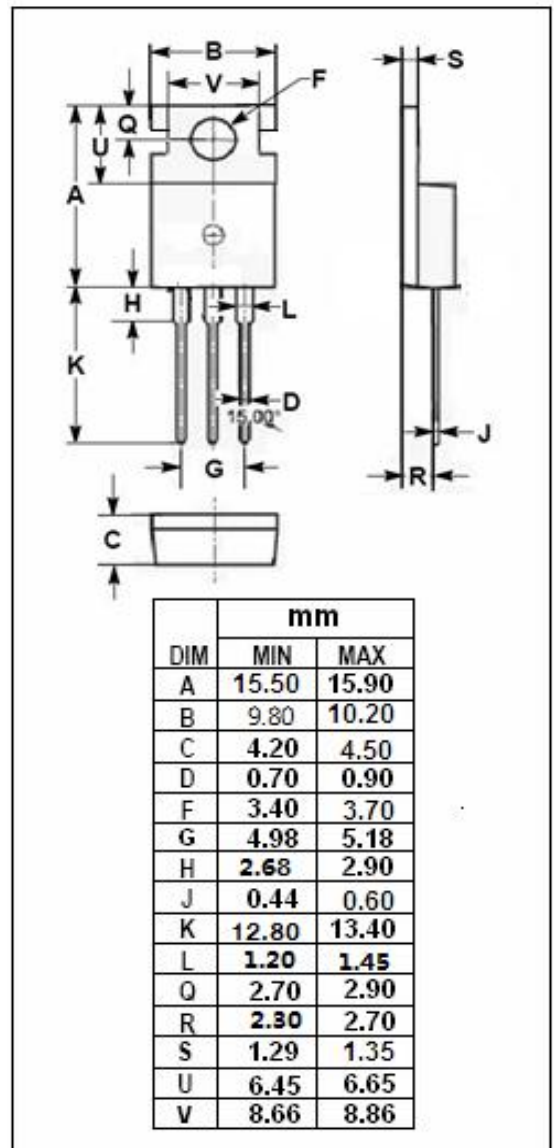
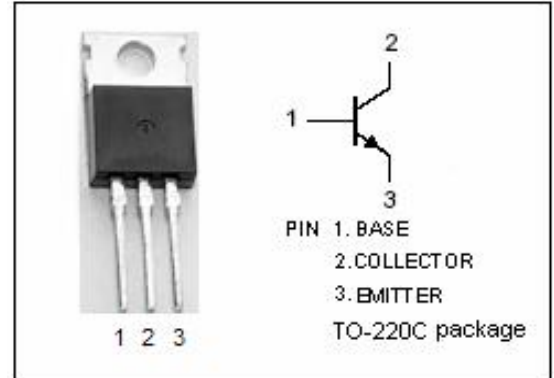
- Designed for use in medium power linear and switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	100	V
$V_{CEO}$	Collector-Emitter Voltage	100	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	$^\circ\text{C/W}$



## isc Silicon NPN Power Transistor

BD539C

## ELECTRICAL CHARACTERISTICS

 $T_C=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C= 30\text{mA}; I_B= 0$	100		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C= 1\text{A}; I_B= 0.125\text{A}$		0.25	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C= 3\text{A}; I_B= 0.375\text{A}$		0.8	V
$V_{CE(sat)-3}$	Collector-Emitter Saturation Voltage	$I_C= 5\text{A}; I_B= 1\text{A}$		1.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C= 3\text{A}; V_{CE}= 4\text{V}$		1.25	V
$I_{CEO}$	Collector Cutoff Current	$V_{CB}= 60\text{V}; I_B= 0$		0.3	mA
$I_{CES}$	Collector Cutoff Current	$V_{CE}= 100\text{V}; V_{BE}= 0$		0.2	mA
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}= 5\text{V}; I_C= 0$		1.0	mA
$h_{FE-1}$	DC Current Gain	$I_C= 0.5\text{A}; V_{CE}= 4\text{V}$	40		
$h_{FE-2}$	DC Current Gain	$I_C= 1\text{A}; V_{CE}= 4\text{V}$	30		
$h_{FE-3}$	DC Current Gain	$I_C= 3\text{A}; V_{CE}= 4\text{V}$	12		

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