

Silicon NPN Power Transistor

BD539

DESCRIPTION

- DC Current Gain -
 : $h_{FE} = 40(\text{Min.}) @ I_C = 0.5A$
- Collector-Emitter Breakdown Voltage -
 : $V_{(BR)CEO} = 40V(\text{Min})$
- Complement to Type BD540

APPLICATIONS

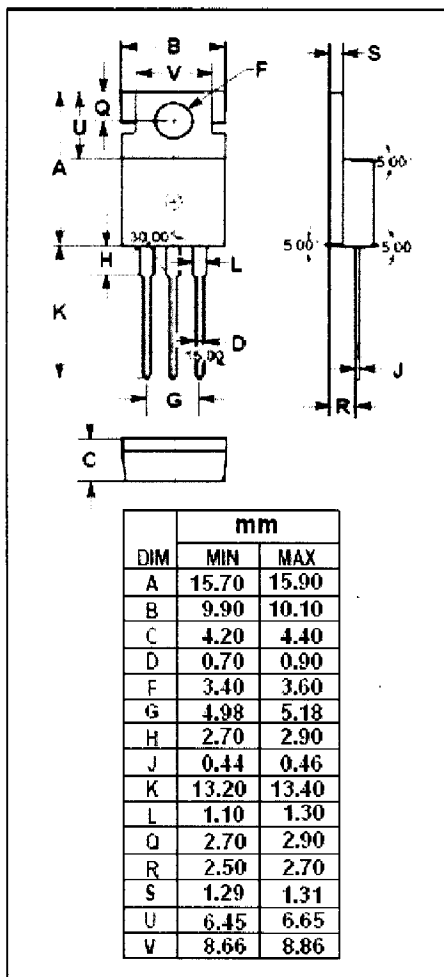
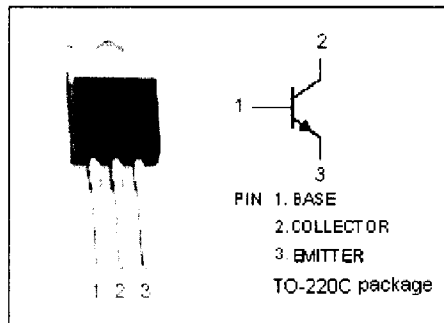
- Designed for use in medium power linear and switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	40	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

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

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=30\text{mA}; I_B=0$	40		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	$V_{CB}=30\text{V}; I_B=0$		0.3	mA
I_{CES}	Collector Cutoff Current	$V_{CE}=40\text{V}; V_{BE}=0$		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		