

**isc Silicon NPN Power Transistor**

**BD439**

**DESCRIPTION**

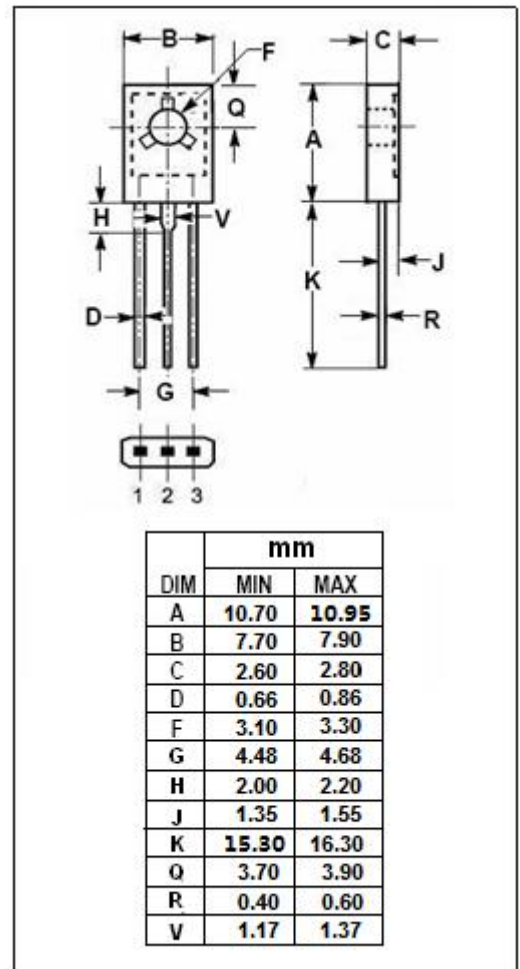
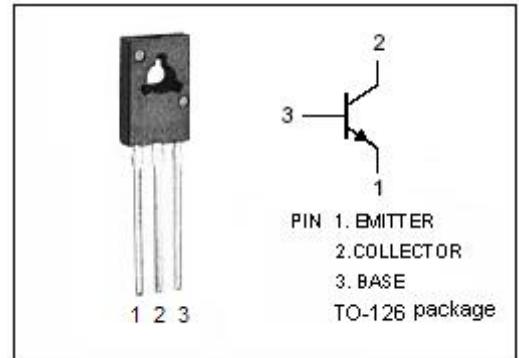
- Collector-Emitter Sustaining Voltage -  
:  $V_{CEO(SUS)} = 60V(\text{Min})$
- Complement to type BD440

**APPLICATIONS**

- Designed for medium power linear and switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	60	V
$V_{CES}$	Collector-Emitter Voltage	60	V
$V_{CEO}$	Collector-Emitter Voltage	60	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	4	A
$I_{CM}$	Collector Current-Pulse	7	A
$I_B$	Base Current-Continuous	1	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	36	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65~150	$^\circ\text{C}$



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**ELECTRICAL CHARACTERISTICS**

T<sub>C</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEQ(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 30mA; I <sub>B</sub> = 0	60			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 2A; I <sub>B</sub> = 0.2A			0.8	V
V <sub>BE(on)-1</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 10mA; V <sub>CE</sub> = 5V		0.58		V
V <sub>BE(on)-2</sub>	Base-Emitter On Voltage	I <sub>C</sub> = 2A; V <sub>CE</sub> = 1V			1.5	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 60V; I <sub>E</sub> = 0			100	μ A
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 60V; V <sub>BE</sub> = 0			100	μ A
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0			1	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = 10mA; V <sub>CE</sub> = 5V	20			
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = 0.5A; V <sub>CE</sub> = 1V	40			
h <sub>FE-3</sub>	DC Current Gain	I <sub>C</sub> = 2A; V <sub>CE</sub> = 1V	25			
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>C</sub> = 0.25A; V <sub>CE</sub> = 1V	3			MHz