

BD439 BD441 NPN
BD440 BD442 PNP

**COMPLEMENTARY SILICON
POWER TRANSISTORS**



TO-126 CASE

Central™

Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR BD439, BD440 series types are Complementary Silicon Power Transistors, manufactured by the epitaxial base process, designed for medium power, low speed switching applications.

MARKING: FULL PART NUMBER

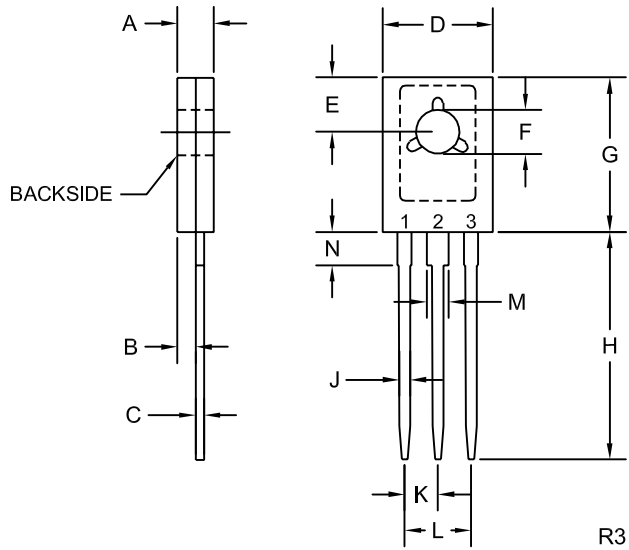
MAXIMUM RATINGS: ($T_C=25^\circ\text{C}$)

	SYMBOL	BD439 BD440	BD441 BD442	UNITS
Collector-Base Voltage	V_{CBO}	60	80	V
Collector-Emitter Voltage	V_{CES}	60	80	V
Collector-Emitter Voltage	V_{CEO}	60	80	V
Emitter-Base Voltage	V_{EBO}		5.0	V
Continuous Collector Current	I_C		4.0	A
Peak Collector Current ($\leq 10\text{ms}$)	I_{CM}		7.0	A
Base Current	I_B		1.0	A
Power Dissipation	P_D		36	W
Operating and Storage Junction Temperature	T_J, T_{stg}		-65 to +150	$^\circ\text{C}$
Thermal Resistance	θ_{JA}		100	$^\circ\text{C/W}$
Thermal Resistance	θ_{JC}		3.5	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS: ($T_C=25^\circ\text{C}$)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=\text{Rated } V_{CBO}$		100	μA
I_{CES}	$V_{CE}=\text{Rated } V_{CEO}$		100	μA
I_{EBO}	$V_{EB}=5.0\text{V}$		1.0	mA
BV_{CEO}	$I_C=100\text{mA}$ (BD439, BD440)	60		V
BV_{CEO}	$I_C=100\text{mA}$ (BD441, BD442)	80		V
$V_{CE(\text{SAT})}$	$I_C=2.0\text{A}, I_B=200\text{mA}$		0.8	V
$V_{BE(\text{ON})}$	$V_{CE}=1.0\text{V}, I_C=2.0\text{A}$		1.5	V
h_{FE}	$V_{CE}=5.0\text{V}, I_C=10\text{mA}$ (BD439, BD440)	20		
h_{FE}	$V_{CE}=5.0\text{V}, I_C=10\text{mA}$ (BD441, BD442)	15		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=500\text{mA}$	40		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=2.0\text{A}$ (BD439, BD440)	25		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=2.0\text{A}$ (BD441, BD442)	15		
f_T	$V_{CE}=1.0\text{V}, I_C=250\text{mA}$	3.0		MHz

TO-126 CASE - MECHANICAL OUTLINE



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.094	0.110	2.40	2.80
B	0.050		1.27	
C	0.015	0.030	0.38	0.75
D	0.291	0.335	7.40	8.50
E	0.148		3.75	
F	0.118	0.134	3.00	3.40
G	0.413	0.472	10.50	12.00
H	0.618		15.70	
J	0.024	0.035	0.62	0.90
K	0.089		2.25	
L	0.177		4.50	
M	0.045	0.055	1.14	1.40
N	0.083		2.10	

LEAD CODE:

- 1) EMITTER
- 2) COLLECTOR
- 3) BASE

MARKING:

FULL PART NUMBER

TO-126 (REV:R3)

R1 (2-February 2009)