

BD439/441

Medium Power Linear and Switching Applications

Complement to BD440, BD442 respectively



NPN Epitaxial Silicon Transistor

1. Emitter 2.Collector 3.Base

Absolute Maximum Ratings $T_C=25^{\circ}C$ unless otherwise noted

Symbol	Parameter	Value	Units
V _{CBO}	Collector-Base Voltage		
	: BD439	60	V
	: BD441	80	V
V _{CES}	Collector-Emitter Voltage		
	: BD439	60	V
	: BD441	80	V
V _{CEO}	Collector-Emitter Voltage		
	: BD439	60	V
	: BD441	80	V
V _{EBO}	Emitter-Base Voltage	5	V
I _C	Collector Current (DC)	4	Α
I _{CP}	*Collector Current (Pulse)	7	Α
I _B	Base Current	1	Α
P _C	Collector Dissipation (T _C =25°C)	36	W
T _J	Junction Temperature	150	°C
T _{STG}	Storage Temperature	- 65 ~ 150	°C

Electrical Characteristics $T_C=25$ °C unless otherwise noted

Symbol	Paramete	er	Test Condition	Min.	Тур.	Max.	Units
V _{CEO} (sus)	* Collector-Emitter Sustaining	ng Voltage					
		: BD439	$I_C = 100 \text{mA}, I_B = 0$	60			V
		: BD441		80			V
I _{CBO}	Collector Cut-off Current	: BD439	$V_{CB} = 60V, I_E = 0$			100	μΑ
		: BD441	$V_{CB} = 80V, I_{E} = 0$			100	μΑ
I _{CES}	Collector Cut-off Current	: BD439	$V_{CE} = 60V, V_{BE} = 0$			100	μΑ
		: BD441	$V_{CE} = 80V, V_{BE} = 0$			100	μΑ
I _{EBO}	Emitter Cut-off Current		$V_{EB} = 5V, I_{C} = 0$			1	mA
h _{FE}	* DC Current Gain	: BD439	$V_{CE} = 5V, I_{C} = 10mA$	20	130		
		: BD441		15	130		
		: BD439	$V_{CE} = 1V, I_{C} = 500 \text{mA}$	40	140		
		: BD441		40	140		
		: BD439	$V_{CF} = 1V, I_{C} = 2A$	25			
		: BD441		15			
V _{CE} (sat)	* Collector-Emitter Saturation	on Voltage	$I_C = 2A, I_B = 0.2A$			0.8	V
V _{BF} (on)	* Base-Emitter ON Voltage		$V_{CF} = 5V, I_{C} = 10mA$		0.58		V
,			$V_{CE} = 1V, I_{C} = 2A$			1.5	V
f⊤	Current Gain Bandwidth Pi	oduct	$V_{CE} = 1V, I_{C} = 250 \text{mA}$	3			MHz

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Typical Characteristics

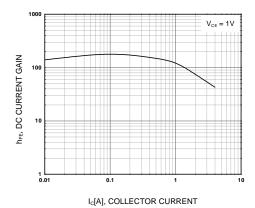


Figure 1. DC current Gain

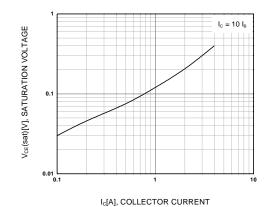


Figure 2. Collector-Emitter Saturation Voltage

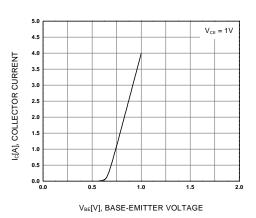


Figure 3. Base-Emitter On Voltage

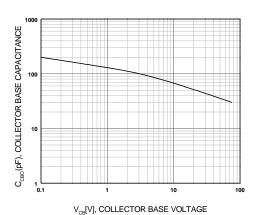


Figure 4. Collector-Base Capacitance

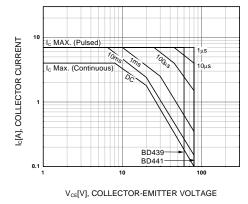


Figure 5. Safe Operating Area

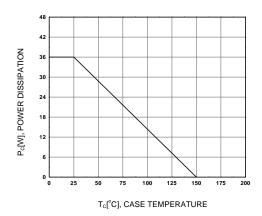
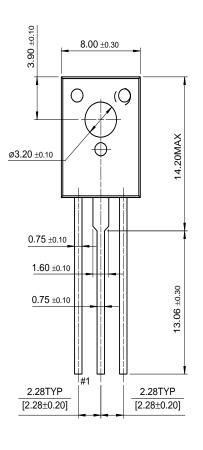


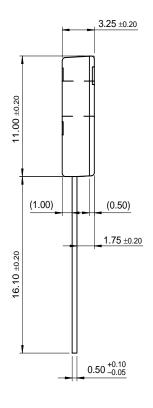
Figure 6. Power Derating

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Package Demensions

TO-126





Dimensions in Millimeters

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Rev. H2

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