POWER SKY (H.K.) LTD.

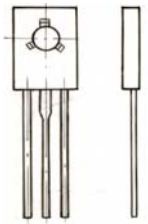
TO-126 Plastic-Encapsulate Transistors

BD439/441 TRANSISTOR (NPN)

FEATURES

Amplifier and switching applications

TO-126



1. EMITTER
2. COLLECTOR
3. BASE

1 2 3

MAXIMUM RATINGS(T_A=25℃ unless otherwise noted)

Symbol	Parameter		Value	Units
V_{CBO}	Collector-Base Voltage	BD439	60	V
		BD441	80	
V_{CEO}	Collector-Emitter Voltage	BD439	60	V
		BD441	80	
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current –Continuous		4	A
P_C	Collector Power Dissipation		1.25	W
T_J	Junction Temperature		150	℃
T_{stg}	Storage Temperature		-55-150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions		MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA,I_E=0	BD439	60			V
			BD441	80			
Collector-emitter breakdown voltage	$V_{CEO(SUS)}$(1)	I_C=100mA,I_B=0	BD439	60			V
			BD441	80			
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA,I_C=0		5			V
Collector cut-off current	I_{CBO}	V_{CB}=60V,I_E=0	BD439			100	μA
		V_{CB}=80V,I_E=0	BD441				
Emitter cut-off current	I_{EBO}	V_{EB}=5V,I_E=0				1	mA
DC current gain	$h_{FE(1)}$(1)	V_{CE}=1V,I_C=500mA		40		475	
	$h_{FE(2)}$(1)	V_{CE}=5V,I_C=10mA	BD439	20			
			BD441	15			
	$h_{FE(3)}$(1)	V_{CE}=1V,I_C=2A	BD439	25			
			BD441	15			
Collector-emitter saturation voltage	$V_{CE(sat)}$(1)	I_C=3A,I_B=0.3A				0.8	V
Base-emitter voltage	V_{BE}(1)	V_{CE}=1V,I_C=2A				1.1	V
Transition frequency	f_T	V_{CE}=1V,I_C=250mA		3			MHz

(1)Pulse test

Typical Characteristics BD439，441

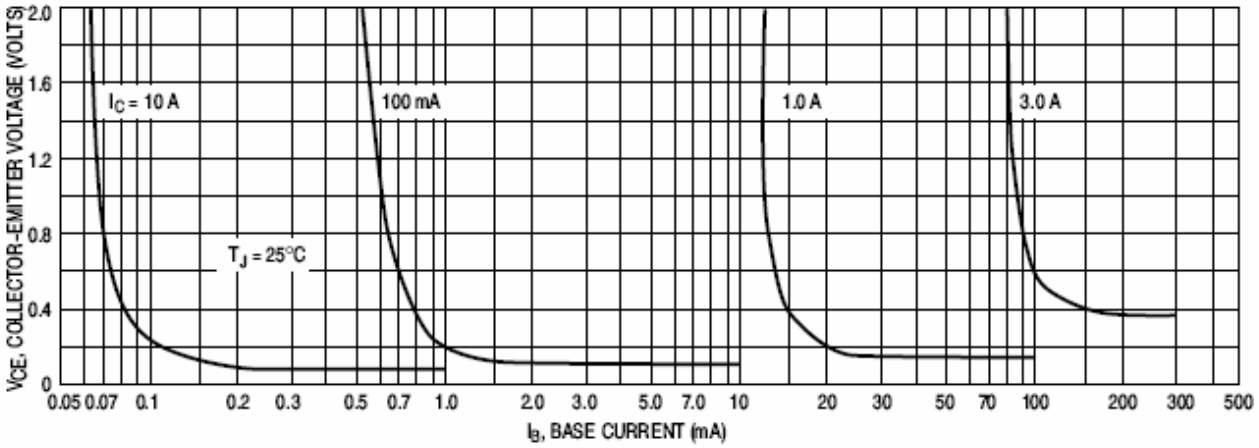


Figure 1. Collector Saturation Region

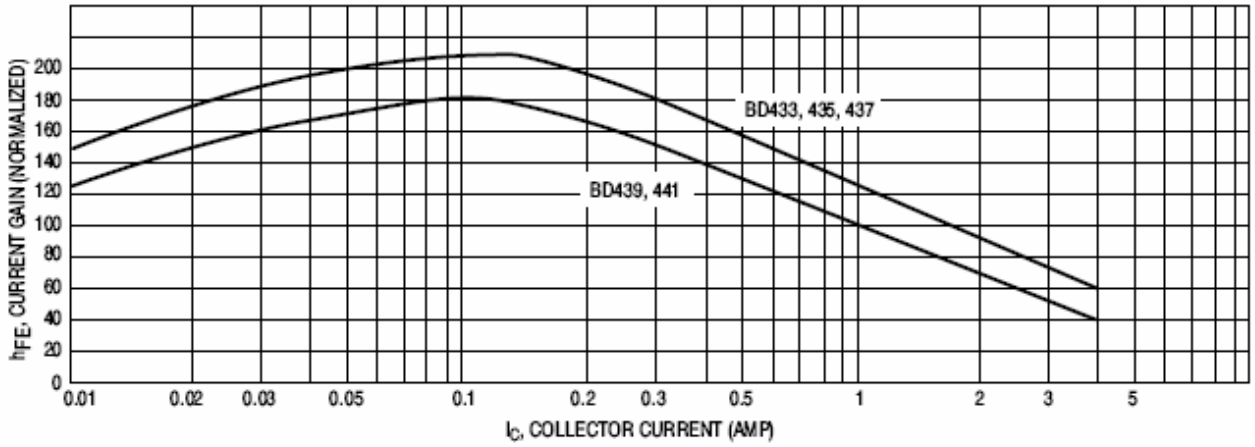


Figure 2. Current Gain

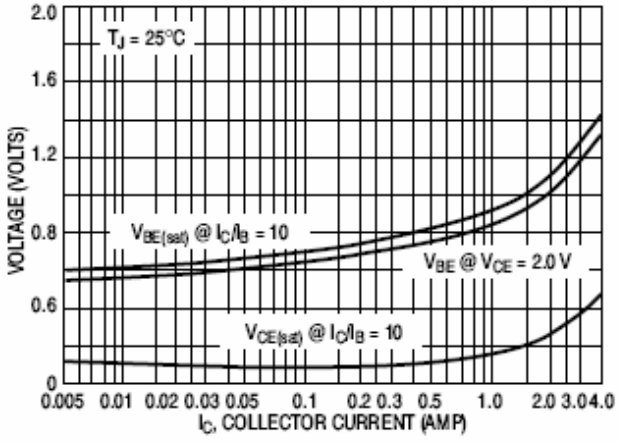


Figure 3. "On" Voltage

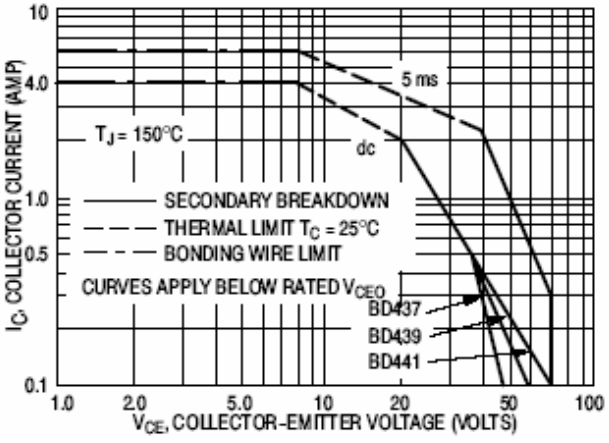


Figure 4. Active Region Safe Operating Area