

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

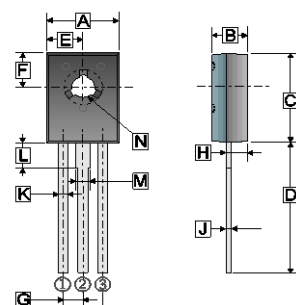
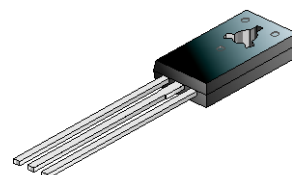
FEATURES

- Amplifier and Switching Applications

MARKING

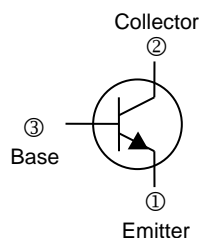


TO-18



ORDER INFORMATION

Part Number	Type
BD439 BD441	Lead (Pb)-free
BD439-C BD441-C	Lead (Pb)-free and Halogen-free



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	7.40	7.80	H	1.10	1.50
B	2.50	2.90	J	0.45	0.60
C	10.60	11.00	K	0.66	0.86
D	15.30	15.70	L	2.10	2.30
E	3.70	3.90	M	1.17	1.37
F	3.90	4.10	N	3.00	3.20
G	2.29 TYP.				

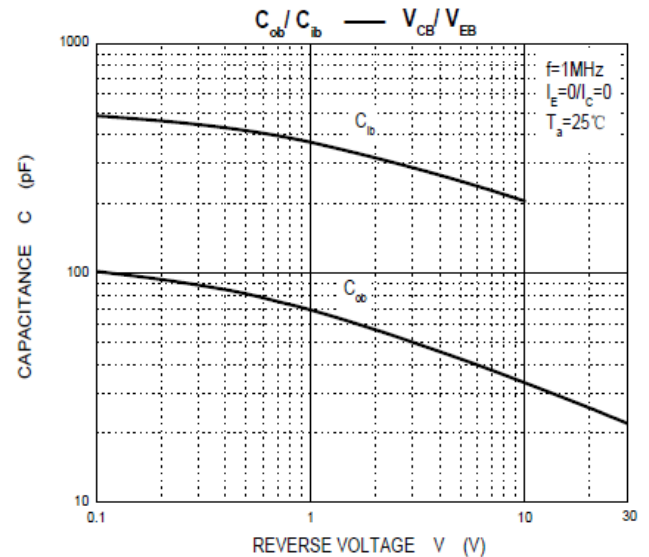
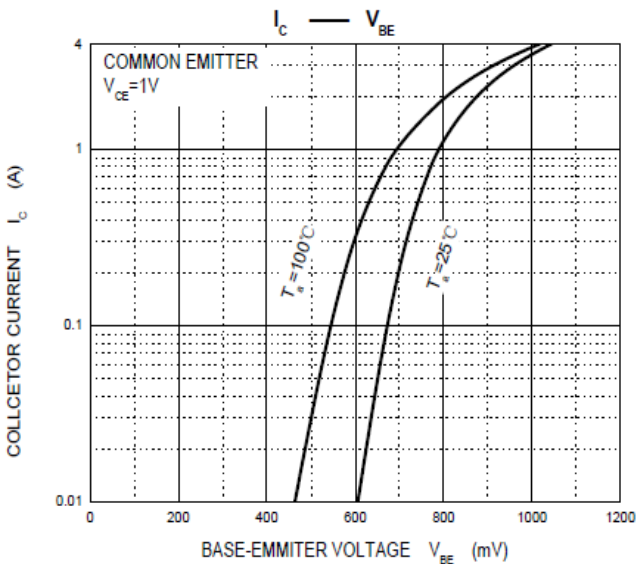
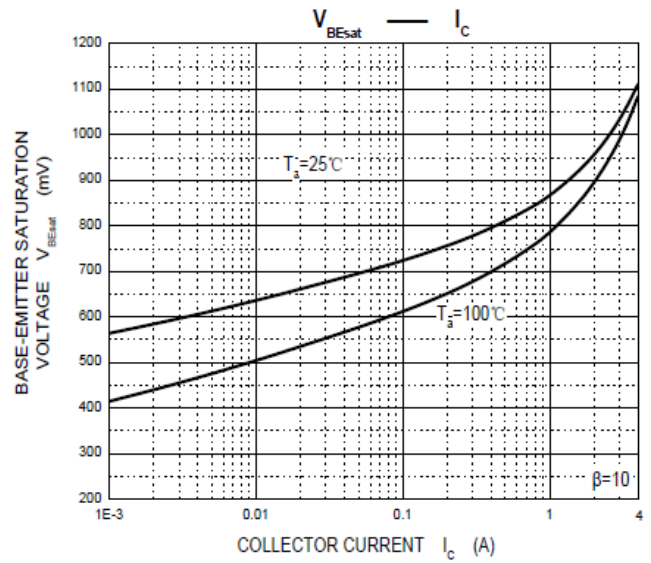
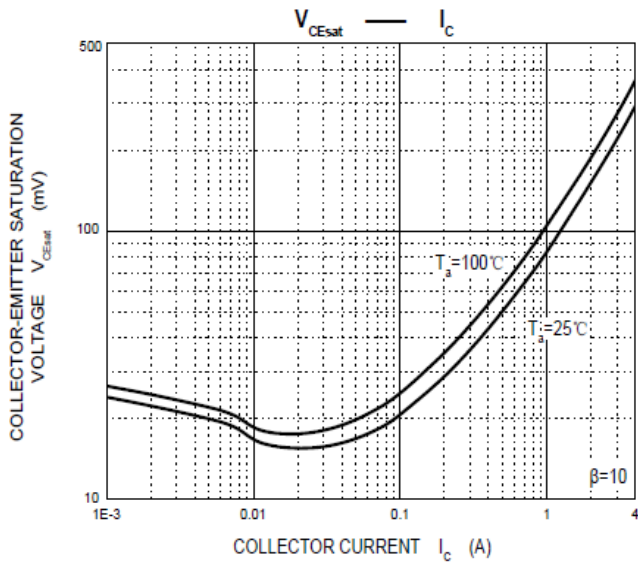
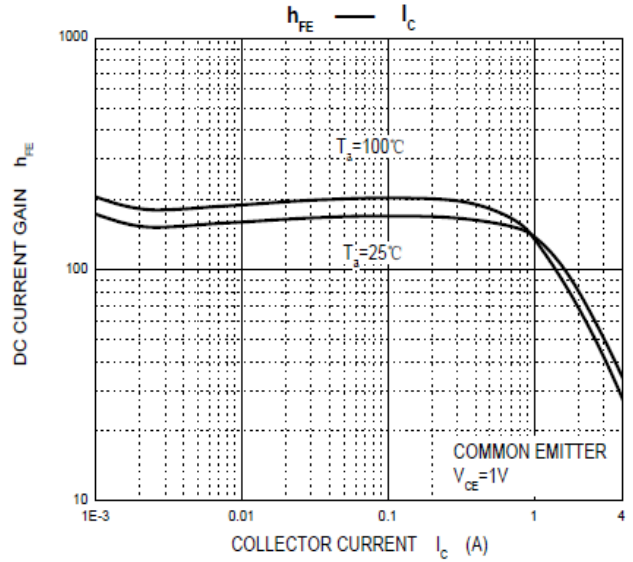
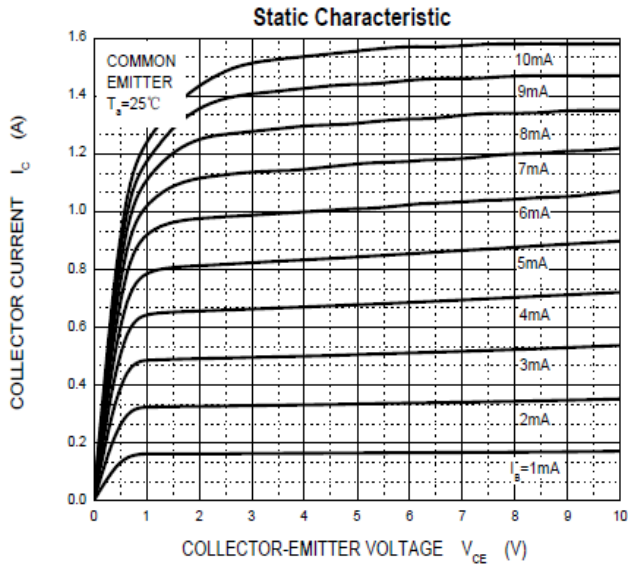
ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector-Base Voltage	V _{CBO}	60	V
		80	
Collector-Emitter Voltage	V _{CEO}	60	V
		80	
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current-Continuous	I _C	4	A
Collector Power Dissipation	P _C	1.5	W
Thermal Resistance from Junction-Ambient	R _{θJA}	83	°C/W
Operation Junction & Storage Temperature Range	T _J , T _{STG}	-55~150	°C

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	BD439	$V_{(BR)CBO}$	60	-	-	V	$I_C=100\mu\text{A}, I_E=0$
	BD441		80	-	-		
Collector-Emitter Breakdown Voltage	BD439	$V_{(BR)CEO}$	60	-	-	V	$I_C=100\text{mA}, I_B=0$
	BD441		80	-	-		
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	5	-	-	V	$I_E=100\mu\text{A}, I_C=0$
Collector Cut-off Current	BD439	I_{CBO}	-	-	100	μA	$V_{CB}=60\text{V}, I_E=0$
	BD441		-	-	100		$V_{CB}=80\text{V}, I_E=0$
Emitter Cut-off Current		I_{EBO}	-	-	1	mA	$V_{EB}=5\text{V}, I_E=0$
DC Current Gain		h_{FE}	40	-	475		$V_{CE}=1\text{V}, I_C=500\text{mA}$
DC Current Gain	BD439		20	-	-		$V_{CE}=5\text{V}, I_C=10\text{mA}$
	BD441		15	-	-		
	BD439		25	-	-		$V_{CE}=1\text{V}, I_C=2\text{A}$
	BD441		15	-	-		
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	-	-	0.8	V	$I_C=3\text{A}, I_B=0.3\text{A}$
Base-Emitter Saturation Voltage		V_{BE}	-	-	1.1	V	$V_{CE}=1\text{V}, I_C=2\text{A}$
Transition Frequency		f_T	-	3	-	MHz	$V_{CE}=1\text{V}, I_C=250\text{mA}$

TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS

