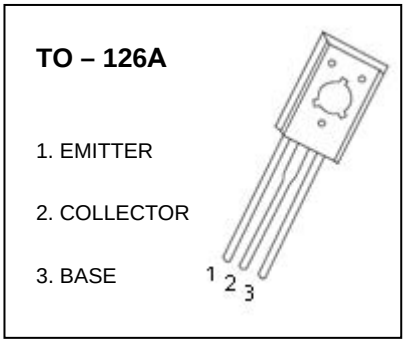
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

TO-126A Plastic-Encapsulate Transistors

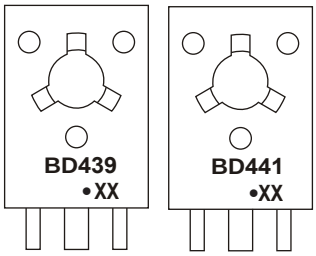
BD439 / BD441 TRANSISTOR (NPN)



FEATURES

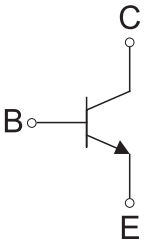
- Amplifier and Switching Applications
- Complement To BD440, BD442

MARKING



BD439,BD441=Device code
Solid dot = Green molding compound device, if none, the normal device
XX=Code

Equivalent Circuit



ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
BD439	TO-126A	Bulk	200pcs/Bag
BD441	TO-126A	Bulk	200pcs/Bag
BD439-TU	TO-126A	Tube	60pcs/Tube
BD441-TU	TO-126A	Tube	60pcs/Tube

MAXIMUM RATINGS(T_a=25℃ unless otherwise noted)

Symbol	Parameter		Value	Units
V_{CBO}	Collector-Base Voltage	BD439 BD441	60 80	V
V_{CEO}	Collector-Emitter Voltage	BD439 BD441	60 80	V
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current –Continuous		4	A
P_C	Collector Power Dissipation		1.5	W
$R_{\Theta JA}$	Thermal Resistance from Junction to Ambient		83	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range		-55-150	℃

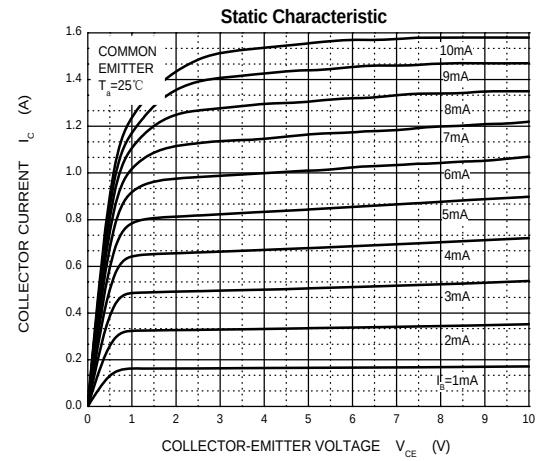
ELECTRICAL CHARACTERISTICS

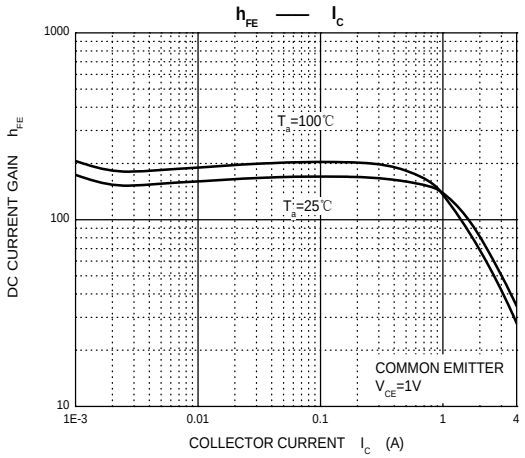
T_a=25℃ unless otherwise specified

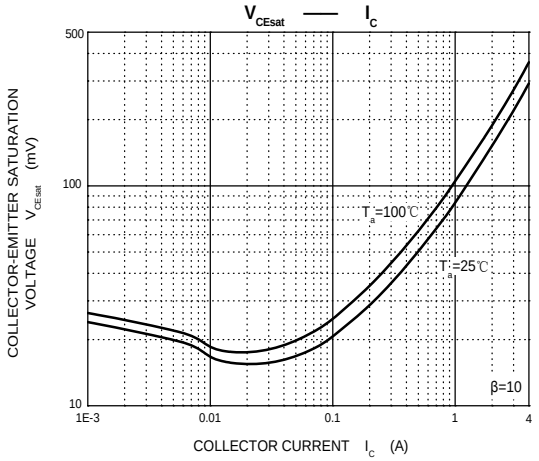
Parameter	Symbol	Test conditions		Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA,I_E=0	BD439 BD441	60 80			V
Collector-emitter breakdown voltage	$V_{CEO(SUS)}$ (1)	I_C=100mA,I_B=0	BD439 BD441	60 80			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA,I_C=0		5			V
Collector cut-off current	I_{CBO}	V_{CB}=60V,I_E=0 V_{CB}=80V,I_E=0	BD439 BD441			100	μA
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 BD441	20 15			
	$h_{FE(3)}$ (1)	V_{CE}=1V,I_C=2A	BD439 BD441	25 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

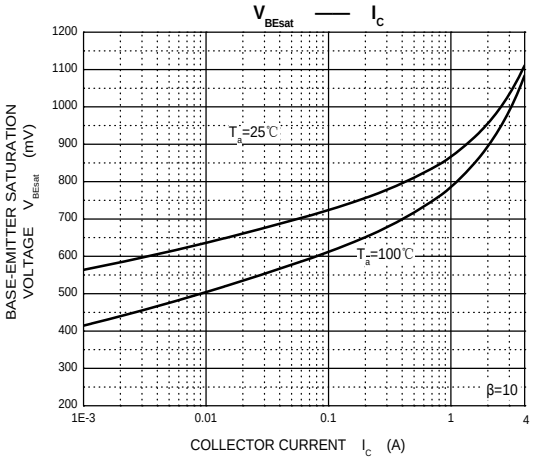
(1)Pulse test

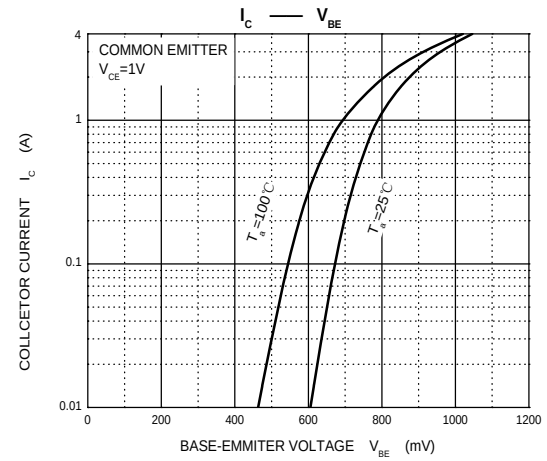
Typical Characteristics

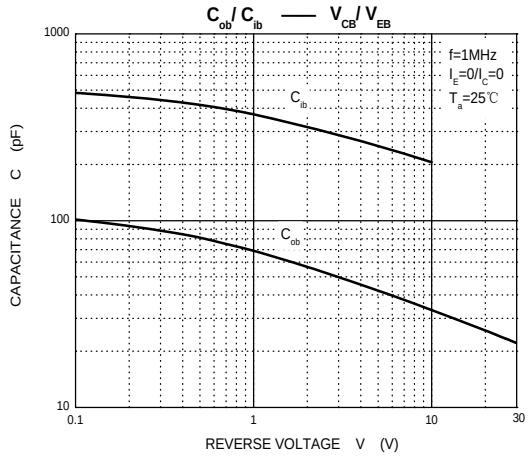


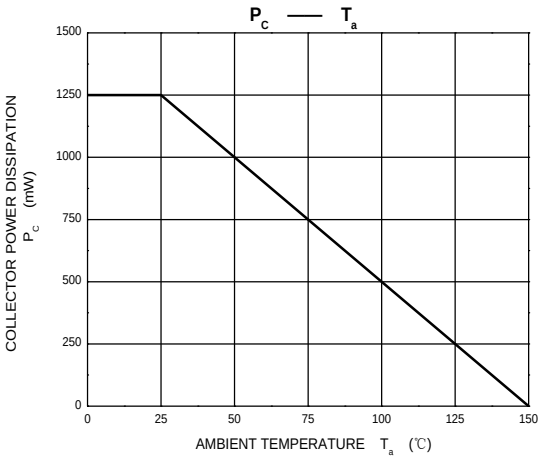




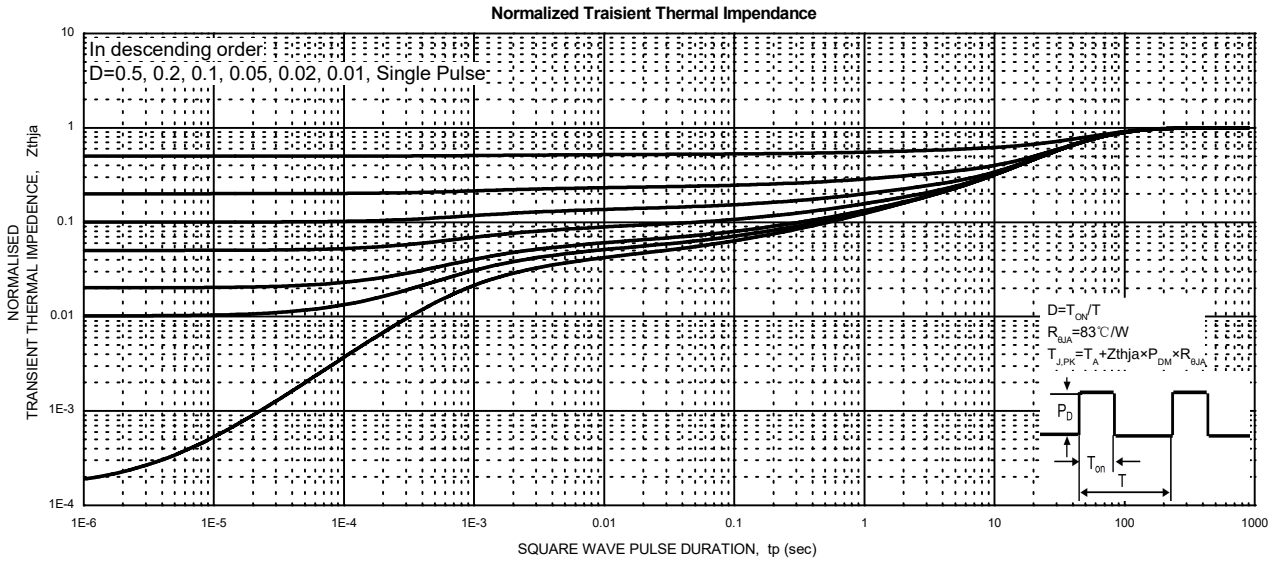


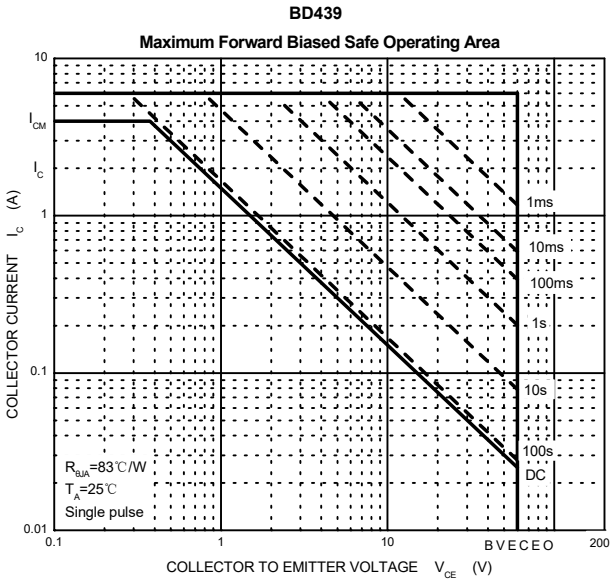


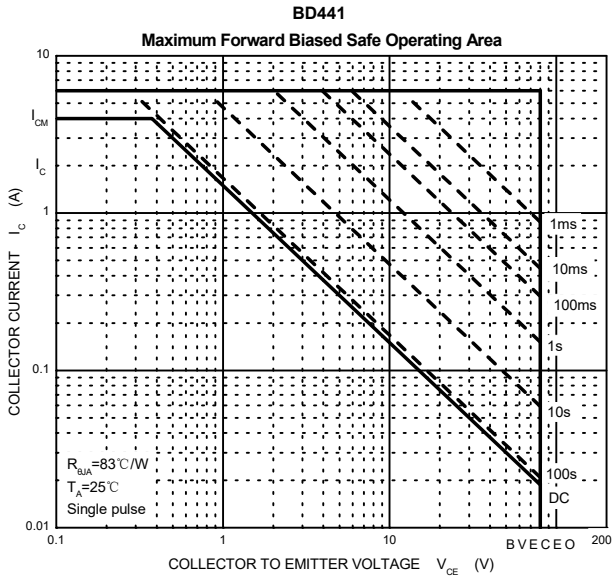




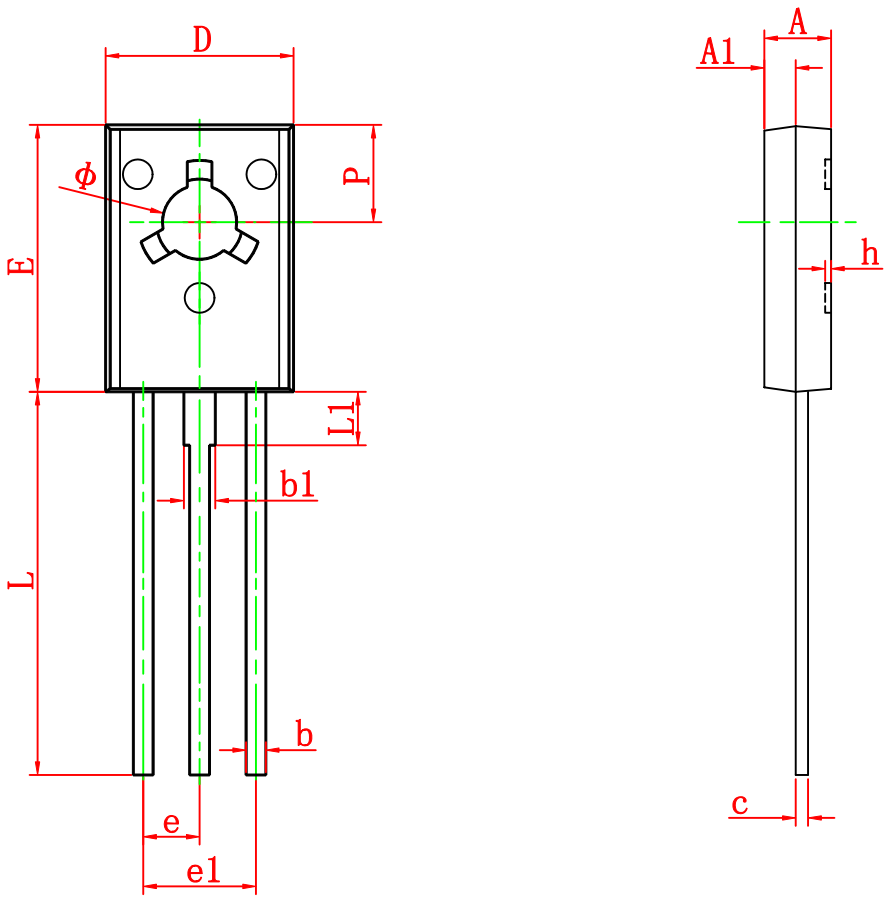
Typical Characteristics







TO-126A Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.500	2.900	0.098	0.114
A1	1.100	1.500	0.043	0.059
b	0.660	0.860	0.026	0.034
b1	1.170	1.370	0.046	0.054
c	0.300	0.600	0.012	0.024
D	7.400	7.800	0.291	0.307
E	10.600	11.000	0.417	0.433
e	2.290 TYP		0.090 TYP	
e1	4.480	4.680	0.176	0.184
h	0.000	0.300	0.000	0.012
L	15.300	15.700	0.602	0.618
L1	2.100	2.300	0.083	0.091
P	3.900	4.100	0.154	0.161
Φ	3.000	3.200	0.118	0.126