



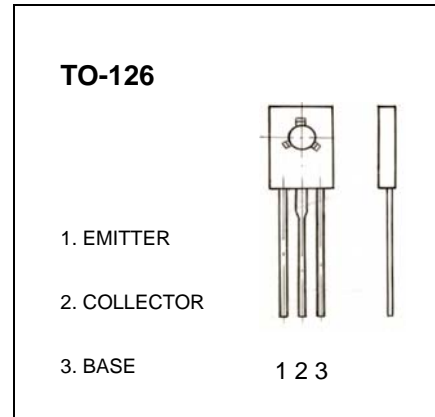
WAN LI ELECTRONICS (WUXI) CO.,LTD

TO-126 Plastic-Encapsulate Transistors

BD135/BD137/BD139 TRANSISTOR (NPN)

FEATURES

- High Current(1.5A)
- Low Voltage(80V)



MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value			Units
		BD135	BD137	BD139	
V_{CB0}	Collector-Base Voltage	45	60	80	V
V_{CE0}	Collector-Emitter Voltage	45	60	80	V
V_{EB0}	Emitter-Base Voltage	5			V
I_C	Collector Current -Continuous	1.5			A
P_C	Collector power dissipation	1.25			W
T_J	Junction Temperature	150			$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55-150			$^{\circ}\text{C}$

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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CB0}$	$I_C=100\mu\text{A}, I_E=0$	BD135	45		V
			BD137	60		
			BD139	80		
Collector-emitter breakdown voltage	$V_{(BR)CE0^*}$	$I_C=30\text{mA}, I_B=0$	BD135	45		V
			BD137	60		
			BD139	80		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	5			V
Collector cut-off current	I_{CB0}	$V_{CB}=30\text{V}, I_E=0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			10	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=2\text{V}, I_C=5\text{mA}$	25			
	$h_{FE(2)}$	$V_{CE}=2\text{V}, I_C=150\text{mA}$	40		250	
	$h_{FE(3)}$	$V_{CE}=2\text{V}, I_C=500\text{mA}$	25			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			0.5	V
Base-emitter voltage	V_{BE}	$V_{CE}=2\text{V}, I_C=500\text{mA}$			1	V

*PULSE TEST

CLASSIFICATION OF $h_{FE(2)}$

Rank	6	10	16
Range	40-100	63-160	100-250

Typical Characteristics

BD135/BD137/BD139

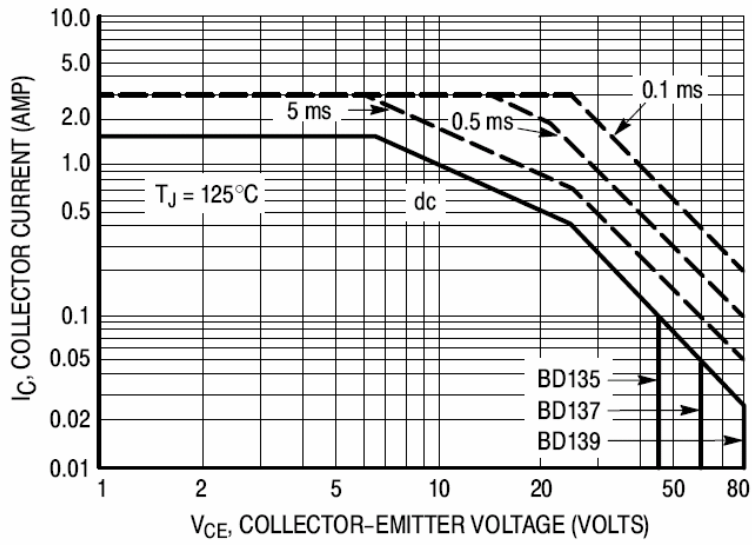


Figure 1. Active-Region Safe Operating Area