

TO-126 Plastic-Encapsulate Transistors

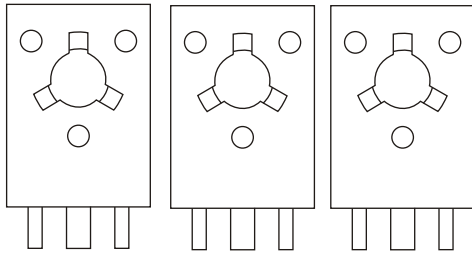
BD139

TRANSISTOR (NPN)

FEATURES

- High Current
- Complement To BD140

MARKING



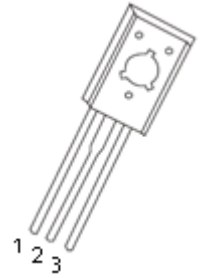
,BD139=Device code

Solid dot= Green molding compound device,
if none, the normal device

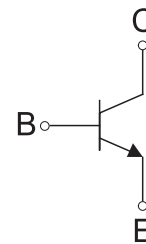
XX=Code

TO – 126

1. EMITTER
2. COLLECTOR
3. BASE



Equivalent Circuit



ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
BD139	TO-126	Bulk	200pcs/Bag

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	BD139	80
V _{CEO}	Collector-Emitter Voltage	BD139	40
V _{EBO}	Emitter-Base Voltage	5	V
I _C	Collector Current	0.6	A
P _C	Collector Power Dissipation	1.25	W
R _{θJA}	Thermal Resistance From Junction To Ambient	100	°C/W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~+150	°C

ELECTRICAL CHARACTERISTICS

$T_a=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage BD139	$V_{(BR)CBO}$	$I_C=0.1\text{mA}, I_E=0$	80			V
Collector-emitter sustaining voltage BD139	$V_{CEQ(SUS)}^*$	$I_C=0.03\text{A}, I_B=0$	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=0.1\text{mA}, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=30\text{V}, I_E=0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			10	μA
DC current gain	$h_{FE(1)}^*$	$V_{CE}=2\text{V}, I_C=150\text{mA}$	40		250	
	$h_{FE(2)}^*$	$V_{CE}=2\text{V}, I_C=5\text{mA}$	25			
	$h_{FE(3)}^*$	$V_{CE}=2\text{V}, I_C=500\text{mA}$	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: pulse width $\leq 350\mu\text{s}$, duty cycle $\leq 2.0\%$.

CLASSIFICATION OF $h_{FE(1)}$

RANK			16
RANGE			160-300

Typical Characteristics

