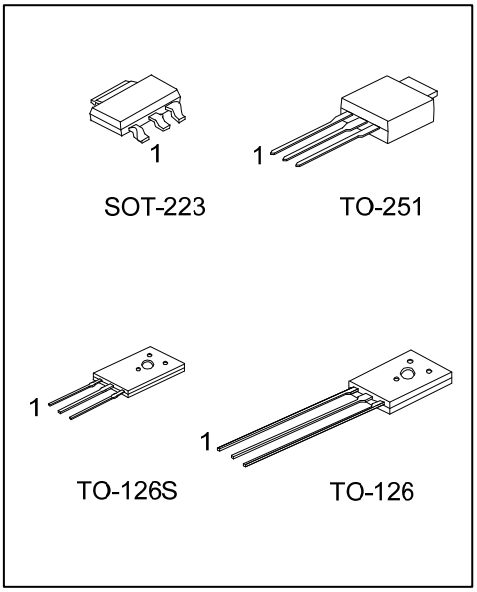
BD139

NPN SILICON TRANSISTOR

NPN POWER TRANSISTORS



■ FEATURES

* High current (max.1.5A)
* Low voltage (max.80V)

■ ORDERING INFORMATION

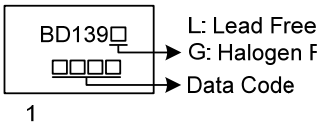
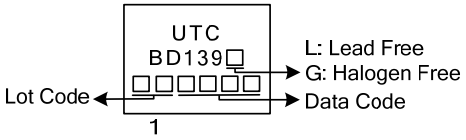
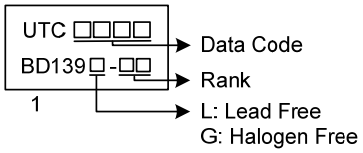
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BD139L-xx-AA3-R	BD139G-xx-AA3-R	SOT-223	B	C	E	Tape Reel
BD139L-xx-TM3-T	BD139G-xx-TM3-T	TO-251	B	C	E	Tube
BD139L-xx-T60-K	BD139G-xx-T60-K	TO-126	E	C	B	Bulk
BD139L-xx-T6S-K	BD139G-xx-T6S-K	TO-126S	E	C	B	Bulk

Note: Pin Assignment: E: Emitter C: Collector B: Base

BD139G-xx-AA3-R
(1)Packing Type
(2)Package Type
(3)Rank
(4)Green Package

(1) R: Tape Reel, K: Bulk, T: Tube
(2) AA3: SOT-223, TM3: TO-251, T60: TO-126, T6S: TO-126S
(3) refer to h_{FE}
(4) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING

PACKAGE	MARKING
SOT-223	
TO-251	
TO-126 TO-126C	

■ ABSOLUTE MAXIMUM RATING

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	100	V
Collector-Emitter Voltage		V_{CEO}	80	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current (DC)		I_C	1.5	A
Peak Collector Current		I_{CM}	2	A
Peak Base Current		I_{BM}	1	A
Power Dissipation (T_A=25°C)	SOT-223	P_D	0.8	W
	TO-126/ TO-126S		1.25	W
	TO-251		1.5	W
Junction Temperature		T_J	+150	°C
Operating Temperature		T_{OPR}	-65 ~ +150	°C
Storage Temperature		T_{STG}	-65 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Collector Cut-Off Current		I_{CBO}	I_E=0, V_{CB}=30V				100	nA
			I_E=0, V_{CB}=30V, T_J=125°C				10	μA
Emitter Cut-Off Current		I_{EBO}	I_C=0, V_{EB}=5V				100	nA
DC Current Gain		h_{FE}	V_{CE}=2V (See Fig.1)	I_C=5mA	40			
				I_C =150mA	63		250	
				I_C =500mA	25			
DC Current Gain	BD139-10		I_C =150mA, V_{CE}=2V (See Fig.1)		63		160	
	BD139-16				100		250	
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$	I_C =500 mA, I_B=50mA				0.5	V
Base-Emitter Voltage		V_{BE}	I_C =500 mA, V_{CE}=2V				1	V
Transition Frequency		f_T	I_C =500 mA, V_{CE}=5V, f=100MHz			190		MHz

■ TYPICAL CHARACTERISTICS