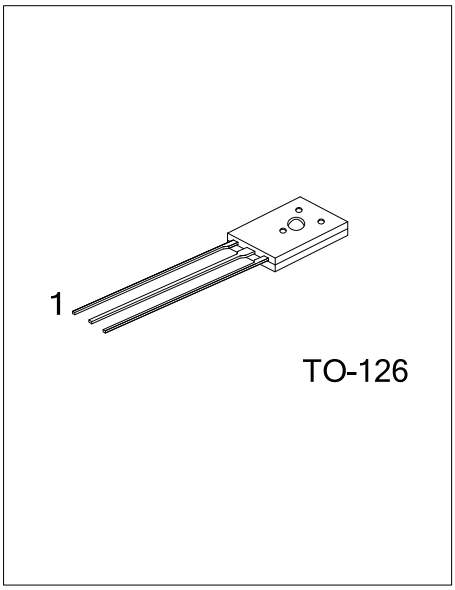
BD139A

NPN SILICON TRANSISTOR

NPN POWER TRANSISTORS



■ FEATURES

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

■ ORDERING INFORMATION

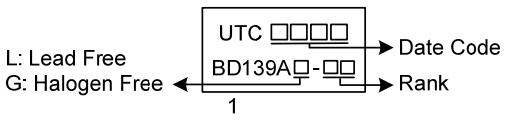
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BD139AL-xx-T60-K	BD139AG-xx-T60-K	TO-126	E	C	B	Bulk

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

BD139AG-xx-AA3-R
- (1)Packing Type
- (2)Packing Type
- (3)Rank
- (4)Green Package

(1) K: Bulk
(2) T60: TO-126
(3) refer to h_{FE}
(4) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



■ 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)	P_D	1.25	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.

■ THERMAL DATA

PARAMETER	SYMBOL	RATING	UNIT
Junction to Ambient	θ_{JA}	100	°C/W
Junction to Case	θ_{JC}	10	°C/W

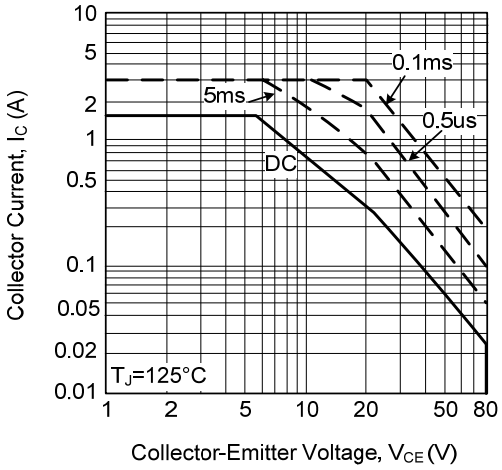
Note: Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

■ 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	I_C=5mA	40			
				I_C =150mA	63		250	
				I_C =500mA	25			
DC Current Gain	BD139A-16		I_C=150mA, V_{CE}=2V		100		250	
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$	I_C=500mA, I_B=50mA				0.5	V
Base-Emitter Voltage		V_{BE}	I_C=500mA, V_{CE}=2V				1	V
Transition Frequency		f_T	I_C=500mA, V_{CE}=5V, f=100MHz			190		MHz

■ TYPICAL CHARACTERISTICS

Active-Region Safe Operating Area



DC Current Gain Typical Values