



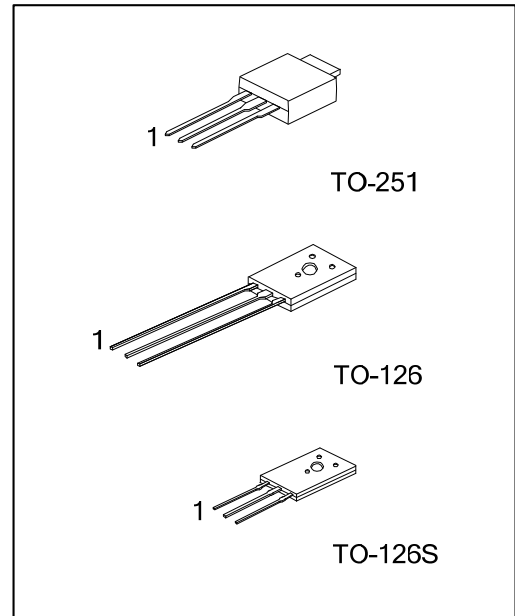
BD139

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-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
BD139L-xx-TM3-T	BD139G-xx-TM3-T	TO-251	B	C	E	Tube

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

<p>BD139L-xx-T60-K</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Rank</p> <p>(4) Green Package</p>	<p>(1) K: Bulk, T: Tube</p> <p>(2) T60: TO-126, T6S: TO-126S, TM3: TO-251</p> <p>(3) refer to h_{FE}</p> <p>(4) L: Lead Free, G: Halogen Free and Lead Free</p>
---	--

■ **MARKING**

TO-126 / TO-126S	TO-251

■ ABSOLUTE MAXIMUM RATING

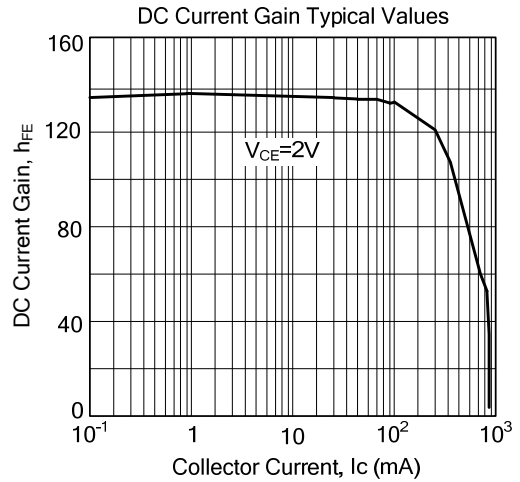
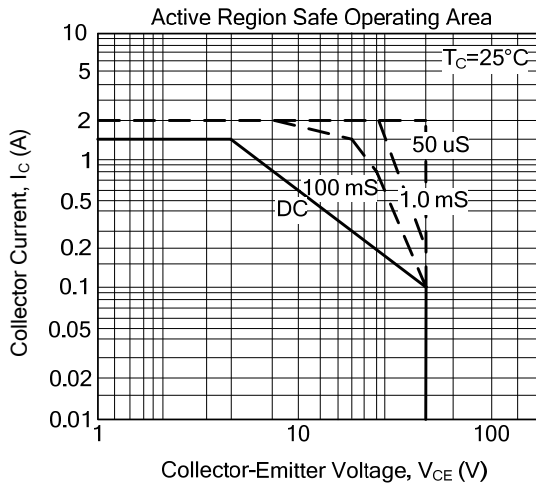
PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	100	V
Collector-Emitter Voltage		V_{CEO}	80	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current (DC)		I_C	1.5	A
Peak Collector Current		I_{CM}	2	A
Peak Base Current		I_{BM}	1	A
Power Dissipation ($T_a=25^\circ\text{C}$)	TO-126/ TO-126S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

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 ($T_J=25^\circ\text{C}$, unless otherwise specified)

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

■ TYPICAL CHARACTERISTICS



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.