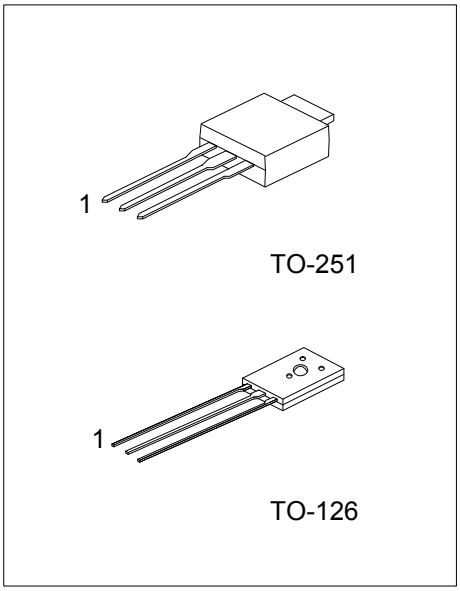
BD139

NPN SILICON TRANSISTOR

NPN POWER TRANSISTORS



Lead-free: BD139L
Halogen-free: BD139G

■ FEATURES

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

■ ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free	Halogen Free		1	2	3	
BD139-T60-K	BD139L-T60-K	BD139G-T60-K	TO-126	E	C	B	Bulk
BD139-TM3-T	BD139L-TM3-T	BD139G-TM3-T	TO-251	B	C	E	Tube

BD139L-T60-B
(1)Packing Type
(2)Package Type
(3)Lead Plating

(1) B: Bulk, T: Tube

(2) T60: TO-126, TM3: TO-251

(3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn

■ 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 (Ta=25°C)	TO-126	P_D	1.25	W
	TO-251		1	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

Fig.1 DC Current Gain Typical Values