



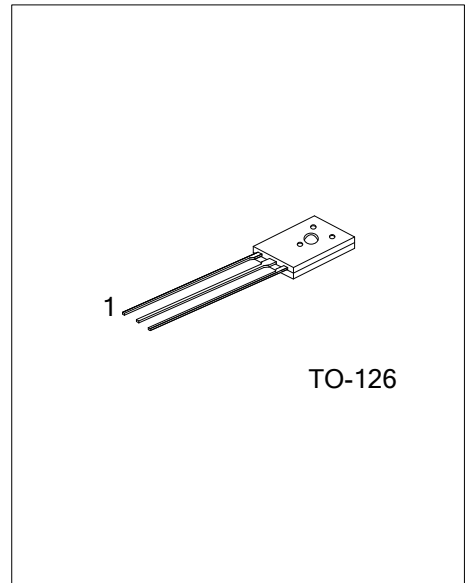
# BD137

## NPN SILICON TRANSISTOR

### NPN POWER TRANSISTORS

■ FEATURES

- \* High current (max.1.5A)
- \* Low voltage (max.60V)



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BD137L-xx-T60-K	BD137G-xx-T60-K	TO-126	E	C	B	Bulk

<p>BD137L-xx-T60-K</p> <p>(1) Packing Type (2) Package Type (3) Rank (4) Lead Plating</p>	<p>(1) K: Bulk (2) T60: TO-126 (3) refer to CLASSIFICATION OF <math>h_{FE}</math> (4) L: Lead Free, G: Halogen Free</p>
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### ■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	60	V
Collector-Emitter Voltage	$V_{CEO}$	60	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current (DC)	$I_C$	1.5	A
Peak Collector Current	$I_{CM}$	3.0	A
Peak Base Current	$I_{BM}$	0.5	A
Power Dissipation ( $T_A=25^\circ\text{C}$ )	$P_D$	1.25	W
Junction Temperature	$T_J$	+150	$^\circ\text{C}$
Operating Temperature	$T_{OPR}$	-55~+150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55~+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-Emitter Voltage (Note)		$V_{CEO}$	$I_C=30\text{mA}$ , $I_B=0$	60			V
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	$\mu\text{A}$
Emitter Cut-Off Current		$I_{EBO}$	$I_C=0$ , $V_{EB}=5\text{V}$			10	$\mu\text{A}$
DC Current Gain (Note)		$h_{FE}$	$V_{CE}=2\text{V}$	$I_C=5\text{mA}$	25		
				$I_C=150\text{mA}$	40		160
				$I_C=500\text{mA}$	25		
DC Current Gain (Note)	BD137-6	$h_{FE}$	$I_C=150\text{mA}$ , $V_{CE}=2\text{V}$		40		100
	BD137-10				63		160
Collector-Emitter Saturation Voltage (Note)		$V_{CE(SAT)}$	$I_C=500\text{mA}$ , $I_B=50\text{mA}$			0.5	V
Base-Emitter Voltage (Note)		$V_{BE}$	$I_C=500\text{mA}$ , $V_{CE}=2\text{V}$			1	V
Transition Frequency		$f_T$	$I_C=500\text{mA}$ , $V_{CE}=5\text{V}$ , $f=100\text{MHz}$		190		MHz

Note: Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

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