



UNISONIC TECHNOLOGIES CO., LTD

2SD965B

NPN EPITAXIAL SILICON TRANSISTOR

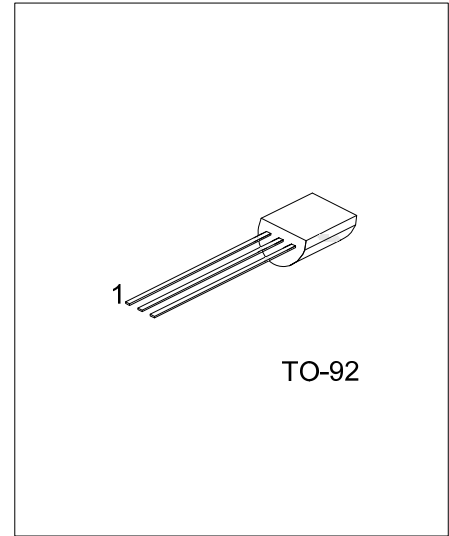
LOW VOLTAGE HIGH CURRENT NPN TRANSISTOR

FEATURES

- * Collector current up to 5A
- * Collector-Emitter voltage up to 30V

APPLICATIONS

- * Audio amplifier
- * Flash unit of camera
- * Switching circuit



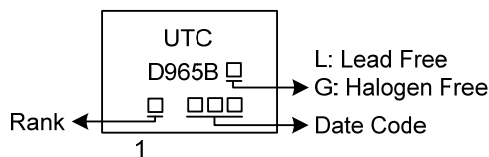
ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Lead Free Plating	Halogen Free		1	2	3	
2SD965BL-x-T92-B	2SD965BG-x-T92-B	TO-92	E	C	B	Tape Box
2SD965BL-x-T92-K	2SD965BG-x-T92-K	TO-92	E	C	B	Bulk

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

<p>2SD965BG-x-T92-B</p> <p>(1) Packing Type (2) Package Type (3) Rank (4) Green Package</p>	<p>(1) B: Tape Box, K: Bulk (2) T92: TO-92 (3) x: refer to Classification of h_{FE2} (4) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



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NPN EPITAXIAL SILICON TRANSISTOR

■ ABSOLUTE MAXIMUM RATING ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-base voltage	V_{CB0}	40	V
Collector-emitter voltage	V_{CEO}	30	V
Emitter-base voltage	V_{EBO}	7	V
Collector dissipation	P_C	750	mW
Collector current	I_C	5	A
Junction Temperature	T_J	125	$^{\circ}\text{C}$
Operating Temperature	T_{OPR}	-20 ~ +85	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-40 ~ +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.

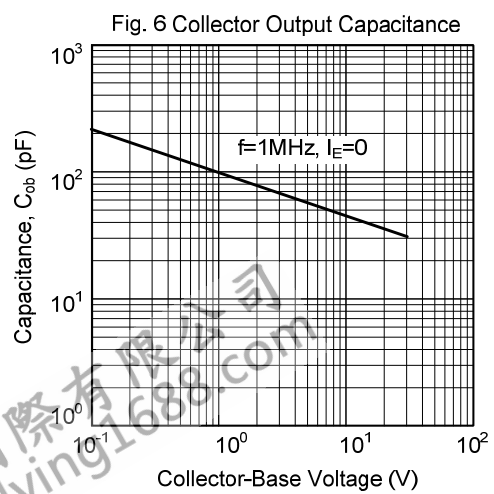
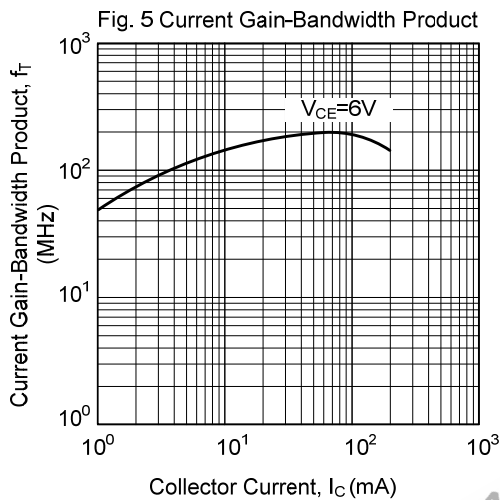
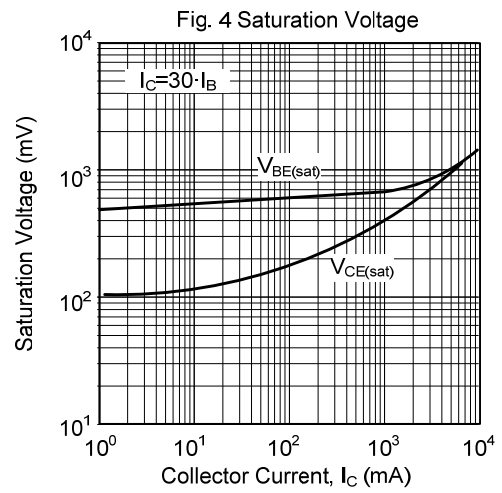
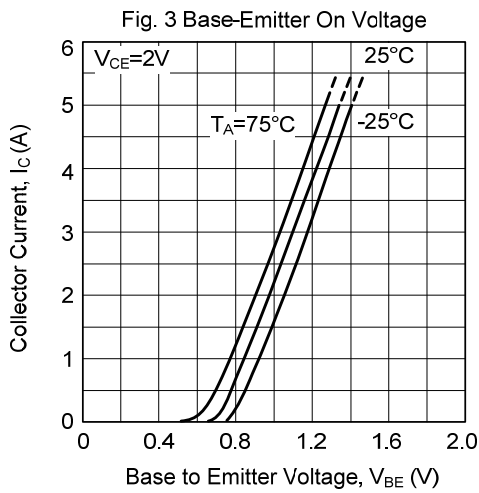
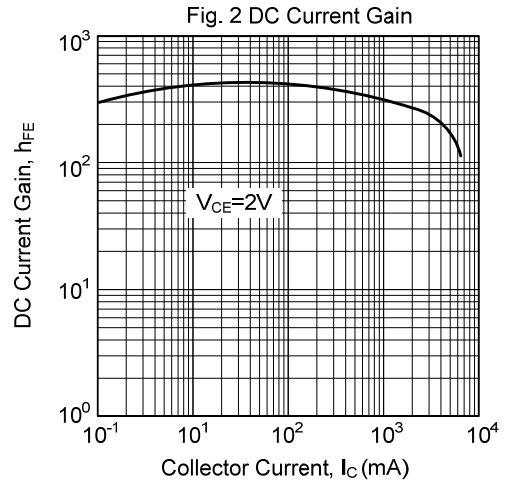
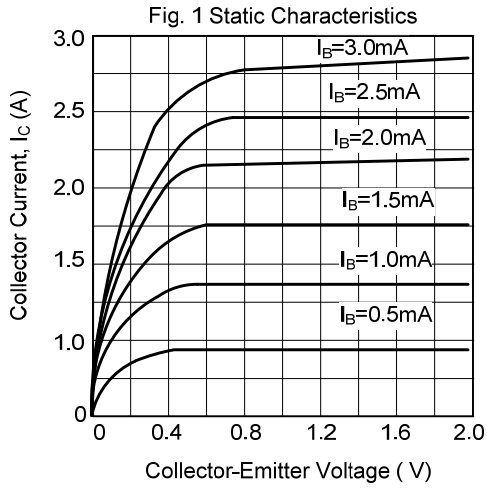
■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	BV_{CB0}	$I_C=100\mu\text{A}, I_E=0$	40			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C=1\text{mA}, I_B=0$	30			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E=10\mu\text{A}, I_C=0$	7			V
Collector cut-off current	I_{CBO}	$V_{CB}=30\text{V}, I_E=0$			200	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=7\text{V}, I_C=0$			200	nA
DC current gain (note)	h_{FE1}	$V_{CE}=2\text{V}, I_C=1\text{mA}$		200		
	h_{FE2}	$V_{CE}=2\text{V}, I_C=0.5\text{A}$	230		800	
	h_{FE3}	$V_{CE}=2\text{V}, I_C=2\text{A}$	150			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=3\text{A}, I_B=0.1\text{A}$			1	V
Current gain bandwidth product	f_T	$V_{CE}=6\text{V}, I_C=50\text{mA}$		150		MHz
Output capacitance	C_{ob}	$V_{CB}=20\text{V}, I_E=0, f=1\text{MHz}$			50	pF

■ CLASSIFICATION OF h_{FE2}

RANK	Q	R	S
RANGE	230-380	340-600	560-800

■ TYPICAL CHARACTERISTICS



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