

# UTC2SD965/A NPN EPITAXIAL SILICON TRANSISTOR

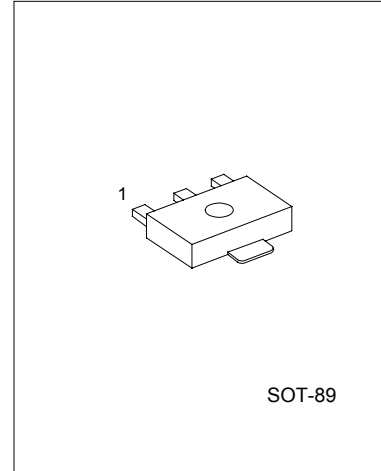
## LOW VOLTAGE HIGH CURRENT NPN TRANSISTOR

### FEATURES

- \* Collector current up to 5A
- \* 2SD965 : Collector-Emitter voltage up to 20 V
- \* 2SD965A : Collector-Emitter voltage up to 30 V

### APPLICATIONS

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



1:EMITTER 2:COLLECTOR 3: BASE

### ABSOLUTE MAXIMUM RATINGS ( Ta=25°C )

PARAMETER	SYMBOL	RATING	UNIT
Collector-base voltage	V <sub>CB0</sub>	40	V
Collector-emitter voltage	V <sub>CEO</sub>		V
2SD965		20	
2SD965A		30	
Emitter-base voltage	V <sub>EB0</sub>	7	V
Collector dissipation(Ta=25°C)	P <sub>c</sub>	750	mW
Collector current	I <sub>c</sub>	5	A
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-65 ~ +150	°C

### ELECTRICAL CHARACTERISTICS(Ta=25°C,unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	BV <sub>CB0</sub>	I <sub>c</sub> =100μA, I <sub>E</sub> =0	40			V
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	I <sub>c</sub> =1mA, I <sub>B</sub> =0				V
2SD965			20			
2SD965A			30			
Emitter-base breakdown voltage	BV <sub>EB0</sub>	I <sub>E</sub> =10μA, I <sub>c</sub> =0	7			V
Collector cut-off current	I <sub>CB0</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0			100	nA
Emitter cut-off current	I <sub>EB0</sub>	V <sub>EB</sub> =7V, I <sub>c</sub> =0			100	nA
DC current gain(note)	h <sub>FE</sub>	V <sub>CE</sub> =2V, I <sub>c</sub> =1mA V <sub>CE</sub> =2V, I <sub>c</sub> =0.5A V <sub>CE</sub> =2V, I <sub>c</sub> =2A	230 150	200	800	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>c</sub> =3A, I <sub>B</sub> = 0.1A			1	V
Current gain bandwidth product	f <sub>T</sub>	V <sub>CE</sub> =6V, I <sub>c</sub> =50mA		150		MHz

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PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output capacitance	Cob	$V_{CB}=20V, I_E=0$ $f=1MHz$			50	pF

## CLASSIFICATION OF hFE2

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

## TYPICAL CHARACTERISTIC CURVES

Fig.1 Static characteristics

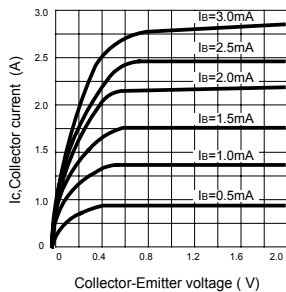


Fig.2 DC current Gain

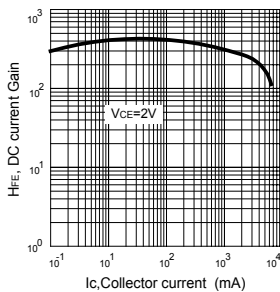


Fig.3 Base-Emitter on Voltage

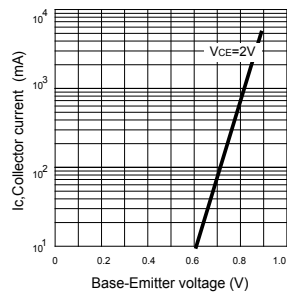


Fig.4 Saturation voltage

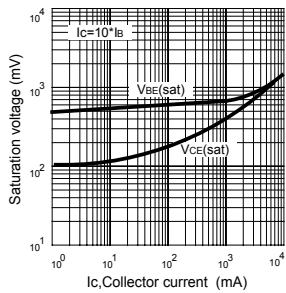


Fig.5 Current gain-bandwidth product

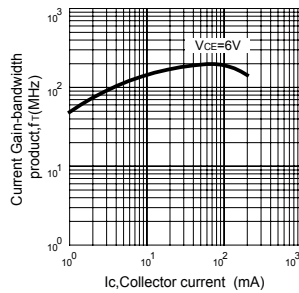


Fig.6 Collector output Capacitance

