



2SD965/A

NPN SILICON TRANSISTOR

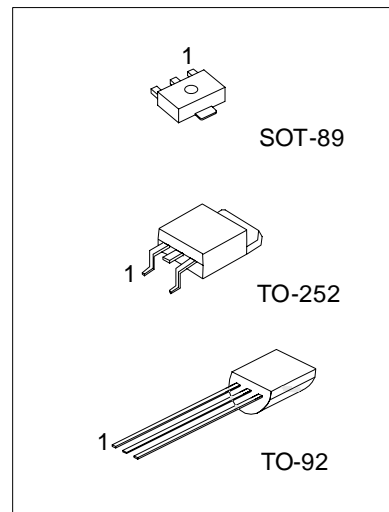
LOW VOLTAGE HIGH CURRENT TRANSISTOR

FEATURES

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

APPLICATIONS

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



*Pb-free plating product number:
2SD965L/2SD965AL

ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
2SD965-x-AB3-R	2SD965L-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SD965-x-T92-B	2SD965L-x-T92-B	TO-92	E	C	B	Tape Box
2SD965-x-T92-K	2SD965L-x-T92-K	TO-92	E	C	B	Bulk
2SD965-x-TN3-R	2SD965L-x-TN3-R	TO-252	B	C	E	Tape Reel
2SD965-x-TN3-T	2SD965L-x-TN3-T	TO-252	B	C	E	Tube
2SD965A-x-AB3-R	2SD965AL-x-AB3-R	SOT-89	B	C	E	Tape Reel
2SD965A-x-T92-B	2SD965AL-x-T92-B	TO-92	E	C	B	Tape Box
2SD965A-x-T92-K	2SD965AL-x-T92-K	TO-92	E	C	B	Bulk
2SD965A-x-TN3-R	2SD965AL-x-TN3-R	TO-252	B	C	E	Tape Reel
2SD965A-x-TN3-T	2SD965AL-x-TN3-T	TO-252	B	C	E	Tube

<p>2SD965L-x-AB3-R</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel, T: Tube</p> <p>(2) AB3: SOT-89, T92: TO-92, TN3: TO-252</p> <p>(3) x: refer to Classification of h_{FE2}</p> <p>(4) L: Lead Free Plating, Blank: Pb/Sn</p>
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■ ABSOLUTE MAXIMUM RATING (Ta=25)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V _{CBO}	40	V
Collector-Emitter Voltage	2SD965	V _{CEO}	20	V
	2SD965A		30	V
Emitter-Base Voltage		V _{EBO}	7	V
Collector Dissipation	SOT-89	P _C	500	mW
	TO-92		750	mW
	TO-252		1	W
Collector Current		I _C	5	A
Junction Temperature		T _J	150	
Storage Temperature		T _{STG}	-65 ~ +150	

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 (Ta=25 , unless otherwise specified)

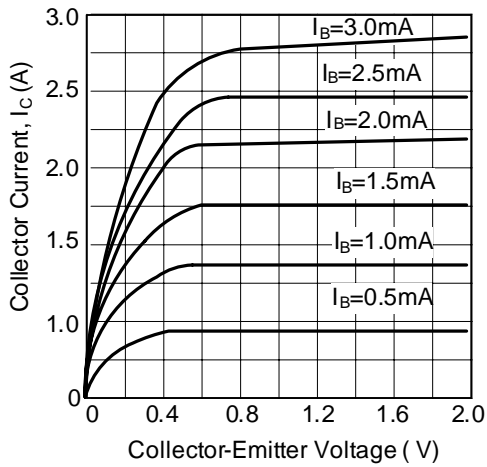
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage		BV _{CBO}	I _C =100μA, I _E =0	40			V
Collector-Emitter Breakdown Voltage	2SD965	BV _{CEO}	I _C =1mA, I _B =0	20			V
	2SD965A			30			V
Emitter-Base Breakdown Voltage		BV _{EBO}	I _E =10μA, I _C =0	7			V
Collector Cut-off Current		I _{CBO}	V _{CB} =10V, I _E =0			100	nA
Emitter Cut-off Current		I _{EBO}	V _{EB} =7V, I _C =0			100	nA
DC Current Gain(note)	h _{FE}		V _{CE} =2V, I _C =1mA		200		
			V _{CE} =2V, I _C =0.5A	230		800	
			V _{CE} =2V, I _C =2A	150			
Collector-Emitter Saturation Voltage		V _{CE(SAT)}	I _C =3A, I _B =0.1A			1	V
Current Gain Bandwidth Product		f _T	V _{CE} =6V, I _C =50mA		150		MHz
Output Capacitance		C _{ob}	V _{CB} =20V, I _E =0, f=1MHz			50	pF

■ CLASSIFICATION OF h_{FE2}

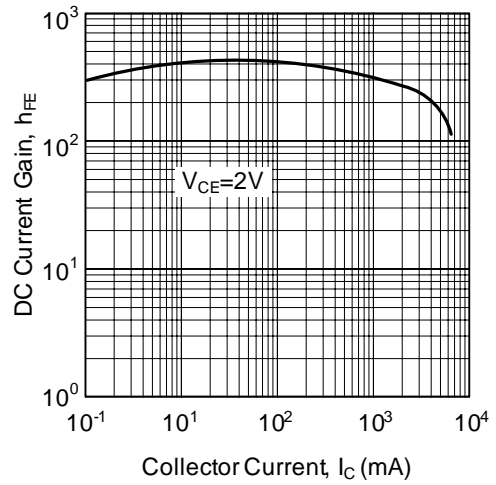
RANK	Q	R	S
RANGE	230-380	340-600	560-800

TYPICAL CHARACTERISTICS

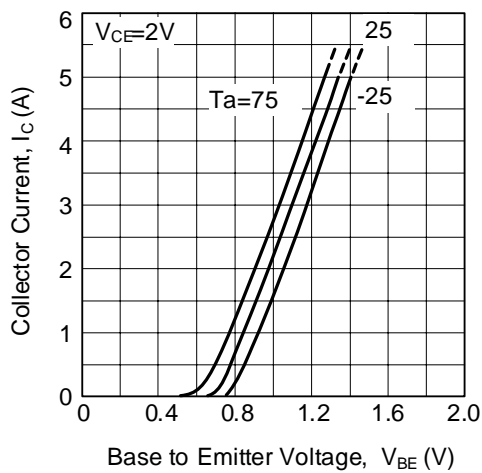
Static Characteristics



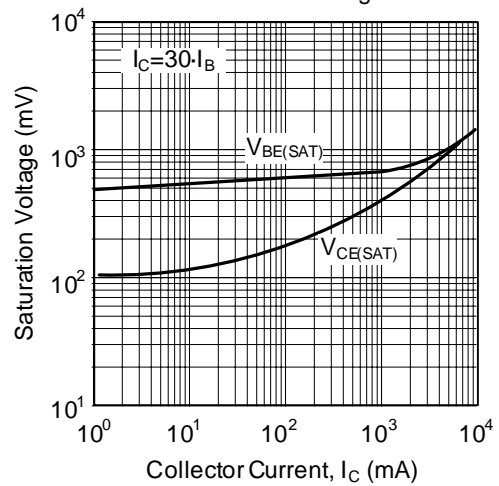
DC Current Gain



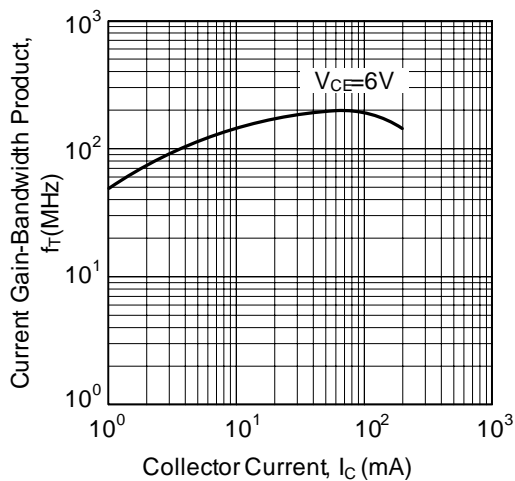
Base-Emitter on Voltage



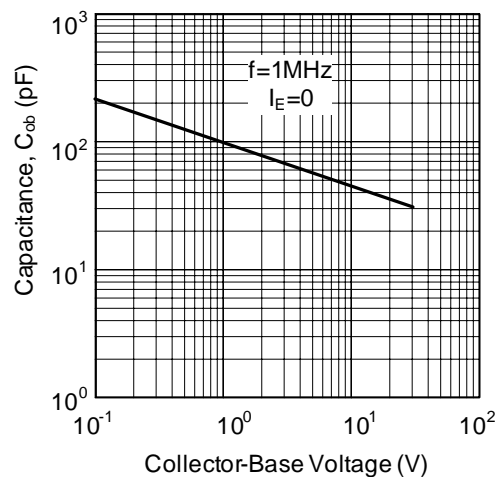
Saturation Voltage



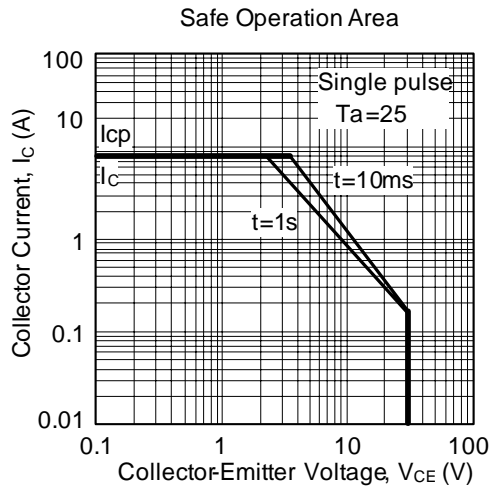
Current Gain-Bandwidth Product



Collector Output Capacitance



■ TYPICAL CHARACTERISTICS



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