



JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

SOT-89-3L Plastic-Encapsulate Transistors

2SD965A TRANSISTOR (NPN)

FEATURES

- Audio amplifier
- Flash unit of camera
- Switching circuit

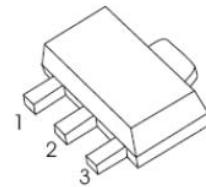
MARKING: 965A

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{EBO}	Emitter-Base Voltage	7	V
I_c	Collector Current -Continuous	5	A
P_c	Collector Power Dissipation	750	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	167	°C/W
T_J	Junction Temperature	150	°C
T_{stg}	Storage Temperature	-55~150	°C

SOT-89-3L

1. BASE



2. COLLECTOR

3. Emitter

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=0.1\text{mA}, I_E=0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	30			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	7			V
Collector cut-off current	I_{CBO}	$V_{CB}=10\text{V}, I_E=0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=7\text{V}, I_C=0$			0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=2\text{ V}, I_C=1\text{mA}$		200		
	$h_{FE(2)}$	$V_{CE}=2\text{ V}, I_C=500\text{mA}$	230		800	
	$h_{FE(3)}$	$V_{CE}=2\text{ V}, I_C=2\text{A}$	150			
Collector-emitter saturation voltage	$V_{CE(\text{sat})}$	$I_C=3\text{A}, I_B=0.1\text{A}$			1	V
Transition frequency	f_T	$V_{CE}=6\text{V}, I_C=50\text{mA}$		150		MHz
Out capacitance	C_{ob}	$V_{CB}=20\text{ V}, I_E=0, f=1\text{MHz}$			50	pF

CLASSIFICATION OF $h_{FE(2)}$

Rank	Q	R	S
Range	230-380	340-600	560-800

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