



# 2SC949D

## NPN General Purpose Switching Transistor

**Voltage** 200V **Current** 3A

### Features

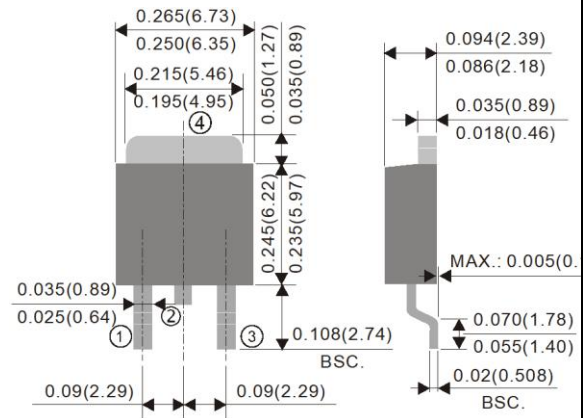
- NPN epitaxial Silicon, Planar Design
- Collector-emitter voltage  $V_{CE} = 200V$
- High collector current = 3A
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

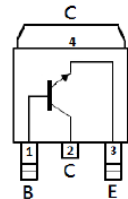
- Case: TO-252AA Package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0104 ounces, 0.297grams

TO-252AA

Unit: inch(mm)



Pin Assignment: 1. Base  
2,4. Collector  
3. Emitter



### Maximum Ratings and Thermal Characteristics ( $T_A=25^{\circ}C$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
Collector-Base Voltage	$V_{CBO}$	250	V
Collector-Emitter Voltage	$V_{CEO}$	200	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current (DC)	$I_C$	3	A
Collector Current (Pulse)	$I_{CP}$	6	A
Total Power Dissipation	$P_{TOTAL}$	1.56	W
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~150	$^{\circ}C$



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### Electrical Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
<b>OFF Characteristics</b>						
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C= 1.0\text{mA}, I_B= 0\text{A}$	200	-	-	V
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C= 100\mu\text{A}, I_E= 0\text{A}$	250	-	-	V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E= 100\mu\text{A}, I_C= 0\text{A}$	6	-	-	V
Collector-Base Cutoff Current	$I_{CBO}$	$V_{CB}= 200\text{V}, I_E= 0\text{A}$	-	-	50	nA
Emitter-Base Cutoff Current	$I_{EBO}$	$V_{EB}= 6\text{V}$	-	-	50	nA
Collector-Emitter Cutoff Current	$I_{CES}$	$V_{CES}= 200\text{V}$	-	-	50	nA
<b>ON characteristics</b>						
DC Current Gain	$h_{FE}$	$V_{CE}= 5\text{V}, I_C= 20\text{mA}$	40	-	-	-
		$V_{CE}= 5\text{V}, I_C= 500\text{mA}$	40	80	160	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C= 1\text{A}, I_B= 100\text{mA}$	-	0.2	1	V
Base-Emitter Saturation voltage	$V_{BE(SAT)}$	$I_C= 1\text{A}, I_B= 100\text{mA}$	-	-	1.1	V
Collector-Base Capacitance	$C_{CBO}$	$V_{CB}= 10\text{V}, f=1\text{MHz}$	-	-	30	pF
Transition Frequency	$f_T$	$V_{CB}= 0.5\text{V}, f=1\text{MHz}$	50	-	-	MHz
Turn-ON Time	$T_{on}$	$V_{CC}= 20\text{V}, R_L= 40\text{ohm}$ $I_C= 500\text{mA}, I_B= 50\text{mA}$	-	100	-	nS
Turn-OFF Time	$T_{off}$		-	1500	-	nS



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## TYPICAL CHARACTERISTIC CURVES

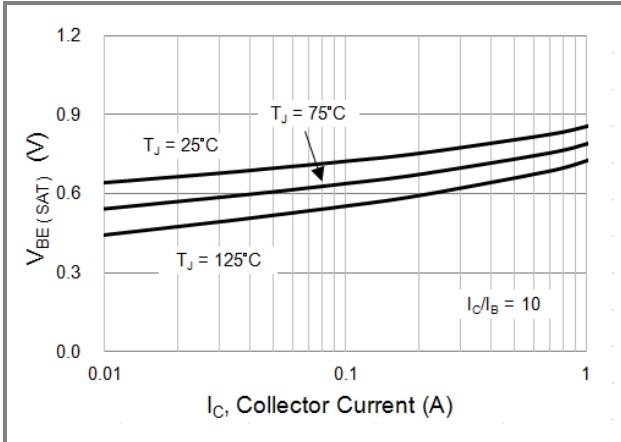


Fig.1 Typical Base-Emitter Saturation Voltage

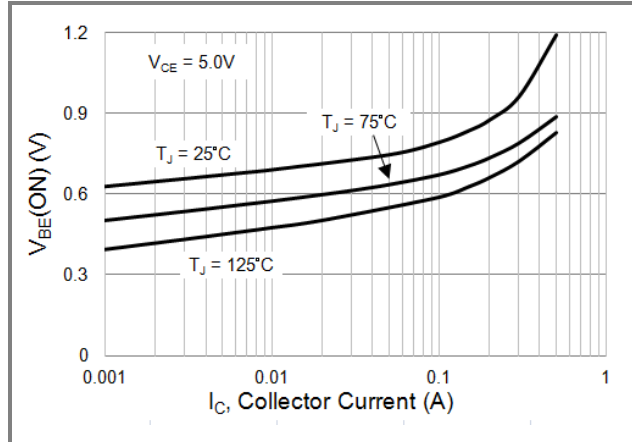


Fig.2 Typical Base-Emitter Turn-on Voltage

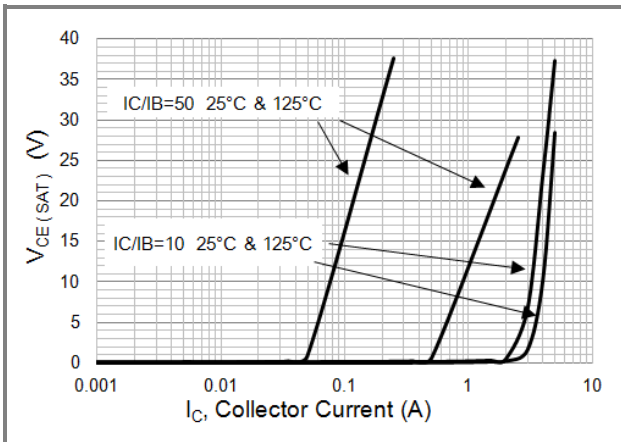


Fig.3 Typical Collector-Emitter Saturation Voltage

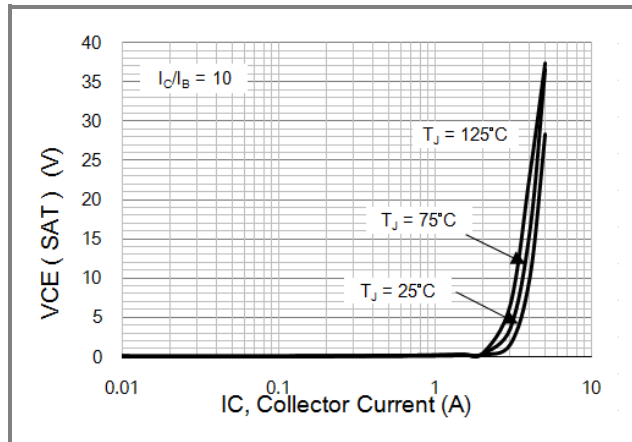


Fig.4 Typical Collector-Emitter Saturation Voltage

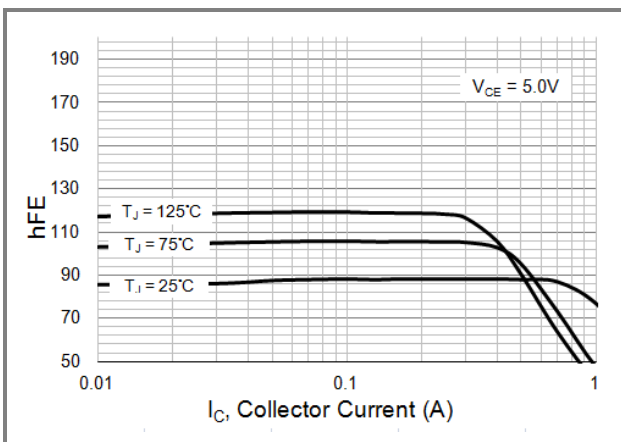


Fig.5 Typical DC Current Gain vs Collector Current

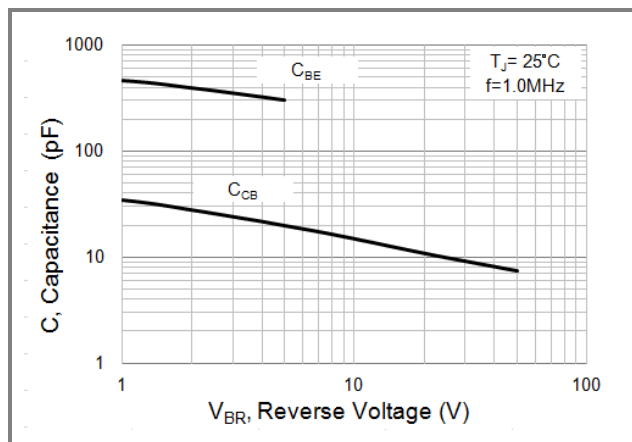


Fig.6 Typical Capacitance



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## PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
2SC949D_L2_00001	TO-252AA	3000pcs / 13" reel	C949D	Halogen free

## MOUNTING PAD LAYOUT

