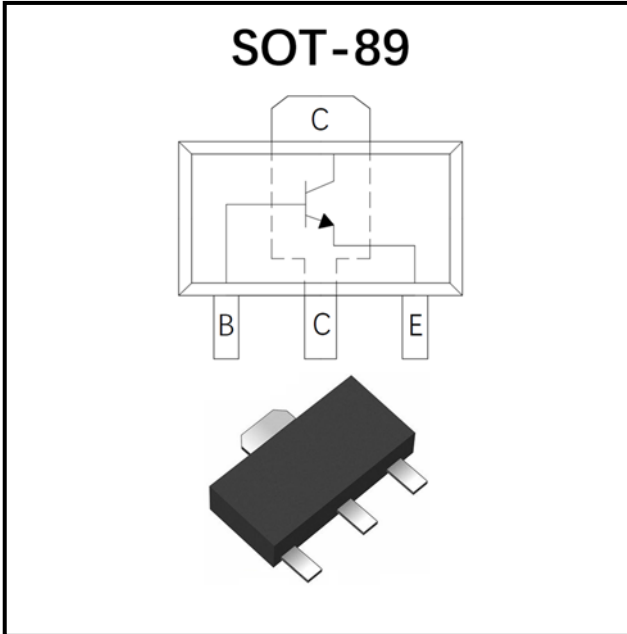


## NPN General Purpose Amplifier



### Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for automatic insertion

### Application

- Signal amplification
- Switching circuit

### Mechanical data

- **Package:** SOT-89
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

### ■ Maximum Ratings (T<sub>a</sub>=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				NC
Collector-base voltage	V <sub>CB0</sub>	V	I <sub>C</sub> =100uA, I <sub>E</sub> =0	50
Collector-emitter voltage	V <sub>CE0</sub>	V	I <sub>C</sub> =1mA, I <sub>B</sub> =0	50
Emitter-base voltage	V <sub>EB0</sub>	V	I <sub>E</sub> =100uA, I <sub>C</sub> =0	6
Collector current	I <sub>C</sub>	A		1
Power dissipation	P <sub>D</sub>	mW		500
Junction temperature	T <sub>J</sub>	°C		-55 to +150
Storage temperature	T <sub>STG</sub>	°C		-55 to +150



## ■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

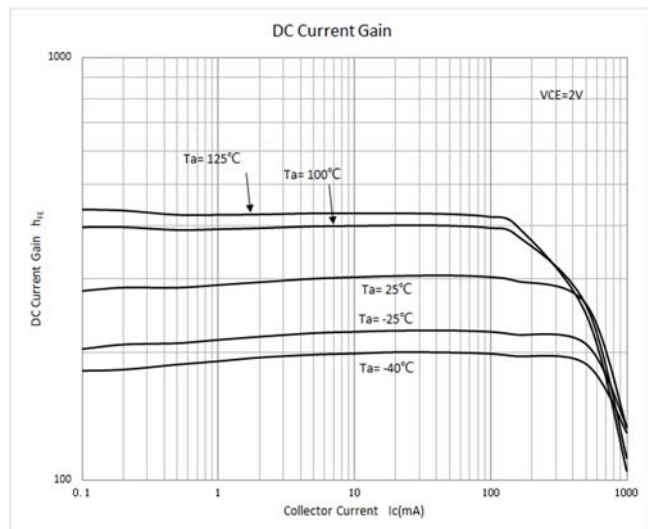
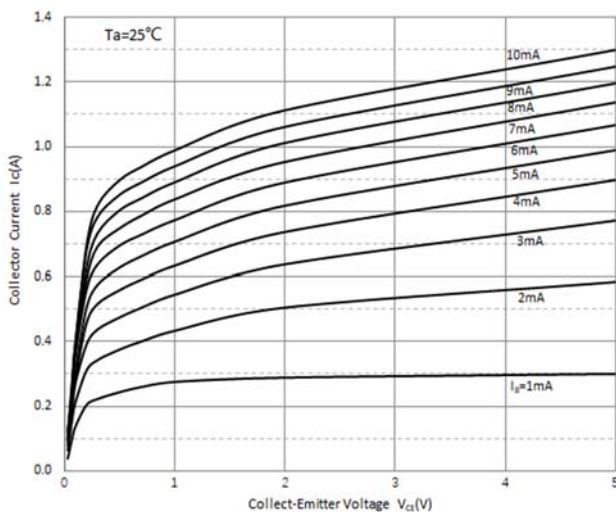
Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	V	I <sub>C</sub> =100μA, I <sub>E</sub> =0	50		
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	V	I <sub>C</sub> =1mA, I <sub>B</sub> =0	50		
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	V	I <sub>E</sub> =100μA, I <sub>C</sub> =0	6		
Collector-base cut-off current	I <sub>CBO</sub>	μA	V <sub>CB</sub> =40V, I <sub>E</sub> =0A			1
Emitter-base cut-off current	I <sub>EBO</sub>	μA	V <sub>EB</sub> =5V, I <sub>B</sub> =0A			1
DC current gain	h <sub>FE</sub>		V <sub>CE</sub> =2V I <sub>C</sub> =50mA	180		450
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	mV	I <sub>C</sub> =0.5A I <sub>B</sub> =25mA			350
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	V	I <sub>C</sub> =0.5A I <sub>B</sub> =50mA			1.1

## ■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	RθJ-A <sup>(1)</sup>	°C/W	250
Thermal resistance, junction-to-case	RθJ-C <sup>(1)</sup>	°C/W	50

Note: (1) The device is installed and tested on FR-4 P.C.B.

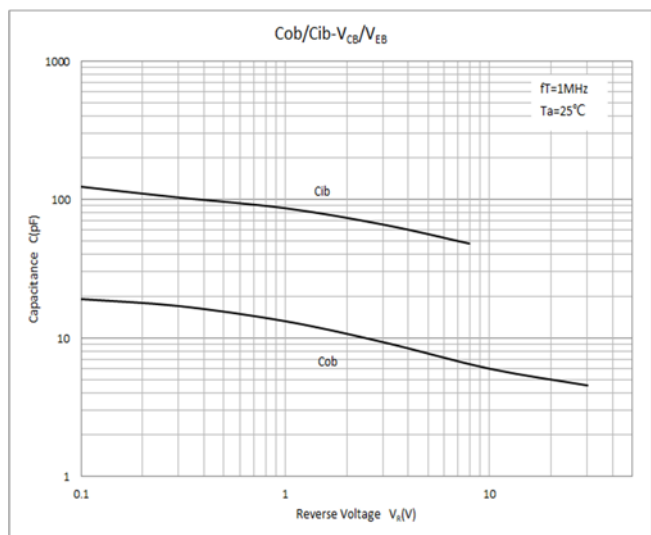
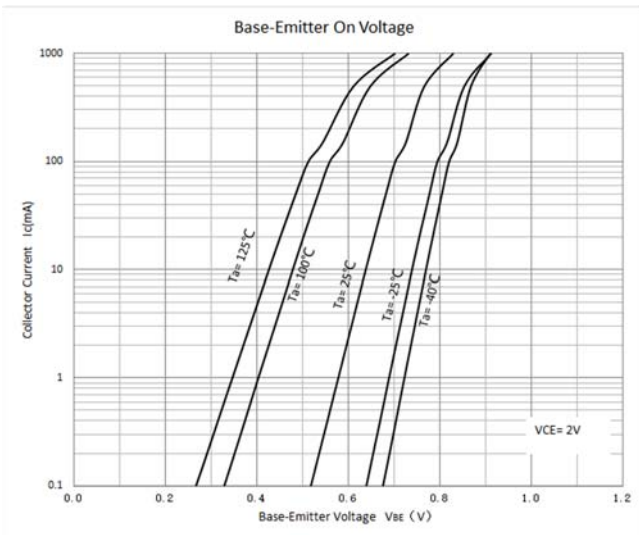
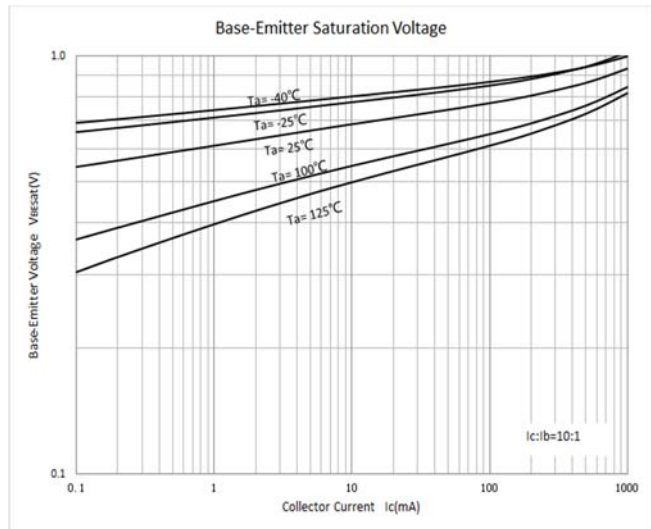
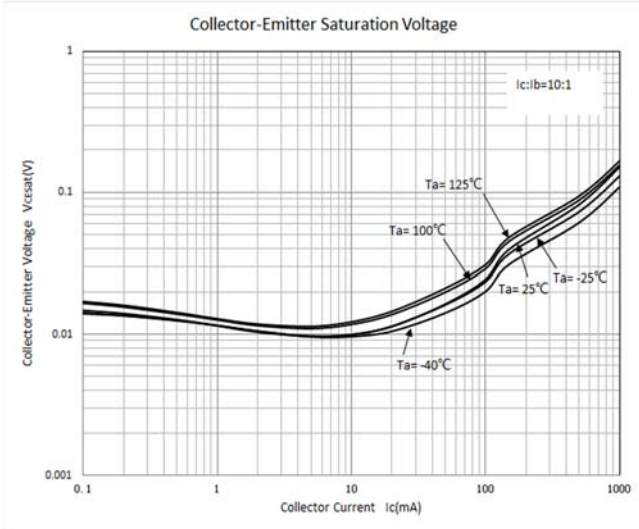
## ■ Characteristics(Typical)





# 2SCR513

RoHS  
COMPLIANT





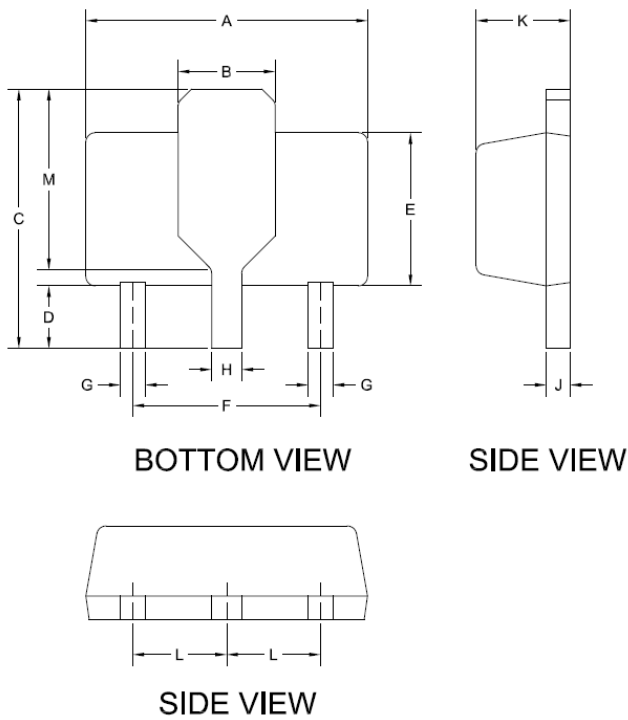
# 2SCR513

**RoHS**  
COMPLIANT

## ■ Ordering Information

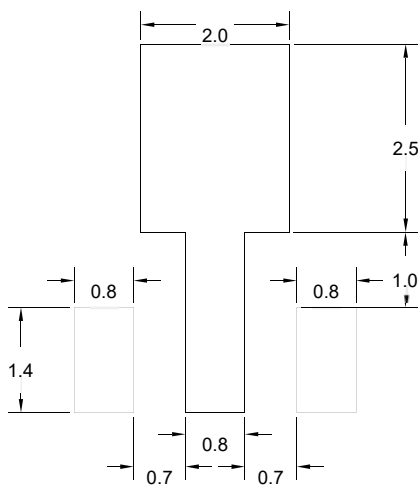
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
2SCR513	F2	Approximate 0.055	1000	8000	32000	7" reel

## ■ Outline Dimensions



DIM	DIMENSIONS			
	INCHES		MM	
	MIN.	MAX.	MIN.	MAX.
A	0.173	0.181	4.400	4.600
B	0.061 TYP.		1.550 TYP.	
C	0.155	0.167	3.940	4.250
D	0.031	0.047	0.800	1.200
E	0.094	0.102	2.400	2.600
F	0.118 TYP.		3.00 TYP.	
G	0.014	0.019	0.360	0.480
H	0.017	0.022	0.440	0.560
J	0.014	0.017	0.350	0.440
K	0.055	0.063	1.400	1.600
L	0.059 TYP.		1.500 TYP.	
M	0.108 TYP.		2.750 TYP.	

## ■ Suggested Pad Layout



UNIT:MM



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