



# 2SC2222H

## NPN General Purpose Switching Transistor

**Voltage**

**40V**

**Current**

**600mA**

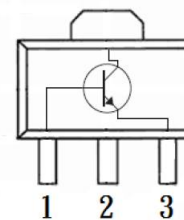
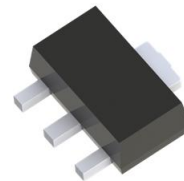
### Features

- NPN epitaxial Silicon, Planar Design
- Collector-emitter voltage  $V_{CE} = 40V$
- Collector current = 600mA
- Lead free in compliance with EU RoHS2.0 (2011/65/EU & 2015/865/EU directive)
- Green molding compound as per IEC61249 Std.. (Halogen Free)

### Mechanical Data

- Case: SOT-89 Package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.002 ounces, 0.057grams
- Marking: C2H

SOT-89



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

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

PARAMETER	SYMBOL	LIMIT	UNITS
Collector-Base Voltage	$V_{CBO}$	75	V
Collector-Emitter Voltage	$V_{CEO}$	40	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current (DC)	$I_C$	600	mA
Collector Current (Pulse)	$I_{CP}$	800	mA
Total Power Dissipation	$P_{TOT}$	1.1	W
Junction to Ambient (Note1)	$R_{\theta JA}$	250	$^{\circ}C/W$
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~150	$^{\circ}C$

Note1: Transistor mounted on a FR4 PCB, single-sided copper, tin-plated and standard footprint.



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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	$BV_{CEO}$	$I_C= 1.0\text{mA}, I_B= 0\text{A}$	40	-	-	V
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C= 10\mu\text{A}, I_E= 0\text{A}$	75	-	-	V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E= 10\mu\text{A}, I_C= 0\text{A}$	6	-	-	V
Collector-Base Cutoff Current	$I_{CBO}$	$V_{CB}= 60\text{V}, I_E= 0\text{A}$	-	-	10	nA
Emitter-Base Cutoff Current	$I_{EBO}$	$V_{EB}= 3\text{V}$	-	-	10	nA
Collector-Emitter Cutoff Current	$I_{CES}$	$V_{CES}= 60\text{V}$	-	-	10	nA
<b>ON characteristics</b>						
DC Current Gain	$h_{FE}$	$V_{CE}= 10\text{V}, I_C= 0.1\text{mA}$	35	-	-	-
		$V_{CE}= 10\text{V}, I_C= 1\text{mA}$	50	-	-	
		$V_{CE}= 10\text{V}, I_C= 10\text{mA}$	75	-	-	
		$V_{CE}= 10\text{V}, I_C= 150\text{mA}$	100	-	300	
		$V_{CE}= 1\text{V}, I_C= 150\text{mA}$	50	-	-	
		$V_{CE}= 10\text{V}, I_C= 500\text{mA}$	40	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C= 150\text{mA}, I_B= 15\text{mA}$	-	-	0.3	V
		$I_C= 500\text{mA}, I_B= 50\text{mA}$	-	-	1.0	
Base-Emitter Saturation voltage	$V_{BE(SAT)}$	$I_C= 150\text{mA}, I_B= 15\text{mA}$	-	-	1.2	V
		$I_C= 500\text{mA}, I_B= 50\text{mA}$	-	-	2.0	
Collector-Base Capacitance	$C_{CBO}$	$V_{CB}= 10\text{V}, f=1\text{MHz}$	-	-	8	pF
Emitter-Base Capacitance	$C_{EBO}$	$V_{CB}= 0.5\text{V}, f=1\text{MHz}$	-	-	25	
Delay Time	td	$V_{CC}= 3\text{V}, V_{BE}= -5\text{V}$	-	-	10	nS
Rise Time	tr	$I_C= 150\text{mA}, I_B= 15\text{mA}$	-	-	25	
Storage Time	ts	$V_{CC}= 30\text{V}, I_C= 150\text{mA}$	-	-	225	
Fall Time	tf	$I_{B1} = I_{B2} = 15\text{mA}$	-	-	60	
Turn-on Time	ton	$I_C= 150\text{mA}, I_{BON} = 15\text{mA}$	-	-	35	
Turn-off Time	toff	$I_{BOFF} = -15\text{mA}$	-	-	250	
Transition Frequency	fT	$V_{CE} = 10\text{V}; I_C = 20\text{mA}$ $F = 100\text{MHz}$	300	-	-	MHz



# 2SC2222H

## TYPICAL CHARACTERISTIC CURVES

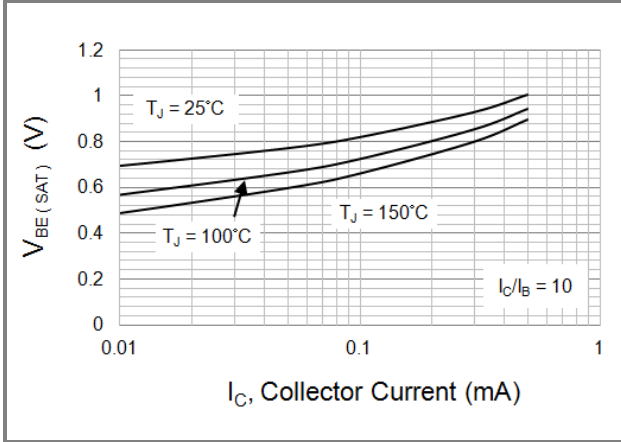


Fig.1 Typical Base-Emitter Saturation Voltage

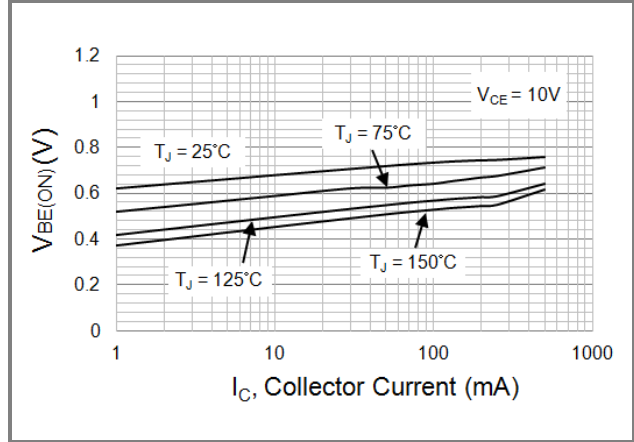


Fig.2 Typical Base-Emitter Turn-on Voltage

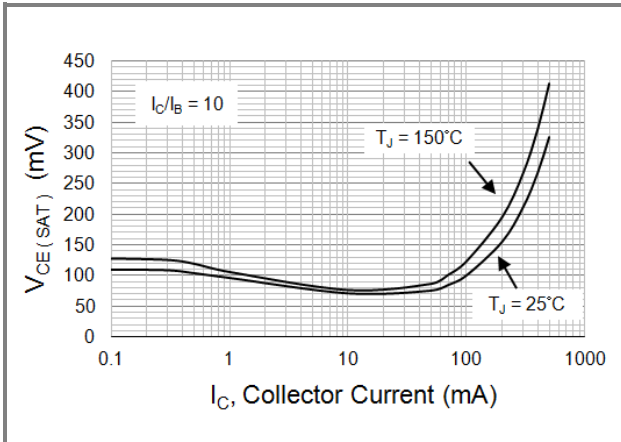


Fig.3 Typical Collector-Emitter Saturation

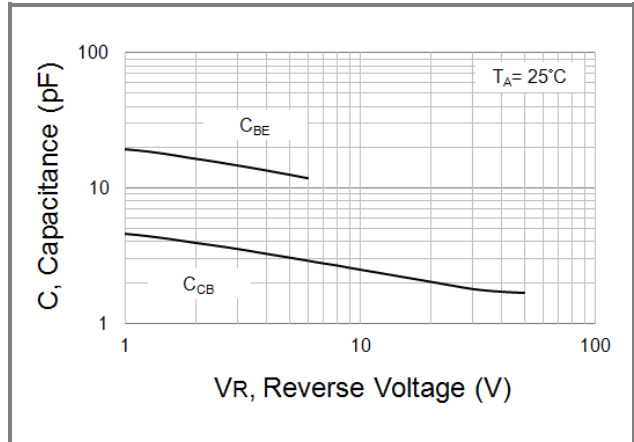


Fig.4 Typical Capacitance

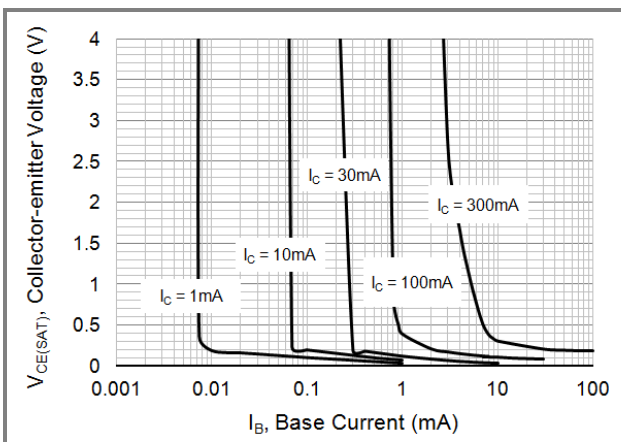


Fig.5 Typical Collector Saturation Region



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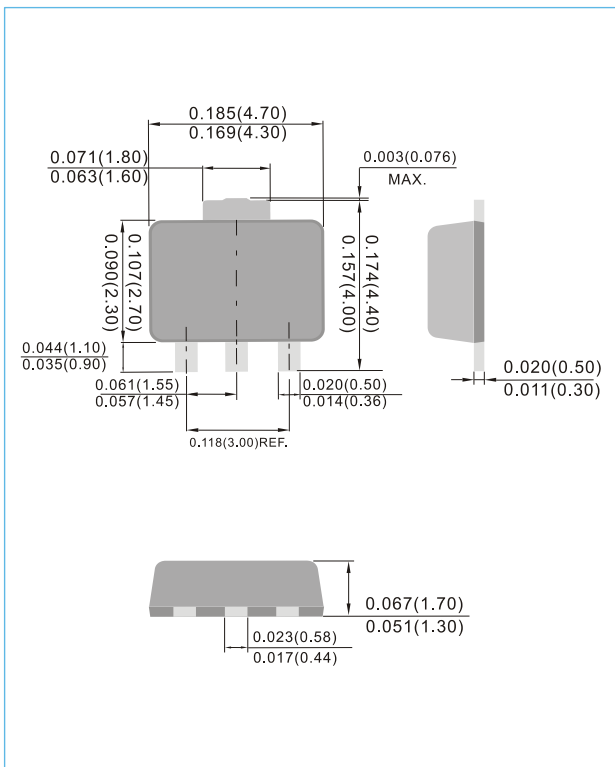
## Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
2SC2222H_R1_00001	SOT-89	1000pcs / 7" reel	C2H	Halogen free

## Packaging Information & Mounting Pad Layout

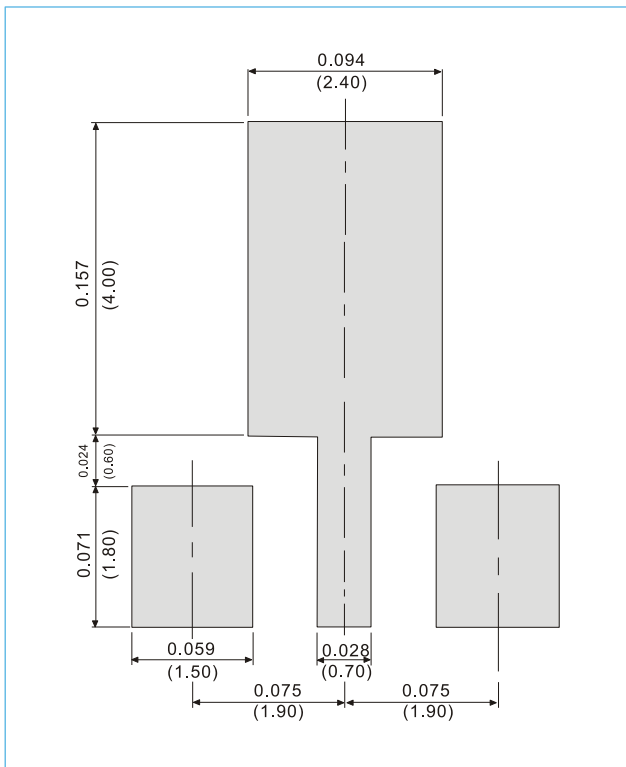
### SOT-89

Unit : inch(mm)



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Unit : inch(mm)





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