



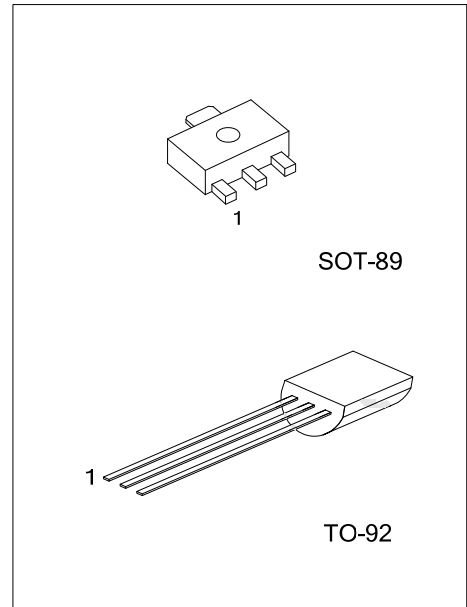
# 2N5401

## PNP SILICON TRANSISTOR

### HIGH VOLTAGE SWITCHING TRANSISTOR

■ FEATURES

- \* Collector-emitter voltage:  
V<sub>CEO</sub> = -150V
- \* High current gain,



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
-	2N5401G-x-AB3-R	SOT-89	B	C	E	Tape Reel
2N5401L-x-T92-B	2N5401G-x-T92-B	TO-92	E	B	C	Tape Box
2N5401L-x-T92-K	2N5401G-x-T92-K	TO-92	E	B	C	Bulk
2N5401L-x-T92-A-B	2N5401G-x-T92-A-B	TO-92	E	C	B	Tape Box
2N5401L-x-T92-A-K	2N5401G-x-T92-A-K	TO-92	E	C	B	Bulk

Note: Pin Assignment: B: Base C: Collector E: Emitter

<p>2N5401L-x-T92-A-B</p>	<p>(1) Packing Type (2) Pin Assignment (3) Package Type (4) Rank (5) Green Package</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel (2) refer to Pin Assignment (3) AB3: SOT-89, T92: TO-92 (4) x: refer to Classification of h<sub>FE2</sub> (5) L: Lead Free, G: Halogen Free and Lead Free</p>
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■ MARKING

SOT-89	TO-92

■ ABSOLUTE MAXIMUM RATING ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		$V_{CBO}$	-160	V
Collector-Emitter Voltage		$V_{CEO}$	-150	V
Emitter-Base Voltage		$V_{EBO}$	-5	V
Collector Current		$I_C$	-600	mA
Collector Dissipation	SOT-89	$P_C$	500	mW
	TO-92		625	mW
Junction Temperature		$T_J$	+150	$^{\circ}\text{C}$
Storage Temperature		$T_{STG}$	-55 ~ +150	$^{\circ}\text{C}$

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 ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

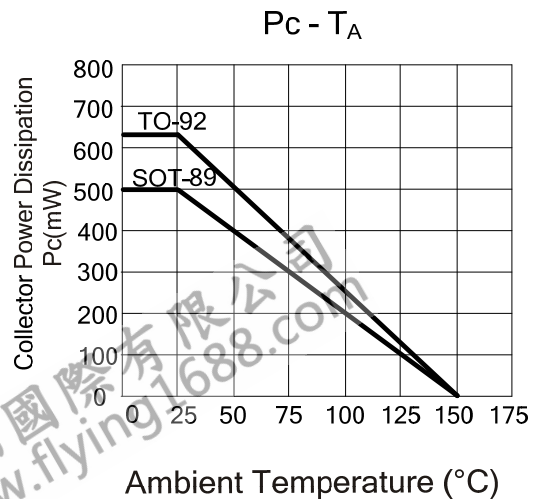
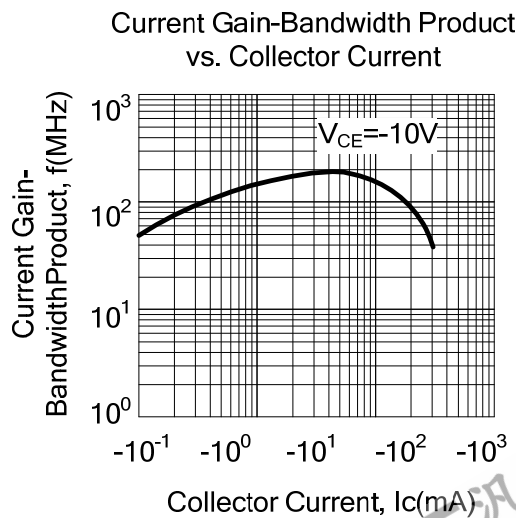
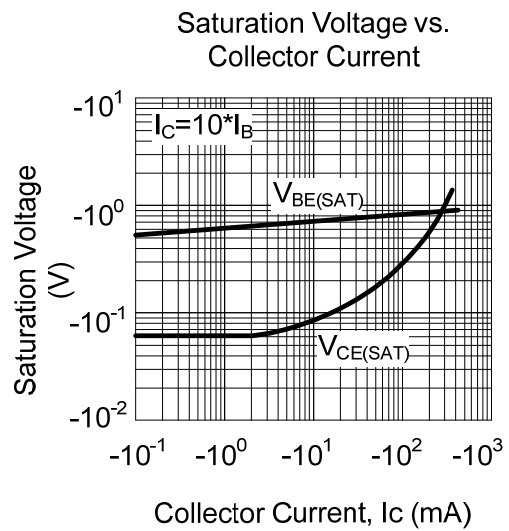
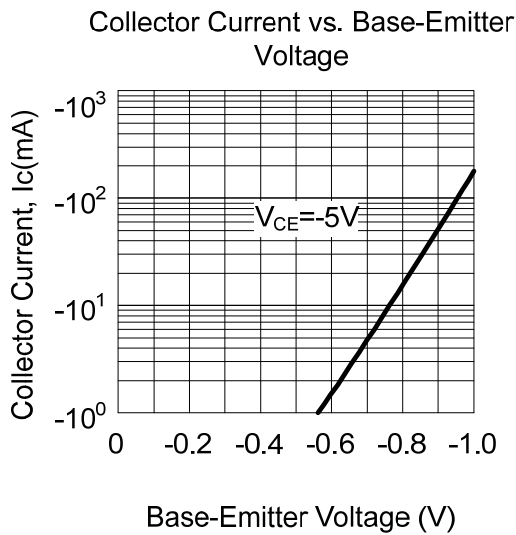
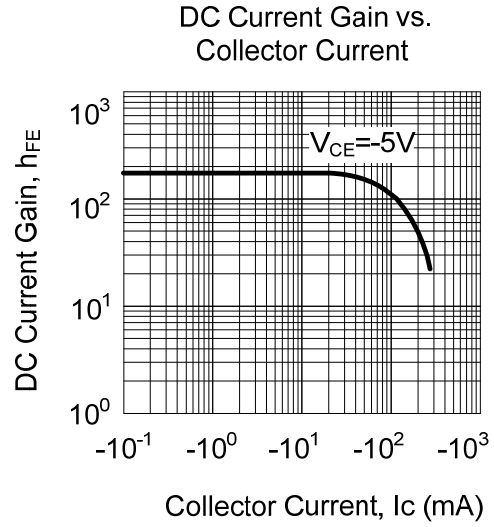
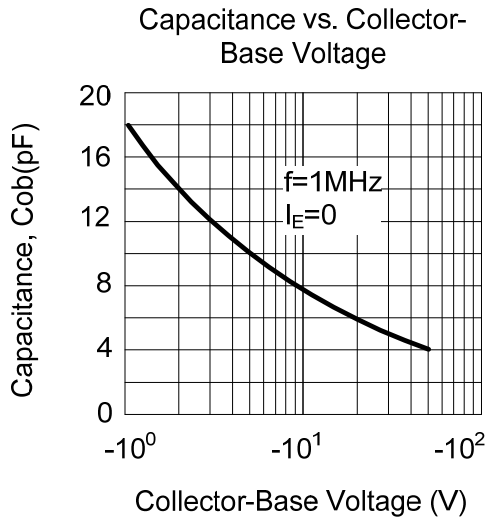
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C = -100\mu\text{A}, I_E = 0$	-160			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = -1\text{mA}, I_B = 0$	-150			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E = -10\mu\text{A}, I_C = 0$	-5			V
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = -120\text{V}, I_E = 0$			-50	nA
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = -3\text{V}, I_C = 0$			-50	nA
DC Current Gain (Note)	$h_{FE1}$	$V_{CE} = -5\text{V}, I_C = -1\text{mA}$	80			
	$h_{FE2}$	$V_{CE} = -5\text{V}, I_C = -10\text{mA}$	80		400	
	$h_{FE3}$	$V_{CE} = -5\text{V}, I_C = -50\text{mA}$	80			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = -10\text{mA}, I_B = -1\text{mA}$			-0.2	V
		$I_C = -50\text{mA}, I_B = -5\text{mA}$			-0.5	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = -10\text{mA}, I_B = -1\text{mA}$			-1	V
		$I_C = -50\text{mA}, I_B = -5\text{mA}$			-1	V
Current Gain Bandwidth Product	$f_T$	$V_{CE} = -10\text{V}, I_C = -10\text{mA}$ $f = 100\text{MHz}$	100		400	MHz
Output Capacitance	$C_{OB}$	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$			6.0	pF
Noise Figure	NF	$I_C = -0.25\text{mA}, V_{CE} = -5\text{V}$ $R_S = 1\text{k}\Omega, f = 10\text{Hz} \sim 15.7\text{kHz}$			8	dB

Note: Pulse test:  $P_W < 300\mu\text{s}$ , Duty Cycle  $< 2\%$ .

■ CLASSIFICATION OF  $h_{FE2}$

RANK	A	B	C
RANGE	80-170	150-240	200-400

■ TYPICAL CHARACTERISTICS



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