

# ST 2SC2901

## NPN Silicon Epitaxial Planar Transistor

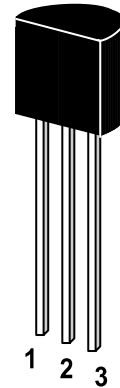
for general purpose amplifier and high speed switching applications.

The transistor is subdivided into two groups L and K, according to its DC current gain.

On special request, these transistors can be manufactured in different pin configurations.

### Features

- High frequency current gain
- High speed switching
- Small output capacitance

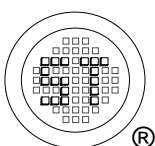


1. Emitter 2. Base 3. Collector

TO-92 Plastic Package  
Weight approx. 0.19g

### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	40	V
Collector Emitter Voltage	$V_{CES}$	40	V
Collector Emitter Voltage	$V_{CEO}$	15	V
Emitter Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	200	mA
Collector Current (10 $\mu$ s pulse)	$I_C$	500	mA
Power Dissipation	$P_{tot}$	600	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_S$	-55 to+150	$^\circ\text{C}$



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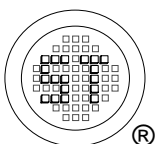
Dated : 07/08/2003

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## Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain* at $V_{CE}=1\text{V}$ , $I_C=10\text{mA}$					
Current Gain Group L	$h_{FE}$	40	-	120	-
K	$h_{FE}$	100	-	200	-
Collector Cutoff Current at $V_{CB}=20\text{V}$	$I_{CBO}$	-	-	0.1	$\mu\text{A}$
Emitter Cutoff Current at $V_{EB}=3\text{V}$	$I_{EBO}$	-	-	0.1	$\mu\text{A}$
Collector Saturation Voltage* at $I_C=10\text{mA}$ , $I_B=1\text{mA}$	$V_{CE(sat)}$	-	0.15	0.25	V
Base Saturation Voltage* at $I_C=10\text{mA}$ , $I_B=1\text{mA}$	$V_{BE(sat)}$	-	0.8	0.85	V
Turn-on Time at $V_{CC}=3\text{V}$ , $I_C=10\text{mA}$ , $I_{B1}=3\text{mA}$ , $-V_{BE}=1.5\text{V}$	$t_{on}$	-	8	12	ns
Storage Time at $I_C=10\text{mA}$ , $I_{B1}=-I_{B2}=10\text{mA}$	$t_{stg}$	-	6	13	ns
Turn-off Time at $V_{CC}=3\text{V}$ , $I_C=10\text{mA}$ , $I_{B1}=3\text{mA}$ , $-I_{B2}=1.5\text{mA}$	$t_{off}$	-	12	18	ns
Gain Bandwidth Product at $V_{CE}=10\text{V}$ , $-I_E=10\text{mA}$ , $f=100\text{MHz}$	$f_T$	500	750	-	MHz
Output Capacitance at $V_{CB}=5\text{V}$ , $f=1\text{MHz}$	$C_{OB}$	-	1.8	4	pF

\*Pulsed PW  $\leq 350\mu\text{s}$ , Duty Cycle  $\leq 2\%$



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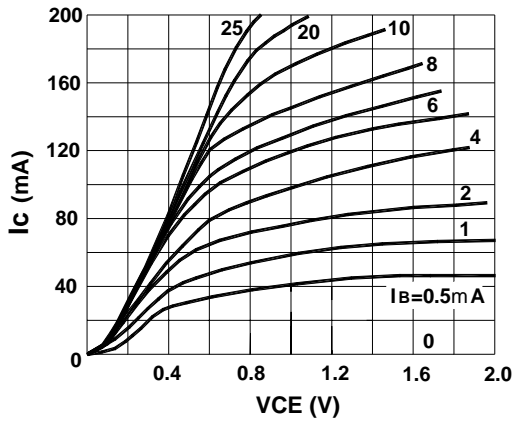
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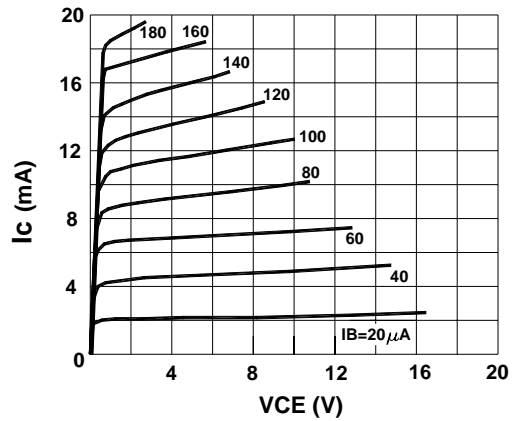
ISO/TS 16949 : 2002 Certificate No. 05103  
 ISO 14001:2004 Certificate No. 7116  
 ISO 9001:2000 Certificate No. 0506098

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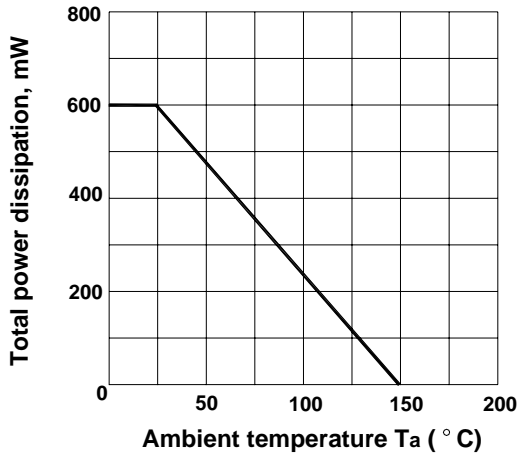
Collector current vs. collector emitter voltage



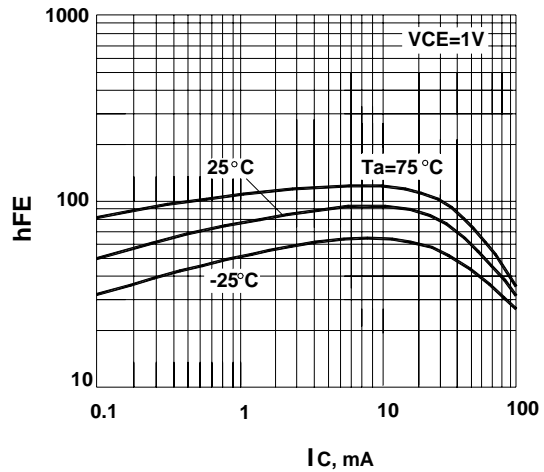
Collector current vs. collector emitter voltage



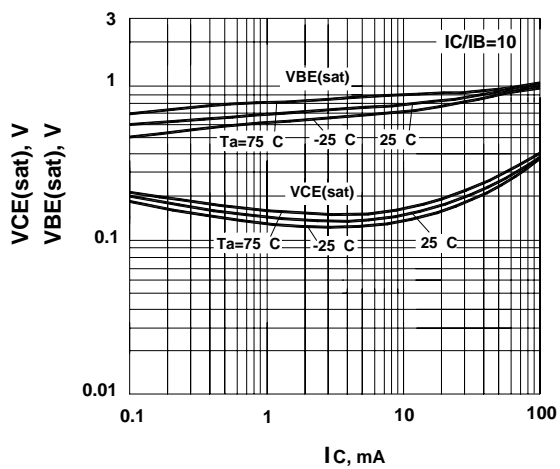
Total power dissipation vs. ambient temperature



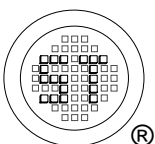
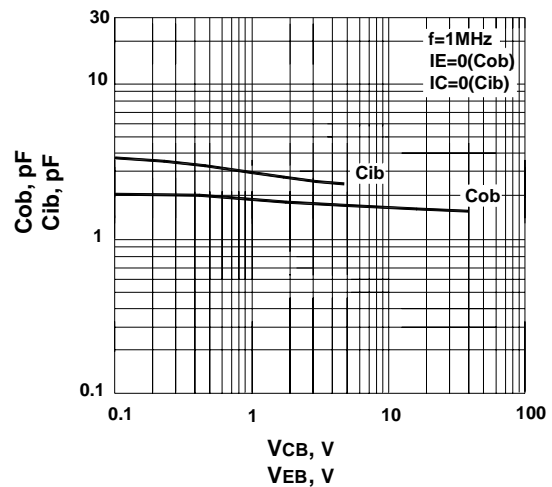
DC current gain vs. collector current



Base and collector saturation voltage vs. collector current



Input and output capacitance vs. reverse voltage



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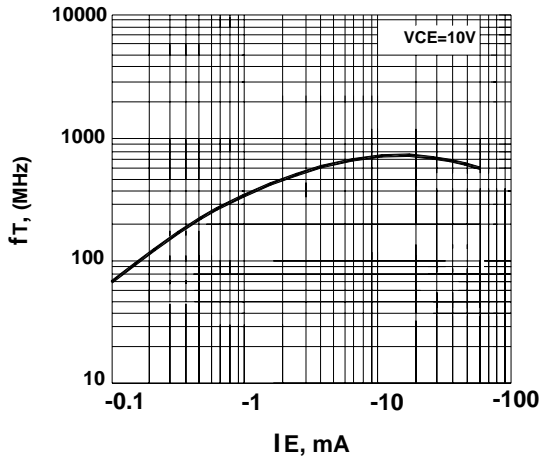
ISO 14001:2004  
Certificate No. 7116



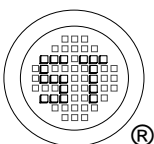
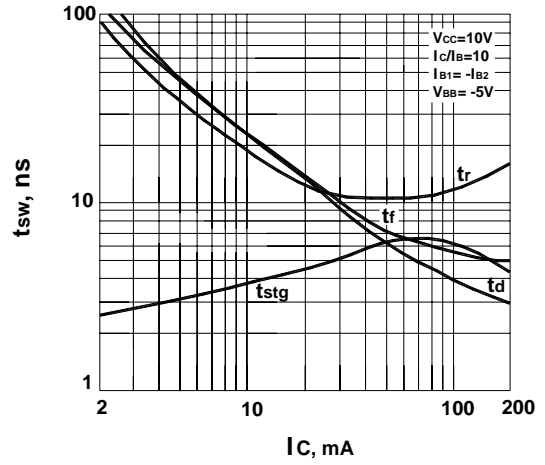
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Gain bandwidth product vs. emitter current



Switching time vs. collector current



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