

<b>SANYO</b>	No.2960	2SC4002
	NPN Triple Diffused Planar Silicon Transistor	
High-Voltage Driver Applications		

**Features**

- High breakdown voltage
- Adoption of MBIT process
- Excellent  $h_{FE}$  linearity

**Absolute Maximum Ratings at  $T_a = 25^\circ\text{C}$**

			unit
Collector to Base Voltage	$V_{CBO}$	400	V
Collector to Emitter Voltage	$V_{CEO}$	400	V
Emitter to Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	200	mA
Collector Current(Pulse)	$I_{CP}$	400	mA
Collector Dissipation	$P_C$	600	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

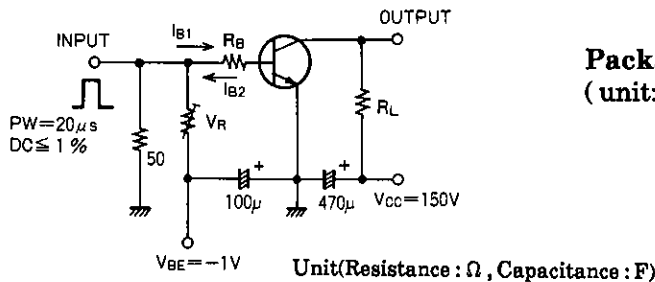
**Electrical Characteristics at  $T_a = 25^\circ\text{C}$**

			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 300\text{V}, I_E = 0$			0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 4\text{V}, I_C = 0$			0.1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = 10\text{V}, I_C = 50\text{mA}$	60*		200*	
Gain-Bandwidth Product	$f_T$	$V_{CE} = 30\text{V}, I_C = 10\text{mA}$		70		MHz
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = 50\text{mA}, I_B = 5\text{mA}$			0.6	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = 50\text{mA}, I_B = 5\text{mA}$			1.0	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	400			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, R_{BE} = \infty$	400			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	5			V
Output Capacitance	$c_{ob}$	$V_{CB} = 30\text{V}, f = 1\text{MHz}$		4		pF
Reverse Transfer Capacitance	$c_{re}$	$V_{CB} = 30\text{V}, f = 1\text{MHz}$		3		pF
Turn-ON Time	$t_{on}$	See specified Test Circuit.		0.25		$\mu\text{s}$
Turn-OFF Time	$t_{off}$	"		5.0		$\mu\text{s}$

\*: The 2SC4002 is classified by 50mA  $h_{FE}$  as follows:

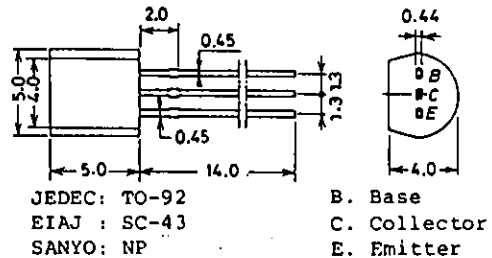
60	D	120	100	E	200
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**Switching Time Test Circuit**

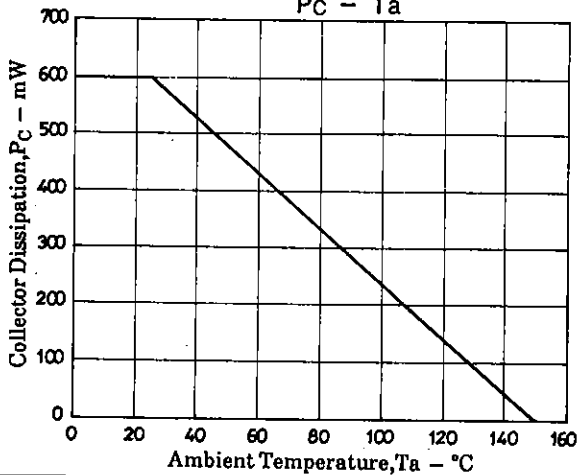
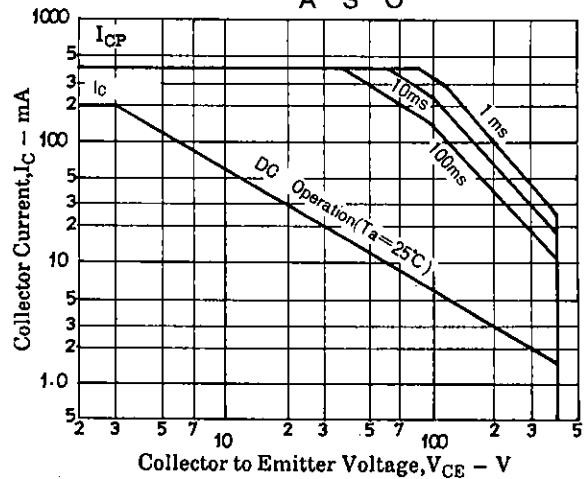
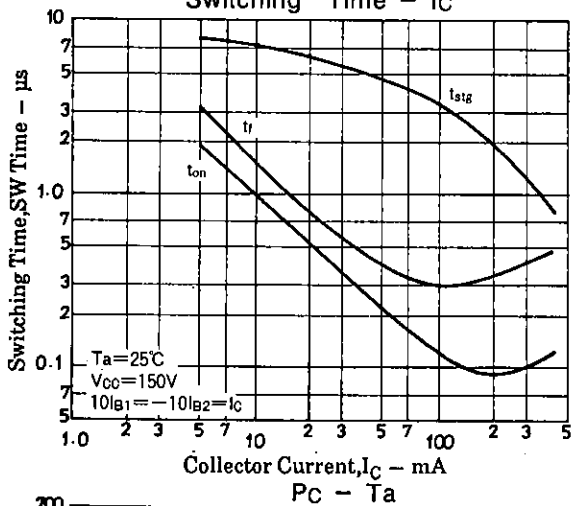
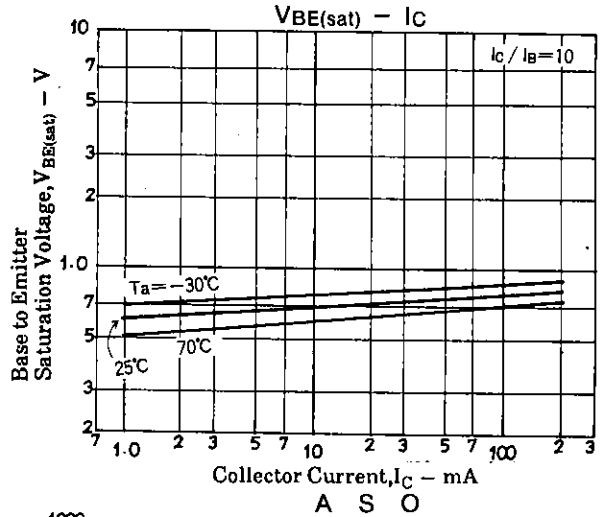
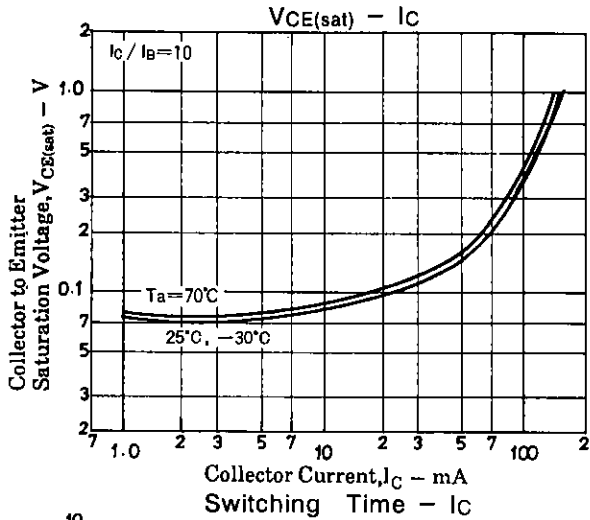
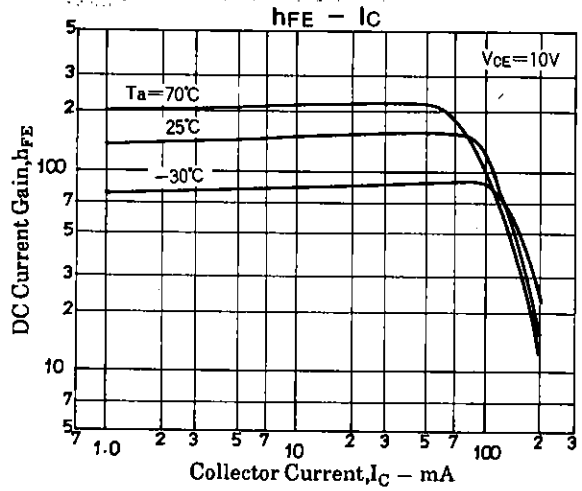
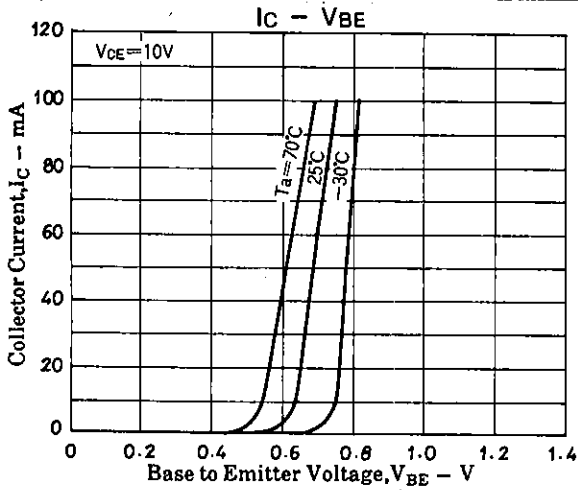


$10I_{B1} = -10I_{B2} = I_C = 50\text{mA}$   
 $R_L = 3\text{k}\Omega, R_B = 200\Omega$  at  $I_C = 50\text{mA}$

**Package Dimensions 2003A**  
(unit: mm)



25C4002



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