

SANYO	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	$^\circ\text{C}$

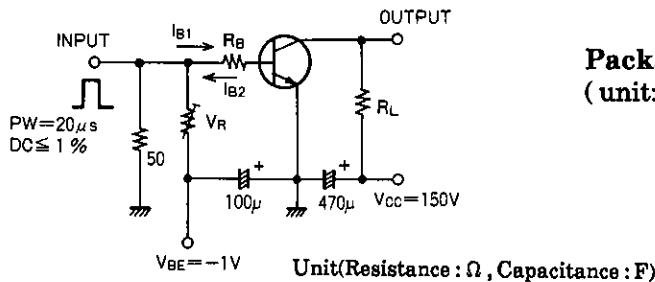
Electrical Characteristics at $T_a = 25^\circ\text{C}$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 300\text{V}, I_E = 0$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$			0.1	μA
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		μs
Turn-OFF Time	t_{off}	"		5.0		μs

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

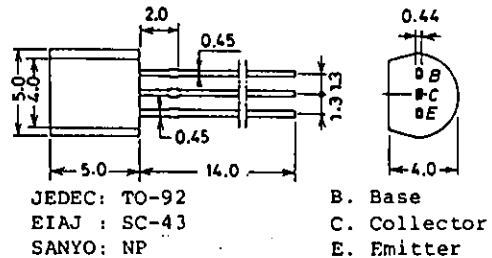
60	D	120	100	E	200
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Switching Time Test Circuit

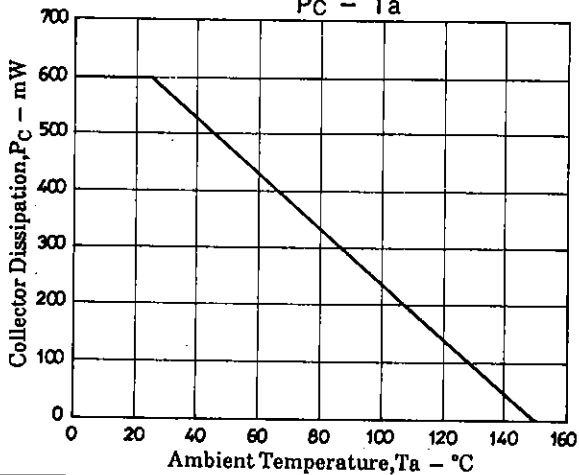
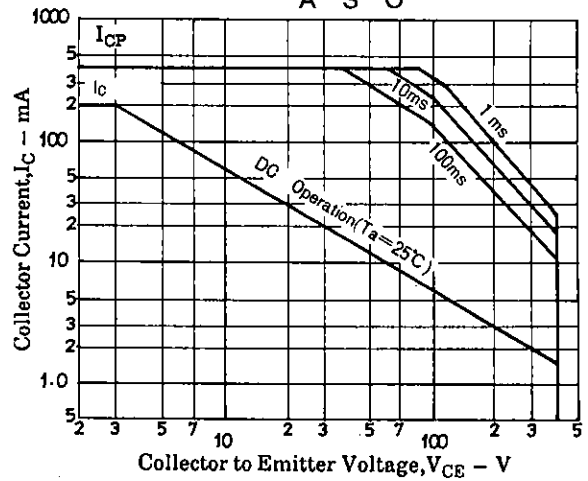
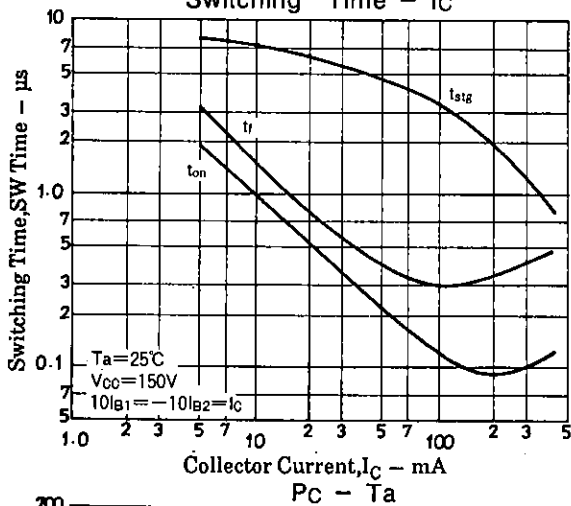
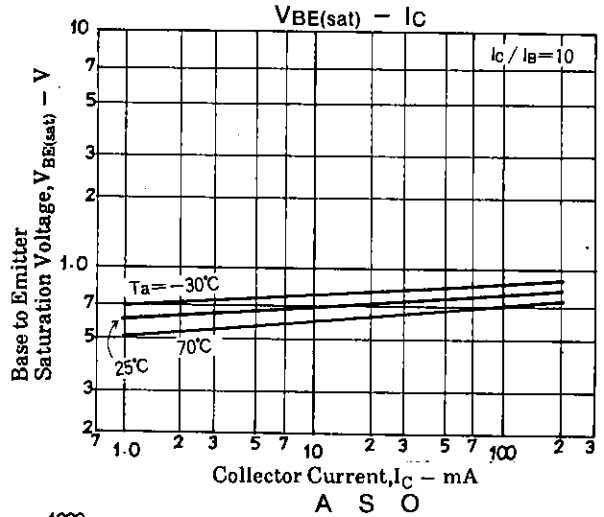
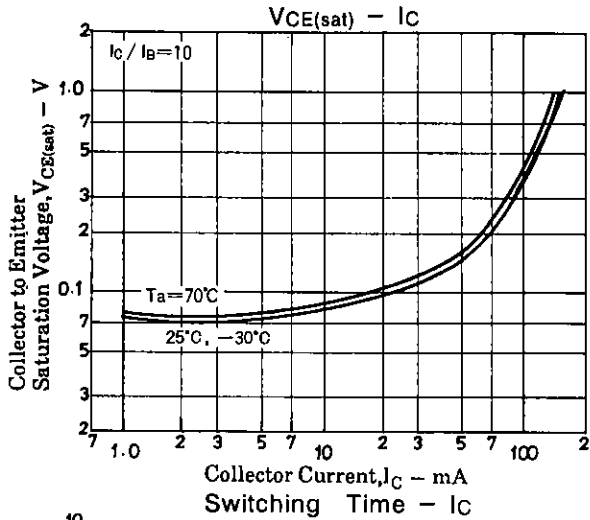
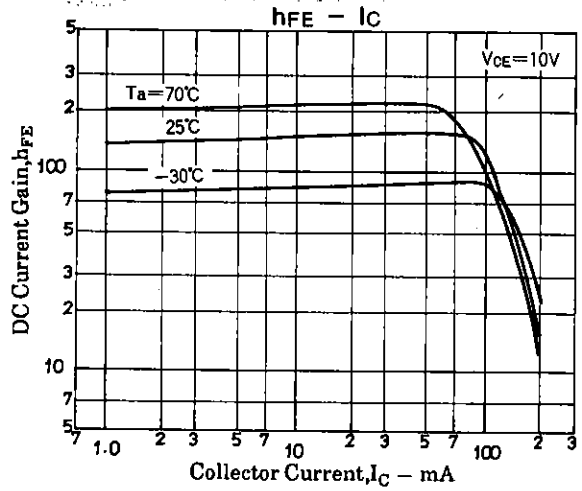
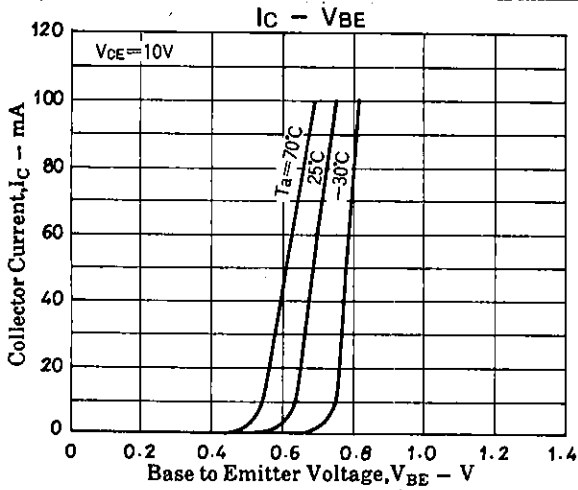


$10I_{B1} = -10I_{B2} = I_C = 50\text{mA}$
 $R_L = 3\text{k}\Omega, R_B = 200\Omega$ at $I_C = 50\text{mA}$

Package Dimensions 2003A
(unit: mm)



25C4002



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