NPN Triple Diffused Planar Silicon Transistor



2SC4002

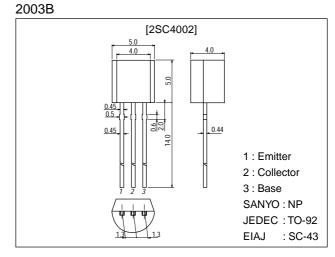
High-Voltage Driver Applications

Features

- · High breakdown voltage.
- \cdot Adoption of MBIT process.
- \cdot Excellent h_{FE} linearity.

Package Dimensions

unit:mm



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CBO}		400	V
Collector-to-Emitter Voltage	VCEO		400	V
Emitter-to-Base Voltage	V _{EBO}		5	V
Collector Current	ι _C		200	mA
Collector Current (Pulse)	I _{CP}		400	mA
Collector Dissipation	PC		600	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Symbol	Conditions	Ratings			Unit
		min	typ	max	
I _{CBO}	V _{CB} =300V, I _E =0			0.1	μA
IEBO	V _{EB} =4V, I _C =0			0.1	μA
h _{FE}	V _{CE} =10V, I _C =50mA	60*		200*	
fT	V _{CE} =30V, I _C =10mA		70		MHz
V _{CE(sat)}	I _C =50mA, I _B =5mA			0.6	V
V _{BE(sat)}	I _C =50mA, I _B =5mA			1.0	V
	ICBO IEBO hFE f _T VCE(sat)	ICBO VCB=300V, IE=0 IEBO VEB=4V, IC=0 hFE VCE=10V, IC=50mA fT VCE=30V, IC=10mA VCE(sat) IC=50mA, IB=5mA	min ICBO VCB=300V, IE=0 IEBO VEB=4V, IC=0 hFE VCE=10V, IC=50mA fT VCE=30V, IC=10mA VCE(sat) IC=50mA, IB=5mA	Symbol Conditions min typ ICBO VCB=300V, IE=0 </td <td>Symbol Conditions min typ max ICBO VCB=300V, IE=0 0.1 0.1 IEBO VEB=4V, IC=0 0.1 0.1 hFE VCE=10V, IC=50mA 60* 200* fT VCE=30V, IC=10mA 70 70 VCE(sat) IC=50mA, IB=5mA 0.6 0.6</td>	Symbol Conditions min typ max ICBO VCB=300V, IE=0 0.1 0.1 IEBO VEB=4V, IC=0 0.1 0.1 hFE VCE=10V, IC=50mA 60* 200* fT VCE=30V, IC=10mA 70 70 VCE(sat) IC=50mA, IB=5mA 0.6 0.6

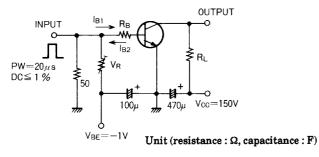
* : The 2SC4002 is classified by 50mA h_{FE} as follows : 60 D 120 100 E 200

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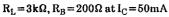
SANYO Electric Co., Ltd. Semiconductor Bussiness Headquaters TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

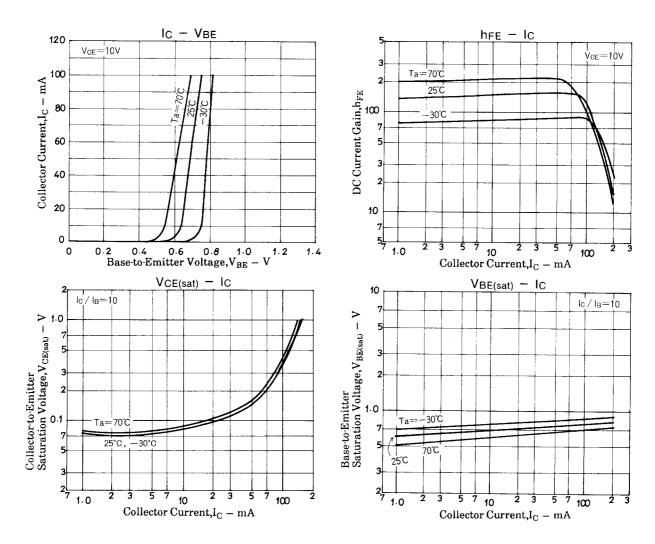
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	V(BR)CBO	I _C =10μA, I _E =0	400			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	I _C =1mA, R _{BE} =∞	400			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	I _E =10μA, I _C =0	5			V
Output Capacitance	C _{ob}	V _{CB} =30V, f=1MHz		4		pF
Reverse Transfer Capacitance	C _{re}	V _{CB} =30V, f=1MHz		3		pF
Turn-ON Time	ton	See specified test circuit.		0.25		μs
Turn-OFF Time	^t off	See specified test circuit.		5.0		μs

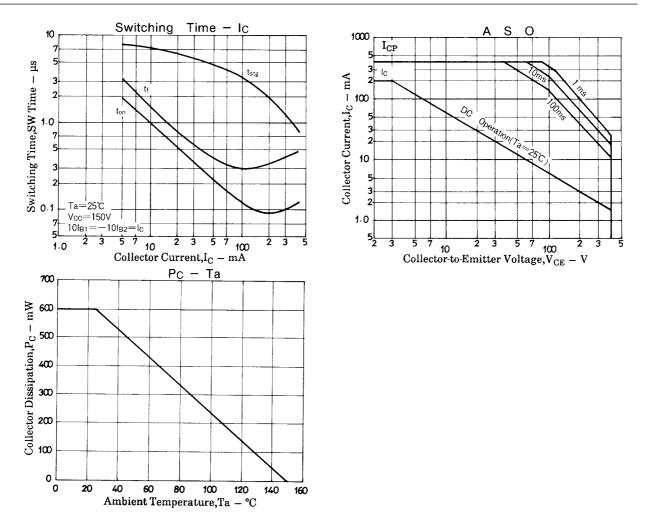
Switching Time Test Circuit



 $¹⁰I_{B1} = -10I_{B2} = I_{C} = 50 \text{mA}$







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