

**SANYO**

No.1071D

**2SC3152**

NPN Triple Diffused Planar Silicon Transistor

## Switching Regulator Applications

**Features**

- High breakdown voltage ( $V_{CBO} \geq 900V$ ).
- High switching speed.
- Wide ASO.

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

			unit
Collector-to-Base Voltage	$V_{CBO}$	900	V
Collector-to-Emitter Voltage	$V_{CEO}$	800	V
Emitter-to-Base Voltage	$V_{EBO}$	7	V
Collector Current	$I_C$	3	A
Collector Current (Pulse)	$I_{CP}$	Pulse, $PW \leq 300\mu s$ , Duty Cycle $\leq 10\%$	
Base Current	$I_B$	1.5	A
Collector Dissipation	$P_C$	$T_c = 25^\circ C$	
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55 to +150 $^\circ C$	

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

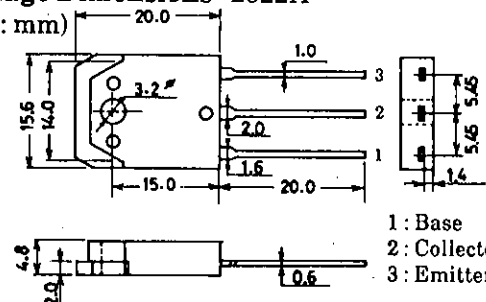
			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 800V, I_E = 0$			10	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$			10	$\mu A$
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 5V, I_C = 0.2A$	10*		40*	
	$h_{FE(2)}$	$V_{CE} = 5V, I_C = 1A$	8			
Gain-Bandwidth Product	$f_T$	$V_{CE} = 10V, I_C = 0.2A$		15		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = 10V, f = 1MHz$		60		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = 1.5A, I_B = 0.3A$			2.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = 1.5A, I_B = 0.3A$			1.5	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 1mA, I_E = 0$	900			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 5mA, R_{BE} = \infty$	800			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1mA, I_C = 0$	7			V
C-E Sustain Voltage	$V_{CEO(sus)}$	$I_C = 3A, L = 50\mu H, I_B = 1A$	800			V
	$V_{CEX(sus)(1)}$	$I_C = 1A, I_{B1} = 0.2A, I_{B2} = -0.2A,$ $L = 2mH, \text{Clamped}$	800			V
	$V_{CEX(sus)(2)}$	$I_C = 0.5A, I_{B1} = 0.4A, I_{B2} = -0.1A,$ $L = 5mH, \text{Clamped}$	900			V
Rise Time	$t_{on}$	$I_C = 2A, I_{B1} = 0.4A, I_{B2} = -0.8A,$ $R_L = 20\Omega, V_{CC} = 400V$			1.0	ns
Storage Time	$t_{stg}$				3.0	ns
Fall Time	$t_f$				0.7	ns

\* : For the  $h_{FE(1)}$  of the 2SC3152, specify two ranks or more in principle.

10	K	20	15	L	30	20	M	40
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**Package Dimensions 2022A**

(unit : mm)

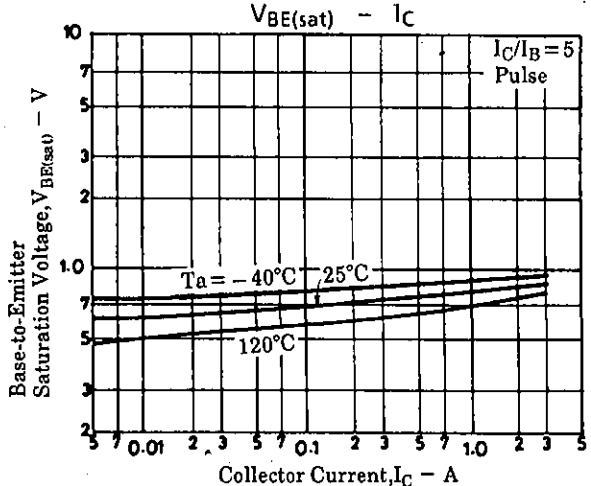
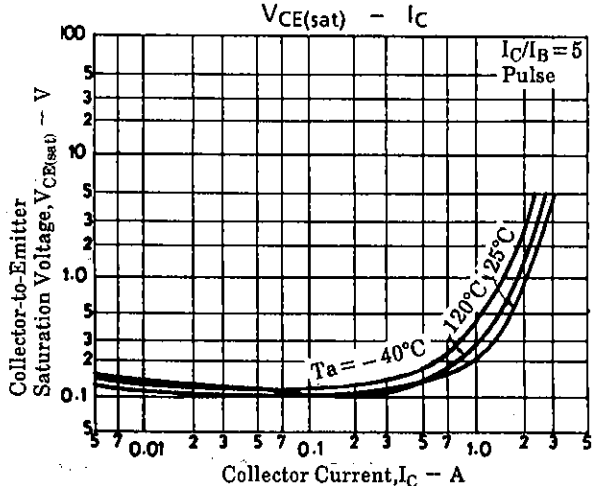
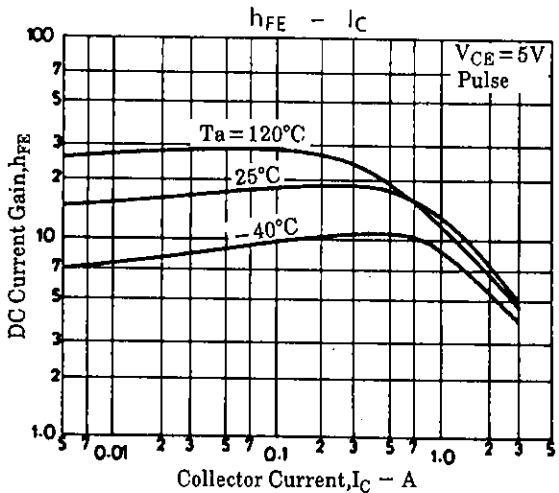
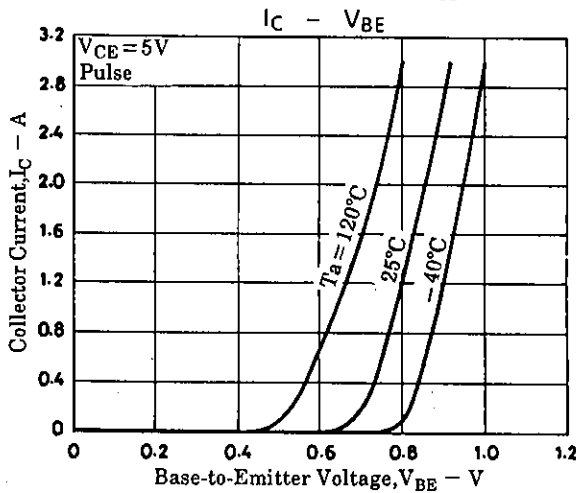
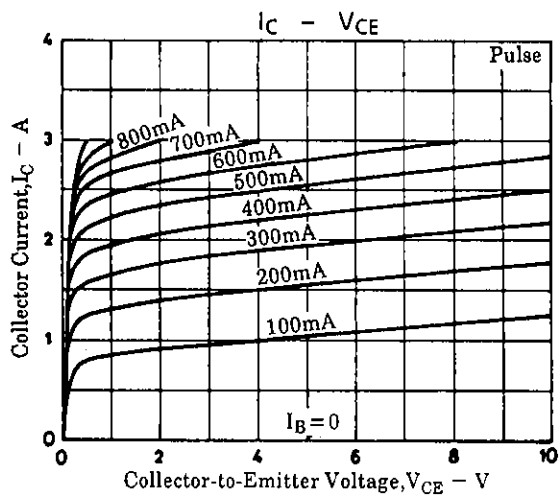
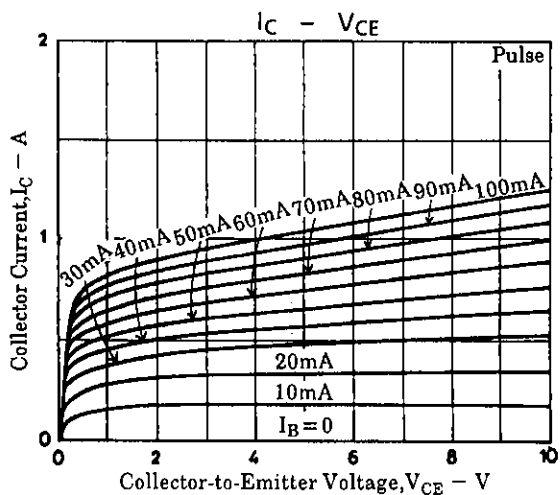
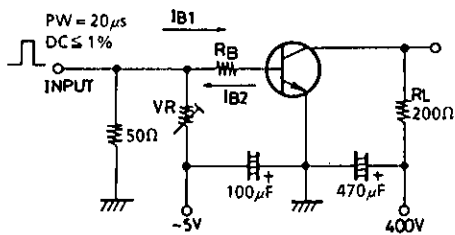


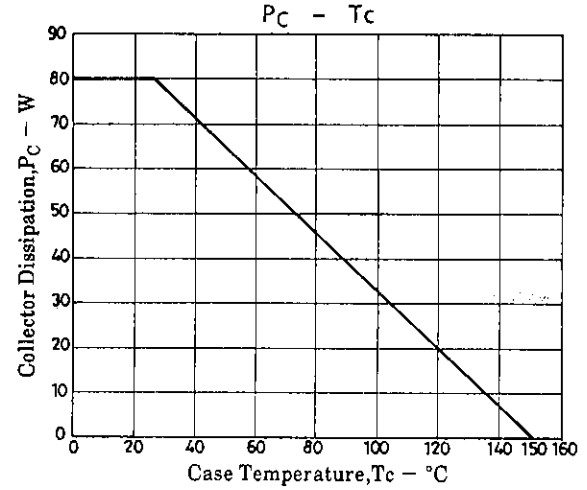
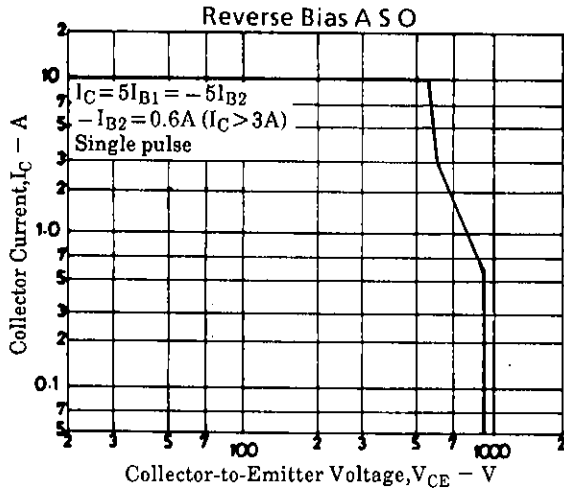
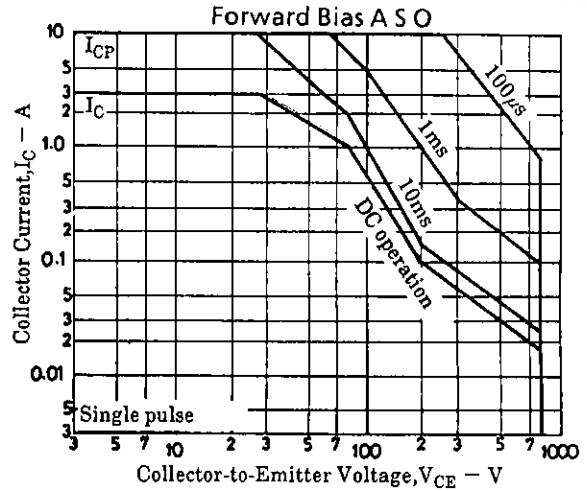
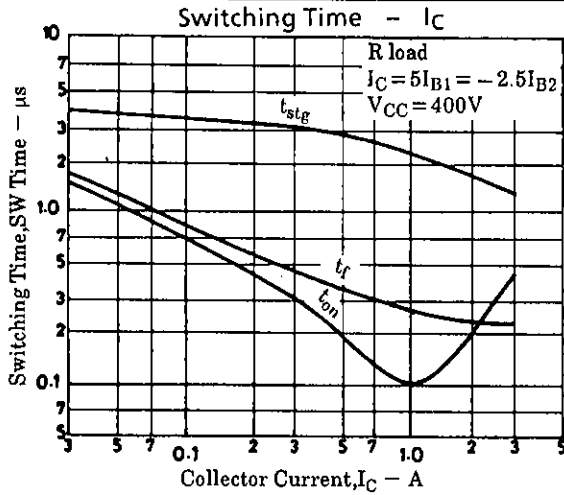
1: Base  
2: Collector  
3: Emitter

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Switching Time Test Circuit





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