

<b>SANYO</b>	No.2847	<b>2SC4424</b>
		NPN Triple Diffused Planar Silicon Transistor
		Switching Regulator Applications

**Features**

- High breakdown voltage, high reliability
- Fast switching speed ( $t_f$ : 0.1 $\mu$ s typ)
- Wide ASO
- Adoption of MBIT process
- Micaless package facilitating easy mounting

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

			unit
Collector-to-Base Voltage	$V_{CB0}$	500	V
Collector-to-Emitter Voltage	$V_{CE0}$	400	V
Emitter-to-Base Voltage	$V_{EB0}$	7	V
Collector Current	$I_C$	16	A
Peak Collector Current	$i_{cp}$	32	A
Base Current	$I_B$	6	A
Collector Dissipation	$P_C$	3	W
		$T_C = 25^\circ\text{C}$	
Junction Temperature	$T_j$	60	W
Storage Temperature	$T_{stg}$	150	$^\circ\text{C}$
		-55 to +150	$^\circ\text{C}$

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

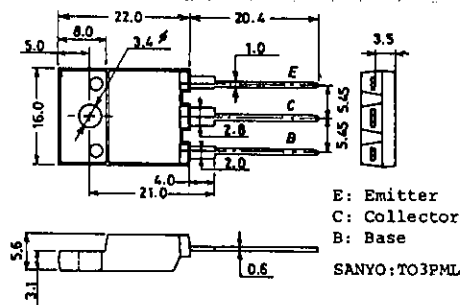
			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 400\text{V}, I_E = 0$			10	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 5\text{V}, I_C = 0$			10	$\mu\text{A}$
DC Current Gain	$h_{FE(1)*}$	$V_{CE} = 5\text{V}, I_C = 2\text{A}$	15		50	
	$h_{FE(2)}$	$V_{CE} = 5\text{V}, I_C = 10\text{A}$	10			
	$h_{FE(3)}$	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$	10			
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{A}, I_B = 2\text{A}$			0.8	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = 10\text{A}, I_B = 2\text{A}$			1.5	V
Gain-Bandwidth Product	$f_T$	$V_{CE} = 10\text{V}, I_C = 2\text{A}$		20		MHz
Output Capacitance	$c_{ob}$	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		230		pF
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 1\text{mA}, I_E = 0$	500			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}, R_{BE} = \infty$	400			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1\text{mA}, I_C = 0$	7			V
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C = 8\text{A}, I_{B1} = 0.8\text{A}$	400			V
		$I_{B2} = -3.2\text{A}, L = 200\mu\text{H}, \text{clamped}$				

Continued on next page.

\*: The  $h_{FE(1)}$  of the 2SC4424 is classified as follows. When specifying the  $h_{FE(1)}$  rank, specify two ranks or more in principle.

15 L 30	20 M 40	30 N 50
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**Package Dimensions 2039**  
(unit: mm)



2SC4424

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Turn-on Time

$t_{on}$

$I_C = 12A, I_{B1} = 2.4A$   
 $I_{B2} = -4.8A, R_L = 16.6\Omega$   
 $V_{CC} = 200V$

min typ max unit  
 0.5  $\mu s$

Storage Time

$t_{stg}$

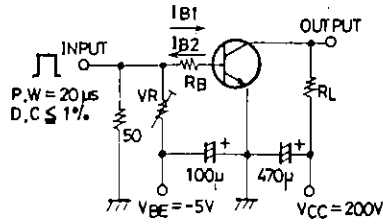
2.5  $\mu s$

Fall Time

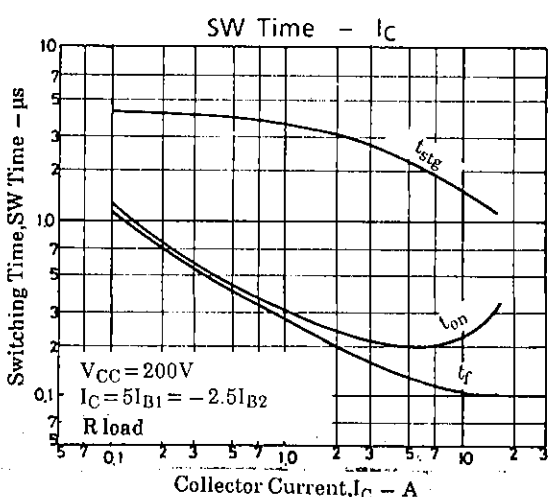
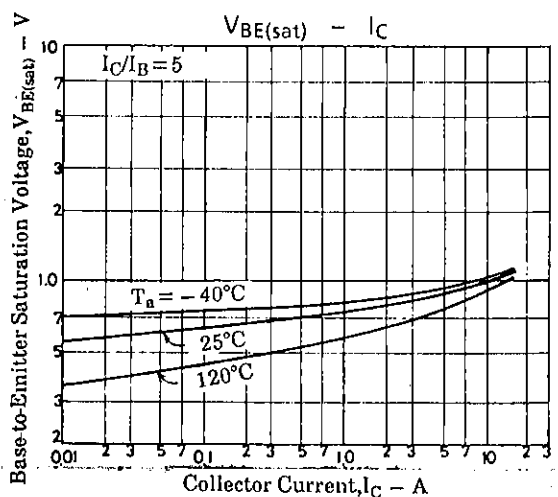
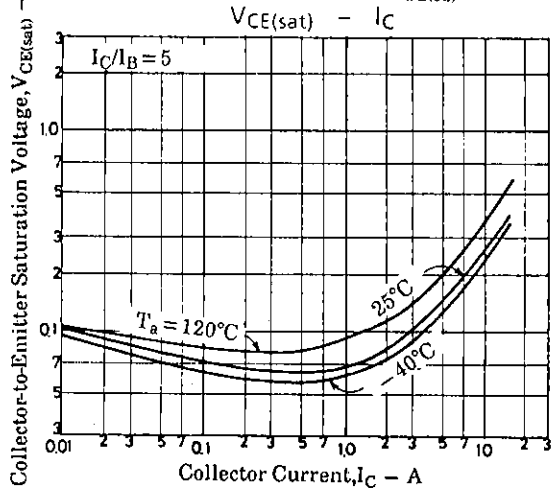
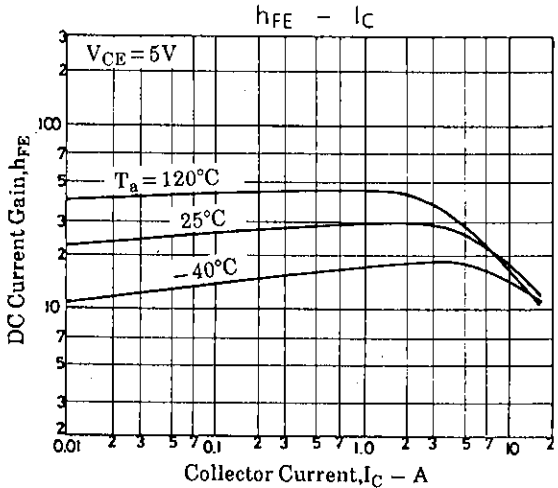
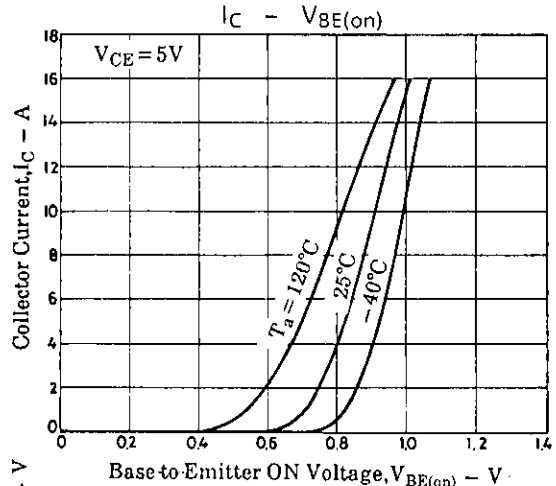
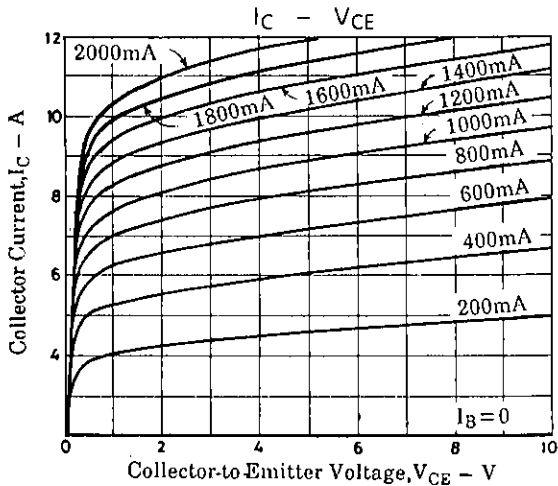
$t_f$

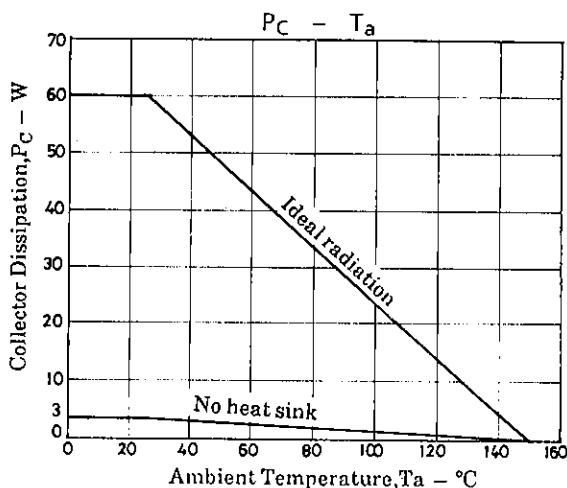
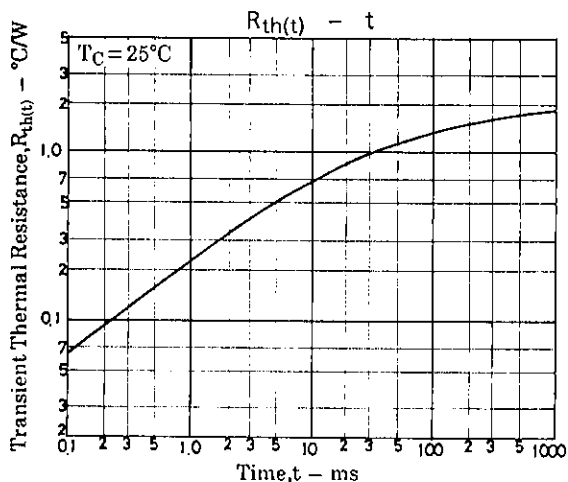
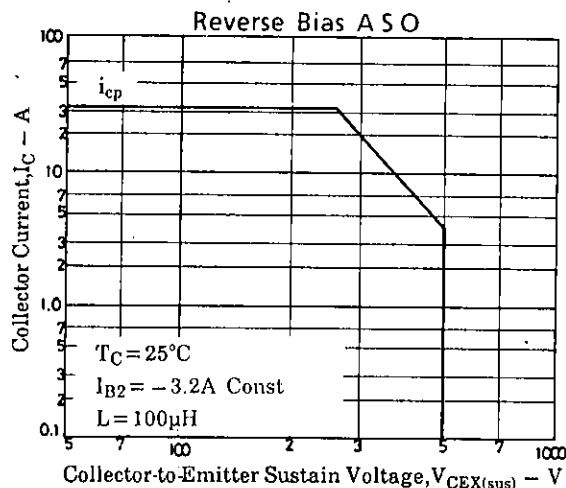
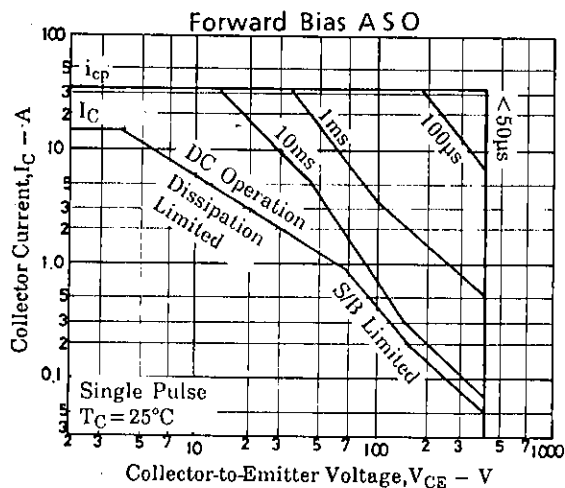
0.3  $\mu s$

Switching Time Test Circuit



Unit (resistance:  $\Omega$ , capacitance: F)





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