

SANYO	No.2847	2SC4424
NPN Triple Diffused Planar Silicon Transistor Switching Regulator Applications		

Features

- High breakdown voltage, high reliability
- Fast switching speed (t_f : 0.1 μ 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
Junction Temperature	T_j	60	W
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

$T_C = 25^\circ\text{C}$

$PW \leq 300\mu\text{s}, \text{duty cycle} \leq 10\%$

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	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$		10	μA
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

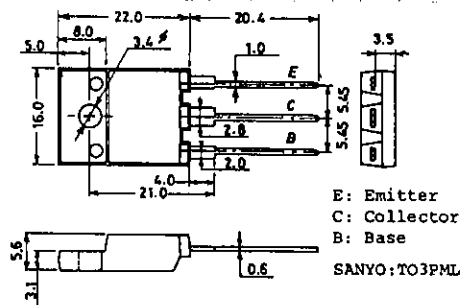
$I_{B2} = -3.2\text{A}, L = 200\mu\text{H}, \text{clamped}$

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 μs

Storage Time

t_{stg}

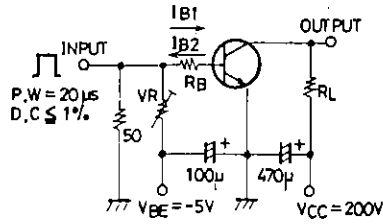
2.5 μs

Fall Time

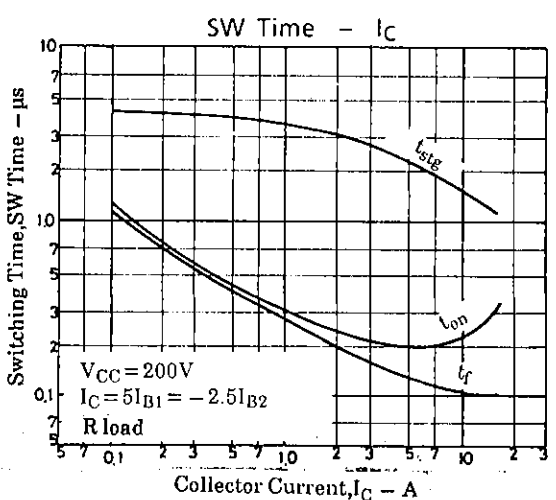
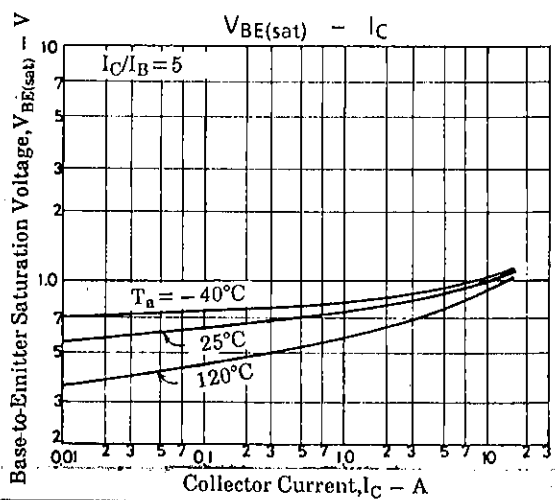
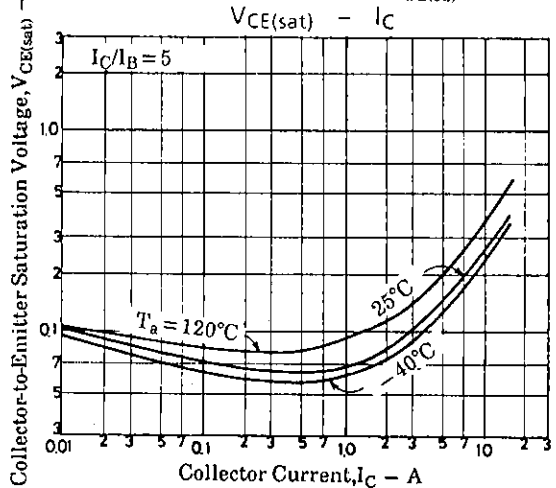
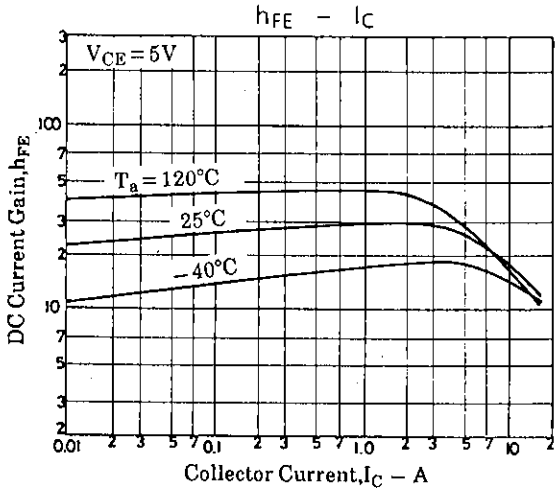
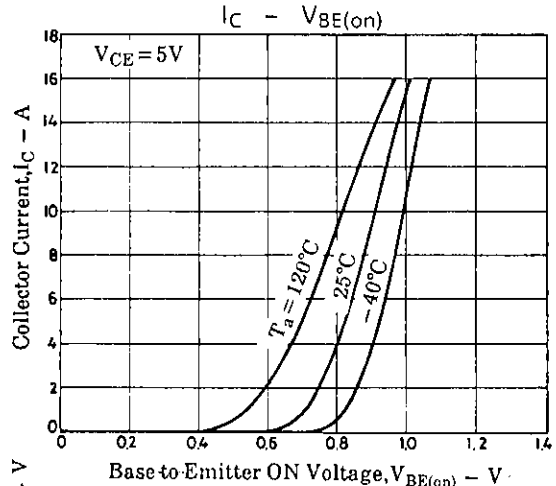
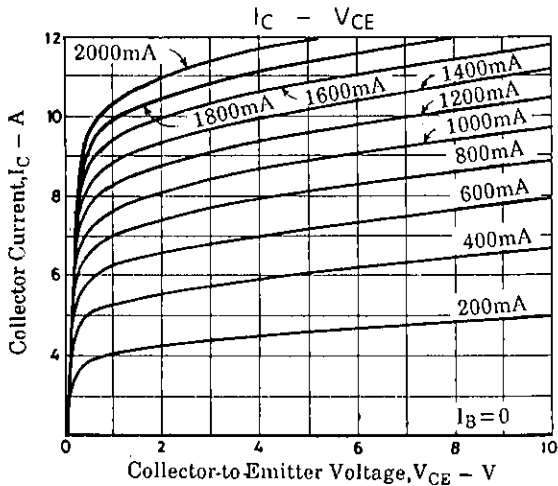
t_f

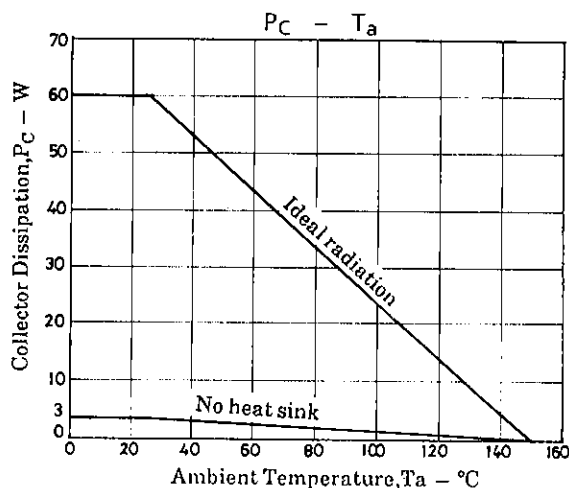
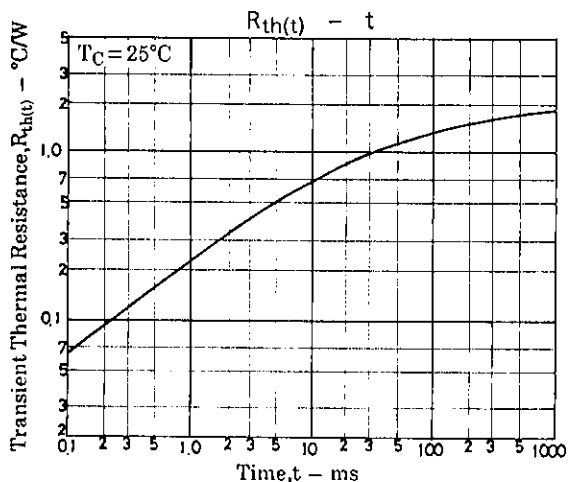
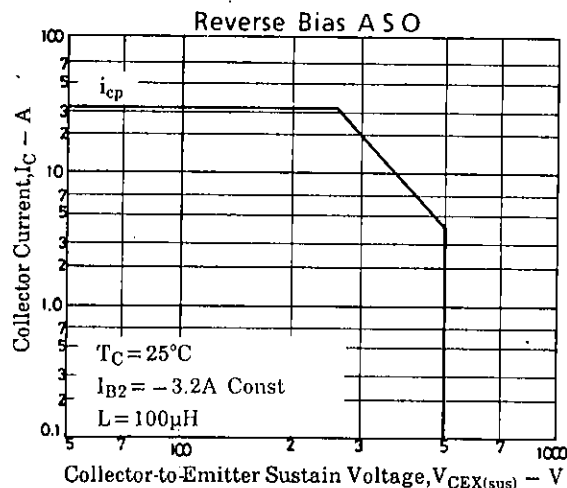
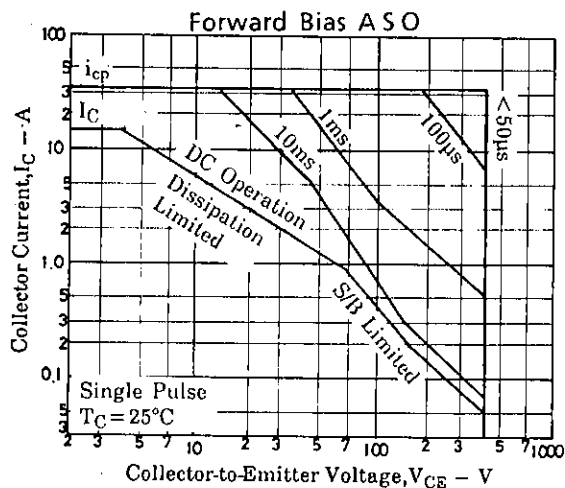
0.3 μs

Switching Time Test Circuit



Unit (resistance: Ω , capacitance: F)





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