Ordering number: EN 2847

SANYO No.2847

2SC4424

NPN Triple Diffused Planar Silicon Transistor

Switching Regulator Applications

Features

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

Absolute Maximum Ratings at Ta = 25°C

				unit
Collector-to-Base Voltage	V_{CBO}		500	V
Collector-to-Emitter Voltage	V_{CEO}		400	V
Emitter-to-Base Voltage	V_{EBO}		7	V
Collector Current	I_C		16	A
Peak Collector Current	i_{cp}	PW≦300μs, duty cycle ≦10%	32	A
Base Current	I_B		6	A
Collector Dissipation	P_C		3	W
		T_C=25°C	60	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Electrical Characteristics at Ta = 25°C

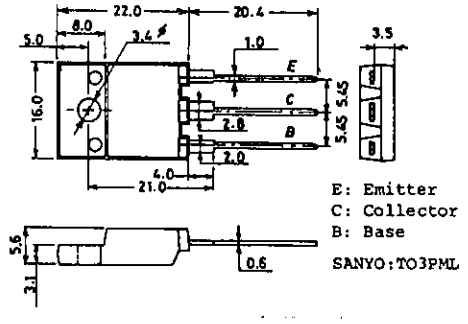
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB}=400V, I_E=0			10	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5V, I_C=0			10	μA
DC Current Gain	$h_{FE}(1)$*	V_{CE}=5V, I_C=2A	15		50	
	$h_{FE}(2)$	V_{CE}=5V, I_C=10A	10			
	$h_{FE}(3)$	V_{CE}=5V, I_C=10mA	10			
C-E Saturation Voltage	$V_{CE(sat)}$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

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

Package Dimensions 2039
(unit : mm)



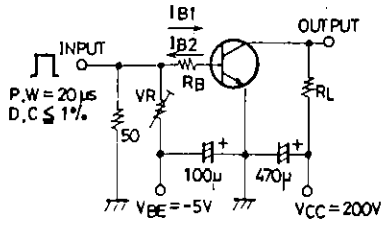
E: Emitter
C: Collector
B: Base
SANYO: TO3PML

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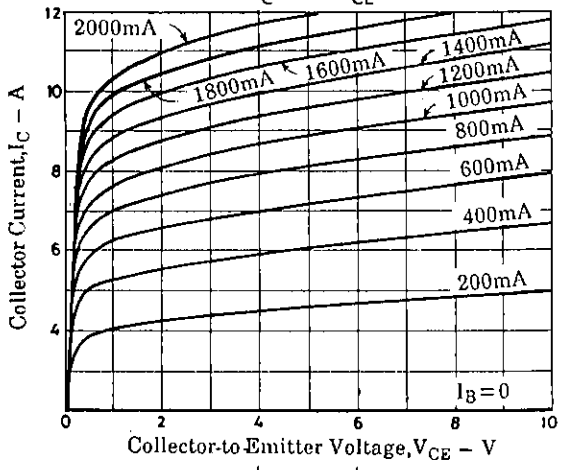
			min	typ	max	unit
Turn-on Time	t_{on}	$I_C=12A, I_{B1}=2.4A$ $I_{B2}=-4.8A, R_L=16.6\Omega$ $V_{CC}=200V$			0.5	μs
Storage Time	t_{stg}				2.5	μs
Fall Time	t_f				0.3	μs

Switching Time Test Circuit

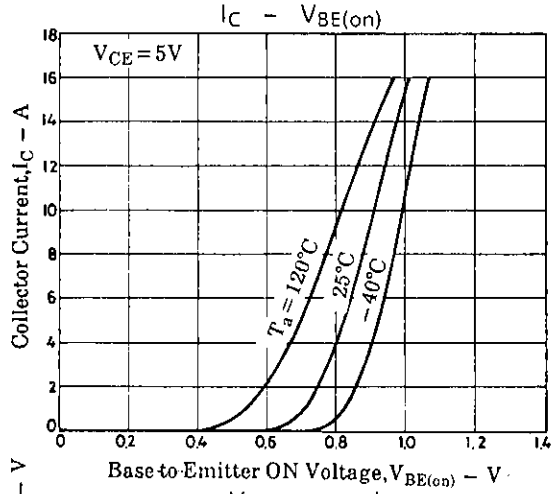


Unit (resistance: Ω, capacitance: F)

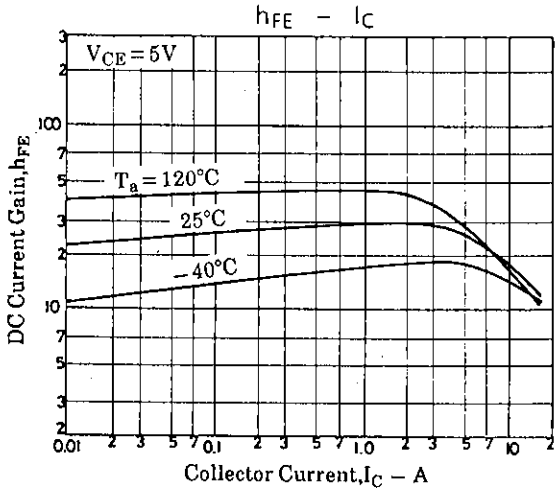
I_C – V_{CE}



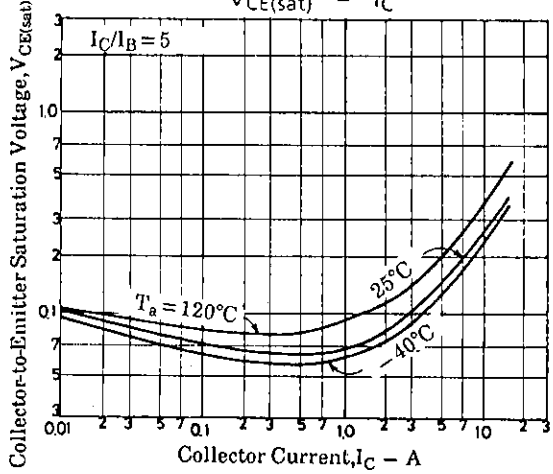
I_C – $V_{BE(on)}$



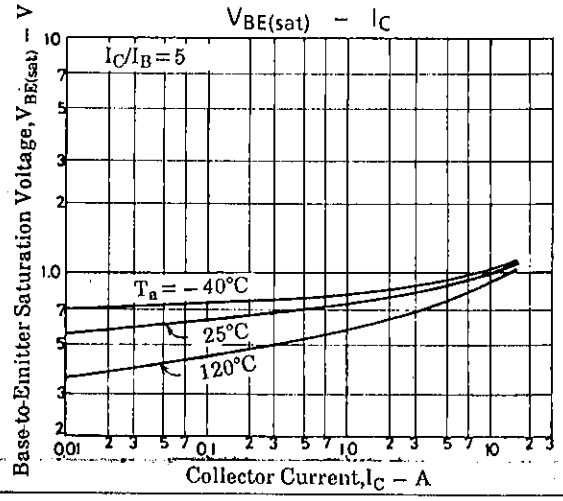
h_{FE} – I_C



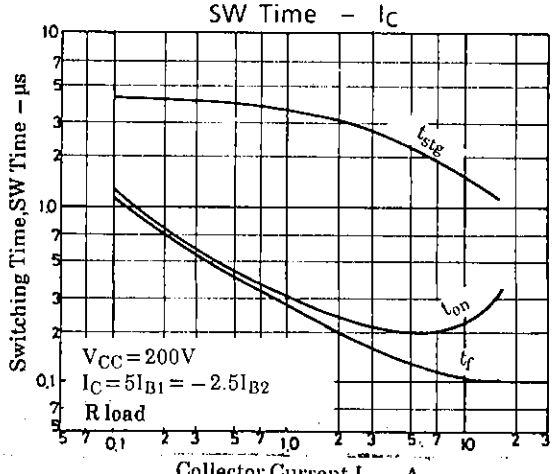
$V_{CE(sat)}$ – I_C

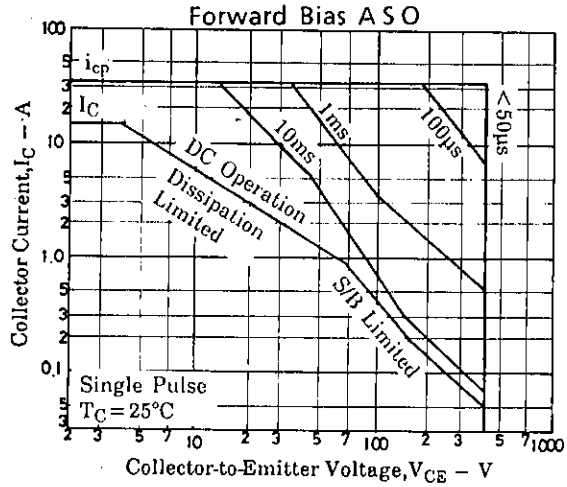


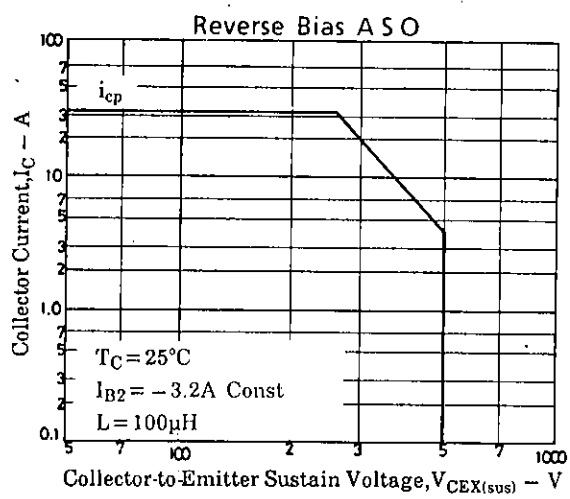
$V_{BE(sat)}$ – I_C

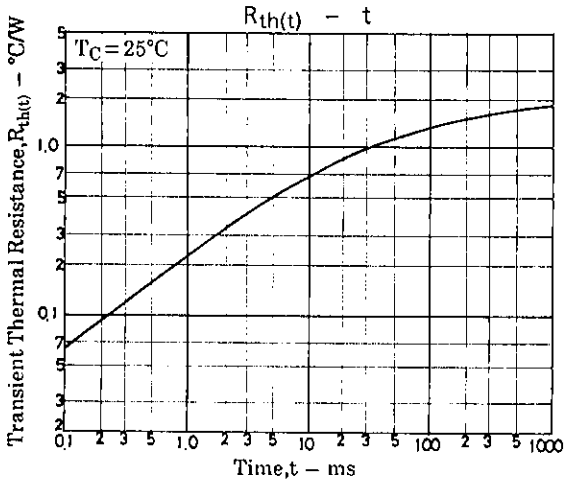


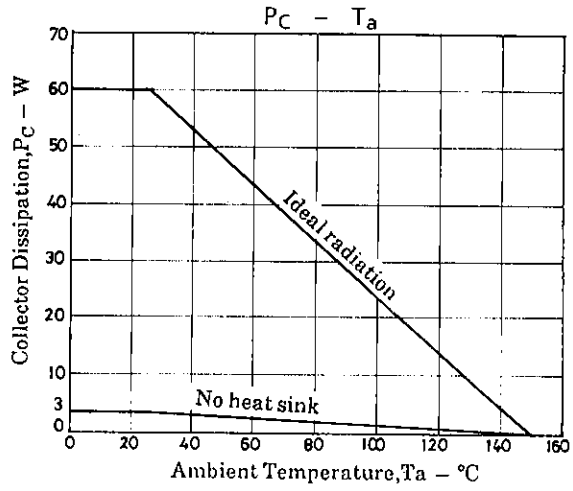
SW Time – I_C











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