Ordering number: EN 2851

SANYO

No.2851

2SC4428

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}		1100	V
Collector-to-Emitter Voltage	V_{CEO}		800	V
Emitter-to-Base Voltage	V_{EBO}		7	V
Collector Current	I_C		6	A
Peak Collector Current	i_{cp}	PW ≦ 300μs, duty cycle ≦ 10%	20	A
Base Current	I_B		3	A
Collector Dissipation	P_C		3	W
		T_C = 25°C	55	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} = 800V, 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 = 0.4A	10		40	
	$h_{FE}(2)$	V_{CE} = 5V, I_C = 2A	8			
C-E Saturation Voltage	$V_{CE(sat)}$	I_C = 3A, I_B = 0.6A			2.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	I_C = 3A, I_B = 0.6A			1.5	V
Gain-Bandwidth Product	f_T	V_{CE} = 10V, I_C = 0.4A		15		MHz
Output Capacitance	c_{ob}	V_{CB} = 10V, f = 1MHz		120		pF
C-B Breakdown Voltage	$V_{(BR)CBO}$	I_C = 1mA, I_E = 0	1100			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	I_C = 5mA, R_{BE} = ∞	800			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 = 3A, I_{B1} = 0.6A I_{B2} = −0.6A, L = 1mH, clamped	800			V

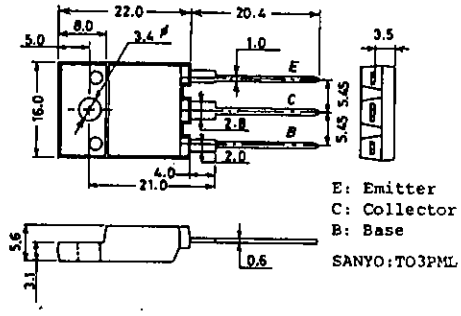
Continued on next page.

*: The $h_{FE}(1)$ of the 2SC4428 is classified as follows. When specifying the $h_{FE}(1)$ rank, specify two ranks or more in principle.

10 K 20	15 L 30	20 M 40

Package Dimensions 2039

(unit : mm)



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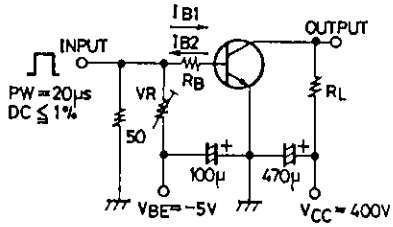
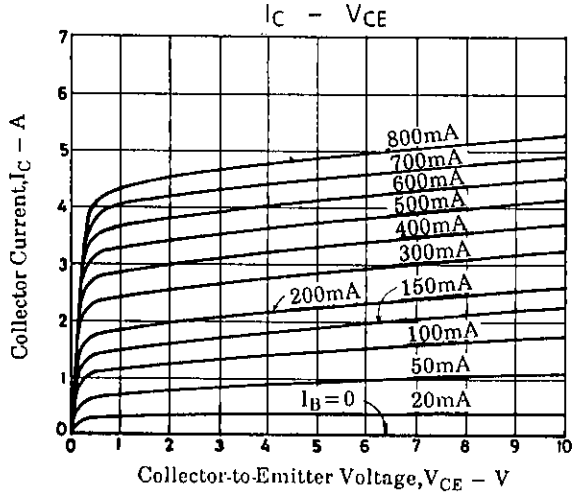
			min	typ	max	unit
Turn-on Time	t_{on}	$I_C=4A, I_{B1}=0.8A$ $I_{B2}=-1.6A, R_L=100\Omega$ $V_{CC}=400V$			0.5	μs
Storage Time	t_{stg}				3.0	μs
Fall Time	t_f				0.3	μs

Switching Time Test Circuit

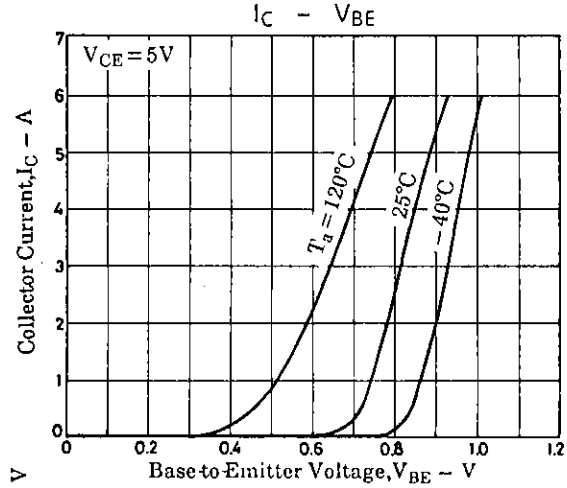


Unit (resistance: Ω, capacitance: F)

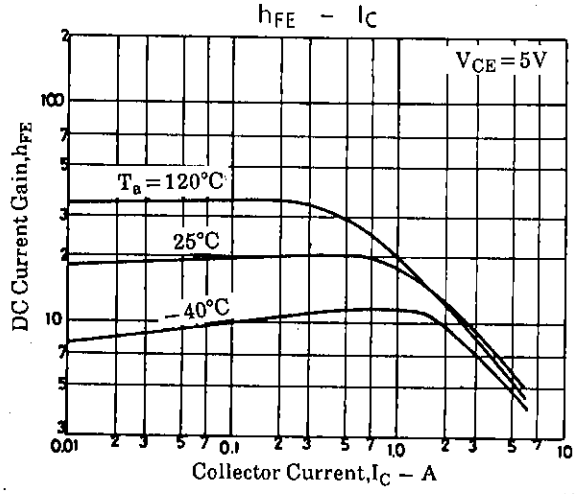
I_C – V_{CE}



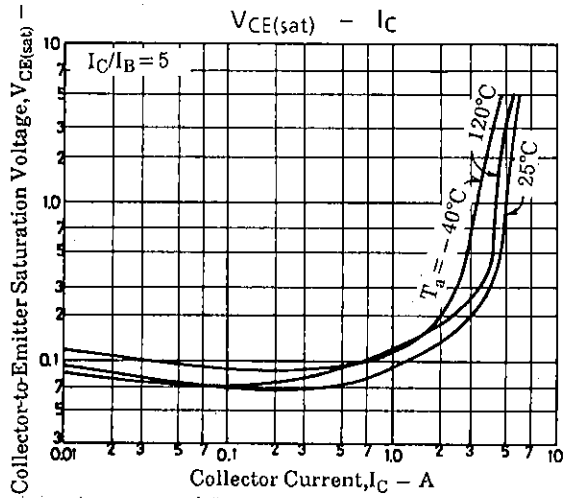
I_C – V_{BE}



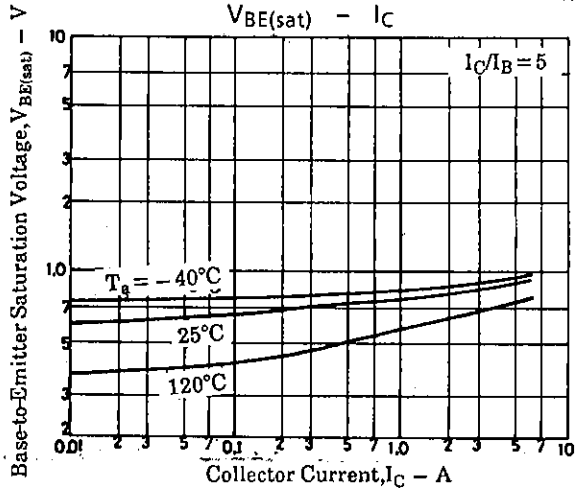
h_{FE} – I_C



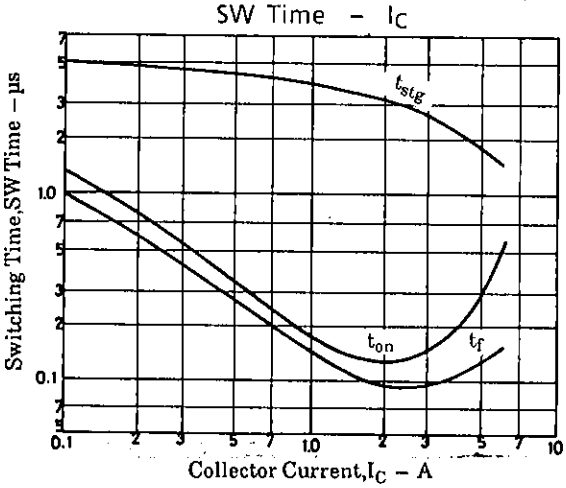
$V_{CE(sat)}$ – I_C



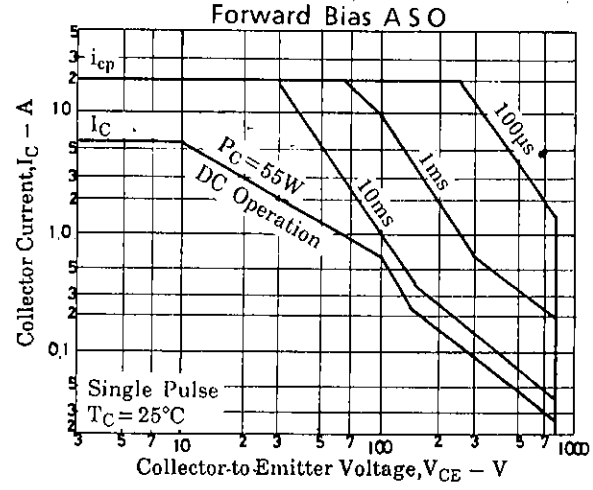
$V_{BE(sat)}$ – I_C



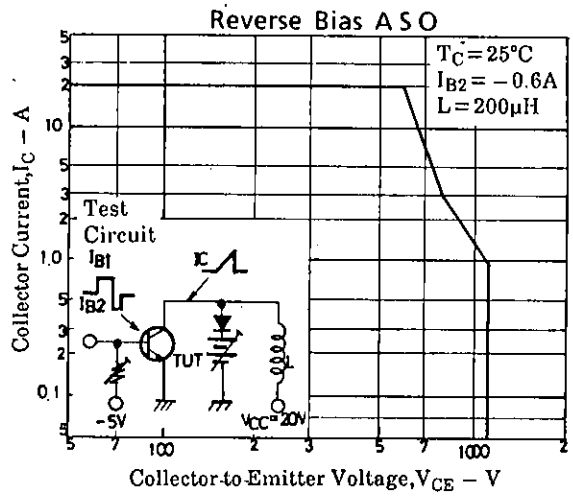
SW Time – I_C



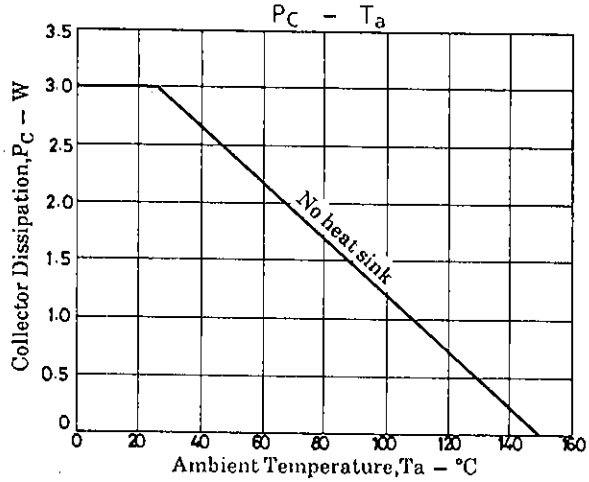
Forward Bias A S O



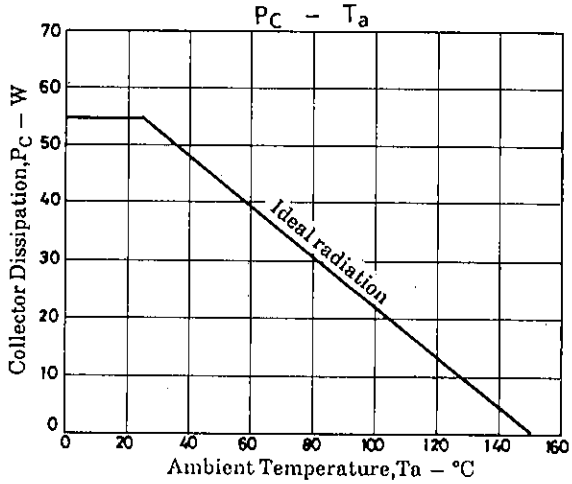
Reverse Bias A S O



P_C – T_a



P_C – T_a



$R_{th(t)}$ – t