

No.2851

2SC4428

NPN Triple Diffused Planar Silicon Transistor

800V/6A 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_{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
Collector Current (Pulse)	I_{CP}	PW \leq 300 μ s, duty cycle \leq 10%	
Base Current	I_B	3	A
Collector Dissipation	P_C	3	W
		$T_C = 25^\circ\text{C}$	
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

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

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 800\text{V}, I_E = 0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$			10	μA
DC Current Gain	$h_{FE}(1)^*$	$V_{CE} = 5\text{V}, I_C = 0.4\text{A}$	10		40	
	$h_{FE}(2)$	$V_{CE} = 5\text{V}, I_C = 2\text{A}$	8			
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = 3\text{A}, I_B = 0.6\text{A}$			2.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = 3\text{A}, I_B = 0.6\text{A}$			1.5	V
Gain-Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 0.4\text{A}$		15		MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		120		pF
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 1\text{mA}, I_E = 0$	1100			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 5\text{mA}, R_{BE} = \infty$	800			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1\text{mA}, I_C = 0$	7			V
C-E Sustain Voltage	$V_{CEX(sus)}$	$I_C = 3\text{A}, I_{B1} = 0.6\text{A}$	800			V
		$I_{B2} = -0.6\text{A}, L = 1\text{mH}, \text{clamped}$				

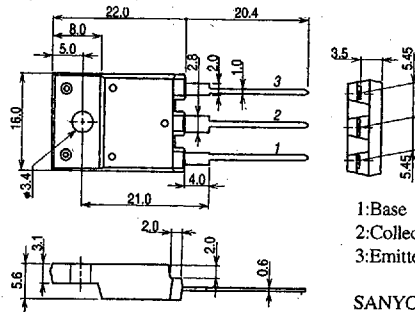
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*: The $h_{FE}(1)$ of the 2SC4428 is classified as follows. When specifying the $h_{FE}(1)$ rank, specify two ranks or more in principle.

10	K	20	15	L	30	20	M	40
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Package Dimensions 2039D

(unit: mm)



SANYO Electric Co., Ltd. Semiconductor Business Headquarters

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

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Turn-on Time

t_{on}

$I_C = 4A, I_{B1} = 0.8A$
 $I_{B2} = -1.6A, R_L = 100\Omega$
 $V_{CC} = 400V$

min typ max unit
 0.5 μs

Storage Time

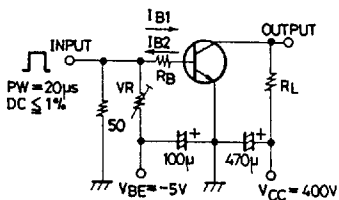
t_{stg}

Fall Time

t_f

3.0 μs
 0.3 μs

Switching Time Test Circuit



Unit (resistance : Ω , capacitance : F)

