

NPN Triple Diffused Planar Silicon Transistor

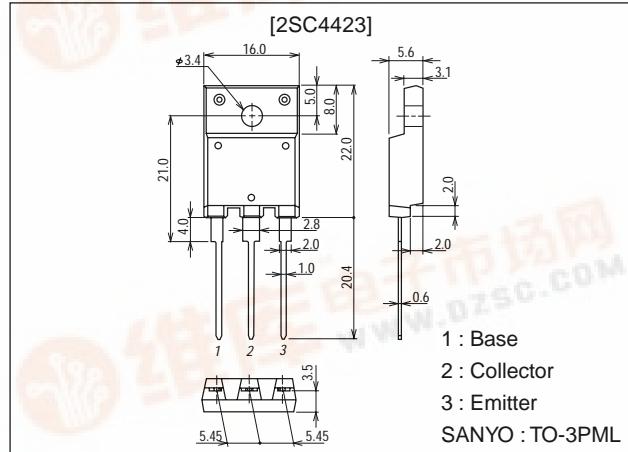
2SC4423**SANYO****400V/12A Switching Regulator Applications****Features**

- 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.

Package Dimensions

unit:mm

2039D

**Specifications****Absolute Maximum Ratings at $T_a = 25^\circ C$**

Parameter	Symbol	Conditions	Ratings		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			12	A
Collector Current (Pulse)	I_{CP}	$PW \leq 300\mu s$, duty cycle $\leq 10\%$		25	A
Base Current	I_B			4	A
Collector Dissipation	P_C			3	W
		$T_c = 25^\circ C$		55	W
Junction Temperature	T_j			150	°C
Storage Temperature	T_{stg}			-55 to +150	°C

Electrical Characteristics at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
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_{FE1}^*	$V_{CE}=5V$, $I_C=1.6A$		15		50
	h_{FE2}	$V_{CE}=5V$, $I_C=8A$		10		
	h_{FE3}	$V_{CE}=5V$, $I_C=10mA$		10		

*: The h_{FE1} of the 2SC4423 is classified as follows. When specifying the h_{FE1} rank, specify two ranks or more in principle.

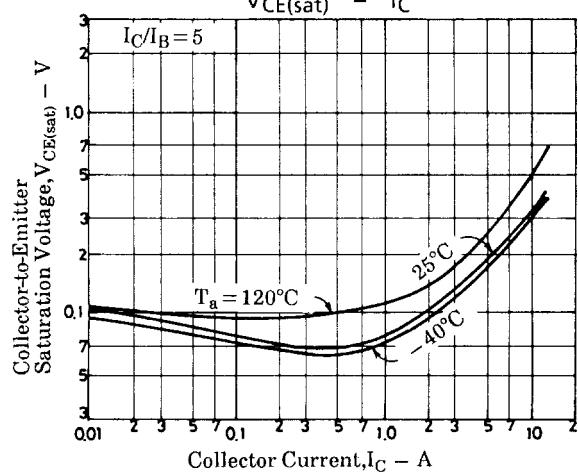
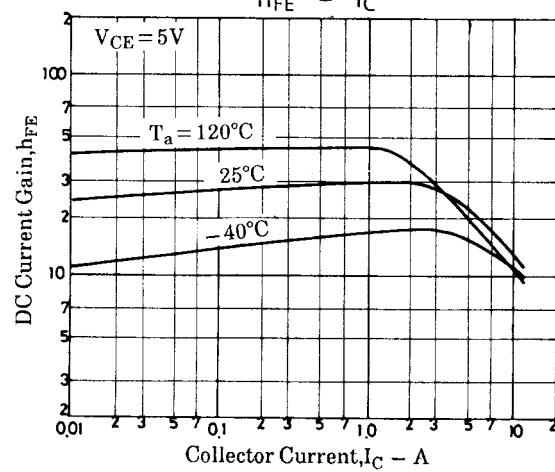
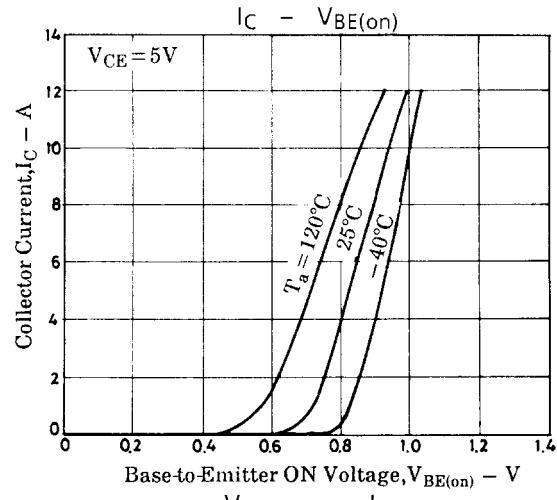
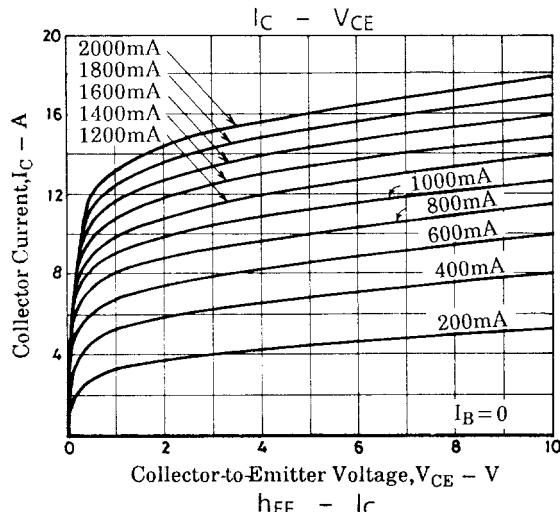
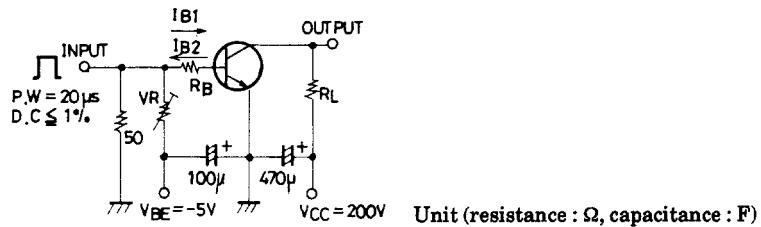
15	L	30	20	M	40	30	N	50
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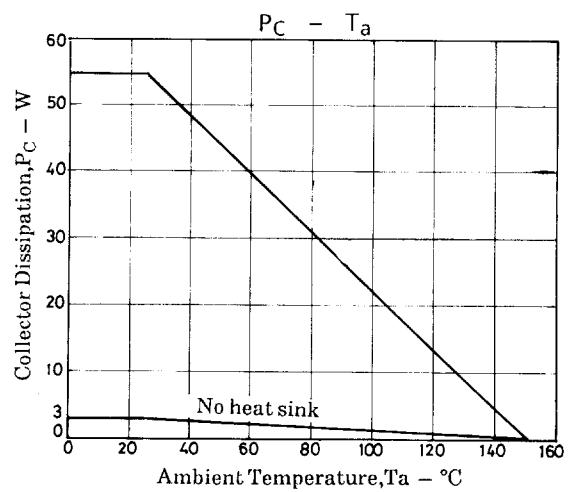
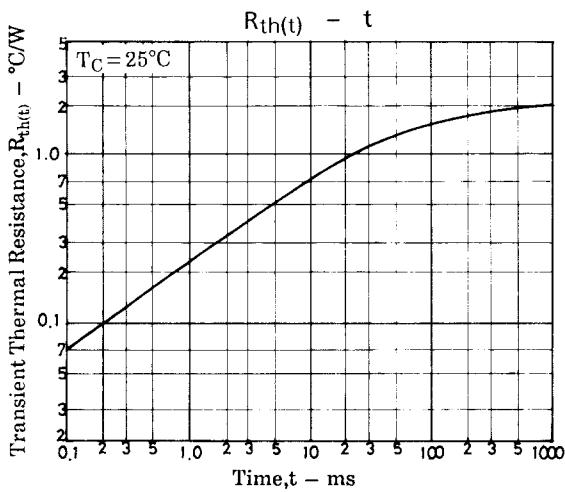
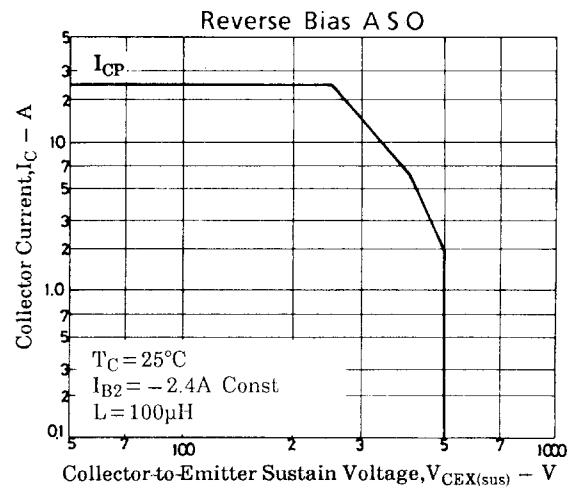
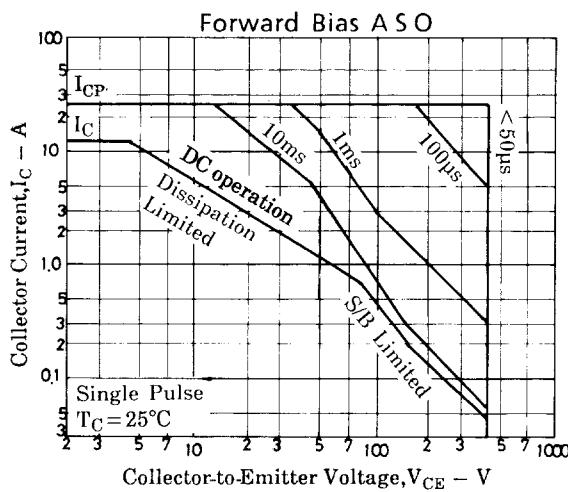
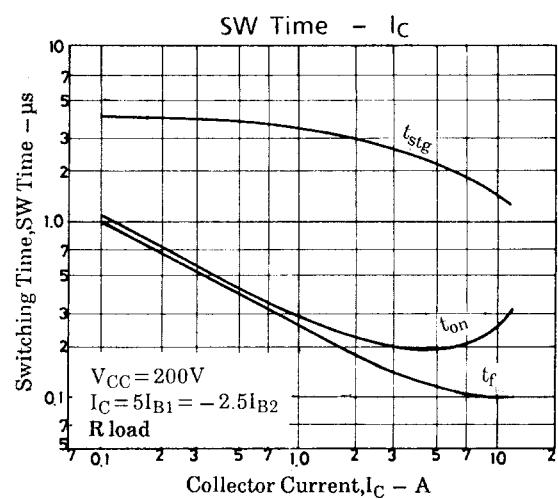
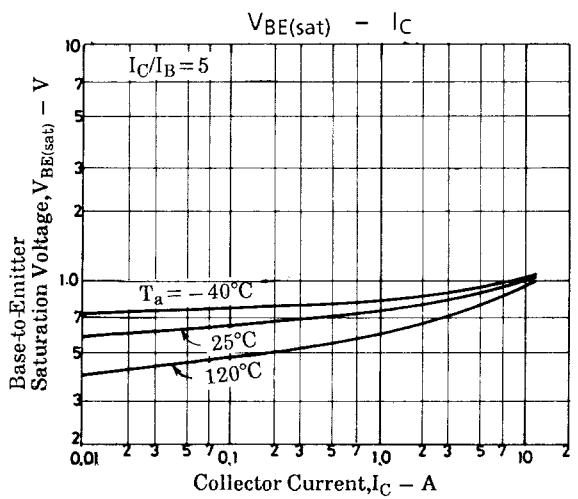
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=8A, I_B=1.6A$			0.8	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=8A, I_B=1.6A$			1.5	V
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=1.6A$		20		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		160		pF
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	500			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=5mA, RBE=\infty$	400			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0$	7			V
Collector-to-Emitter Sustain Voltage	$V_{CEX(sus)}$	$I_C=6A, I_B1=0.6A, I_B2=-2.4A, L=500\mu H, \text{Clamped}$	400			V
Turn-ON Time	t_{on}	$I_C=10A, I_B1=2A, I_B2=-4A, R_L=20\Omega, V_{CC}=200V$			0.5	μs
Storage Time	t_{stg}	$I_C=10A, I_B1=2A, I_B2=-4A, R_L=20\Omega, V_{CC}=200V$			2.5	μs
Fall Time	t_f	$I_C=10A, I_B1=2A, I_B2=-4A, R_L=20\Omega, V_{CC}=200V$			0.3	μs

Switching Time Test Circuit



2SC4423



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