

SANYO	No.2232B	2SC3988
		NPN Triple Diffused Planar Silicon Transistor
Switching Regulator Applications		

Features

- High breakdown voltage, high reliability.
- Fast switching speed.
- Wide ASO.
- Adoption of MBIT process.

Absolute Maximum Ratings at Ta = 25°C

Collector-to-Base Voltage	V _{CB0}		800	V
Collector-to-Emitter Voltage	V _{CEO}		500	V
Emitter-to-Base Voltage	V _{EBO}		7	V
Collector Current	I _C		25	A
Collector Current (Pulse)	I _{CP}	Pulse PW ≤ 300μs, duty cycle ≤ 10%	40	A
Base Current	I _B		8	A
Collector Dissipation	P _C	T _c = 25°C	150	W
Junction Temperature	T _j		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

			min	typ	max	unit
Collector Cutoff Current	I _{CBO}	V _{CB} = 500V, 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 = 2.4A	15※		50※	
	h _{FE(2)}	V _{CE} = 5V, I _C = 12A	8			
Gain-Bandwidth Product	f _T	V _{CE} = 10V, I _C = 2.4A		18		MHz
Output Capacitance	C _{ob}	V _{CB} = 10V, f = 1MHz		260		pF
C-E Saturation Voltage	V _{CE(sat)}	I _C = 12A, I _B = 2.4A			1.0	V
B-E Saturation Voltage	V _{BE(sat)}	I _C = 12A, I _B = 2.4A			1.5	V
C-B Breakdown Voltage	V _{(BR)CBO}	I _C = 1mA, I _E = 0	800			V
C-E Breakdown Voltage	V _{(BR)CEO}	I _C = 5mA, R _{BE} = ∞	500			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 = 10A, I _{B1} = -I _{B2} = 2A, L = 200μH, clamped	500			V

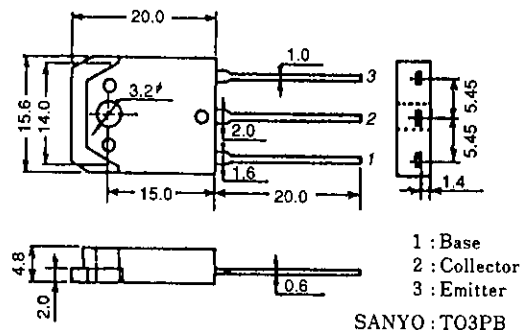
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※ : The 2SC3988 is classified by 2.4A h_{FE} as follows :

15	L	30	20	M	40	30	N	50
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Package Dimensions 2022A

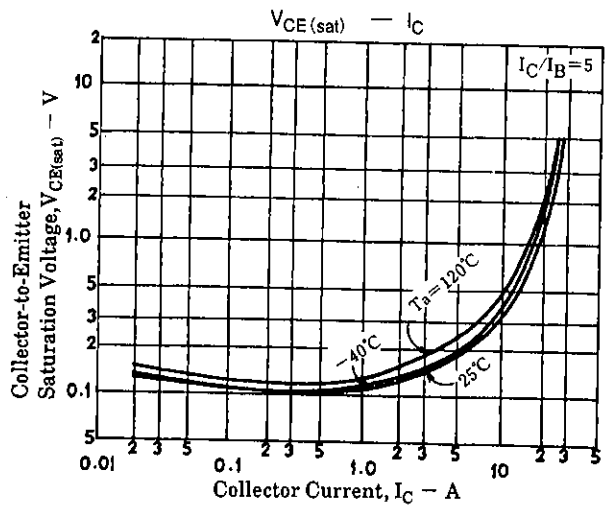
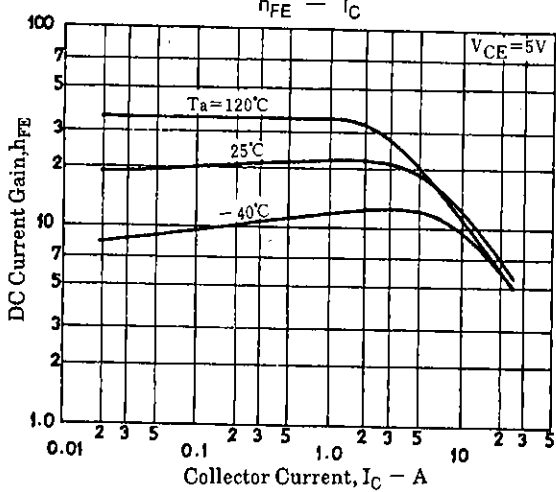
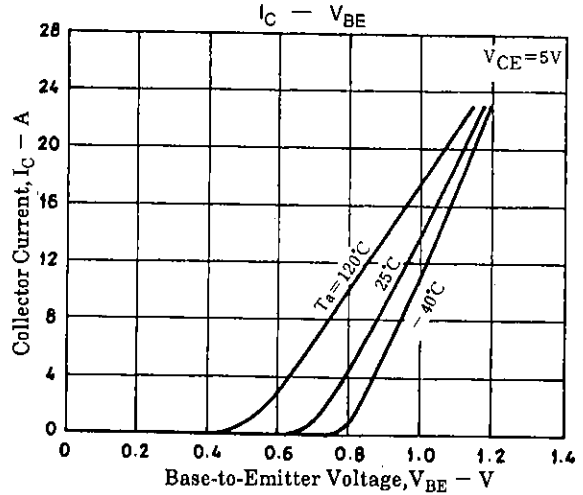
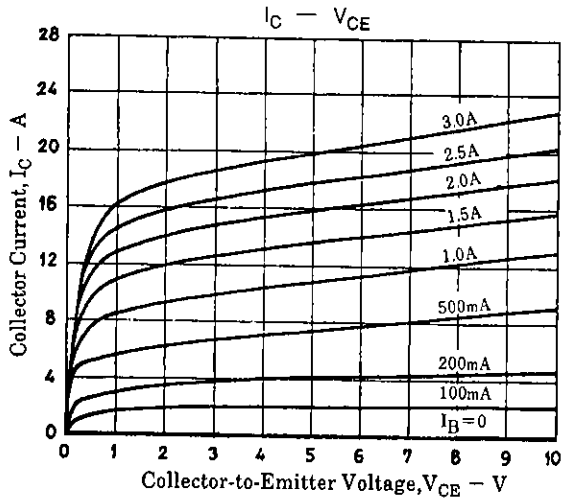
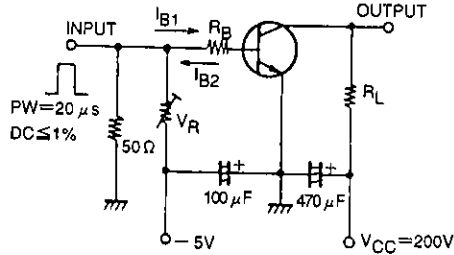
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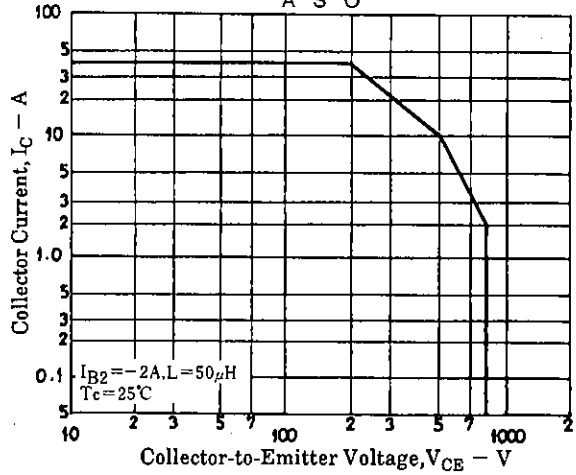
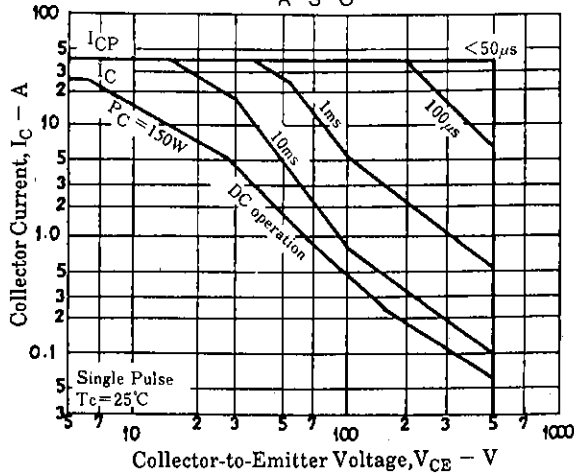
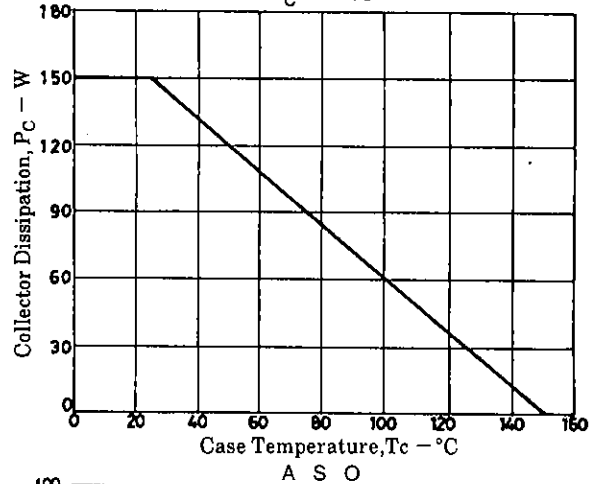
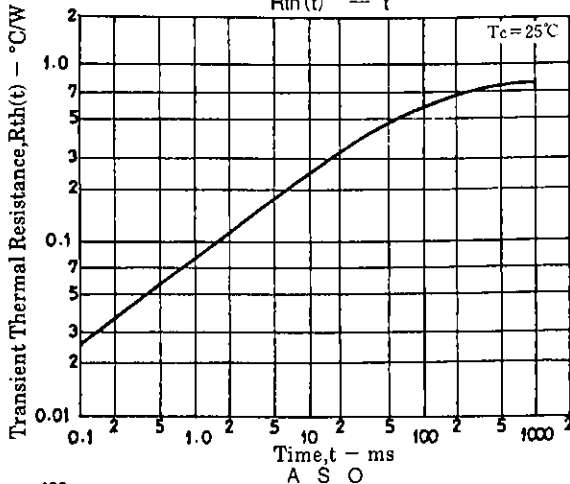
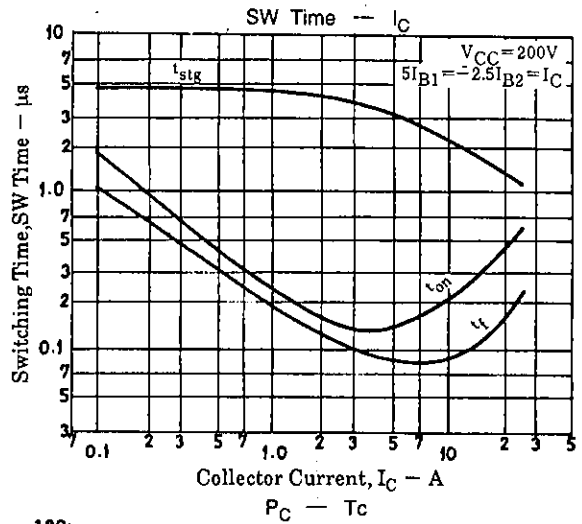
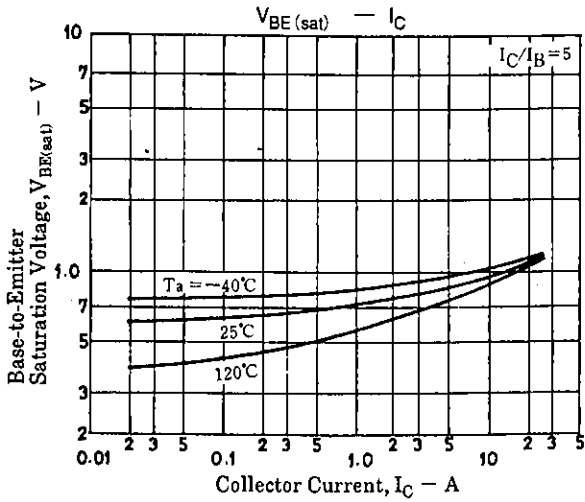


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			min	typ	max	unit
Rise Time	t_{on}	$V_{CC}=200V,$ $5I_{B1} = -2.5I_{B2} = I_C = 14A,$ $R_L = 14.3\Omega$			0.5	μs
Storage Time	t_{stg}				3.0	μs
Fall Time	t_f				0.3	μs

Switching Time Test Circuit





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