Ordering number: EN 2232B

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

				unit
Collector-to-Base Voltage	V_{CBO}		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	Tc = 25°C	150	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} = 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	Cob	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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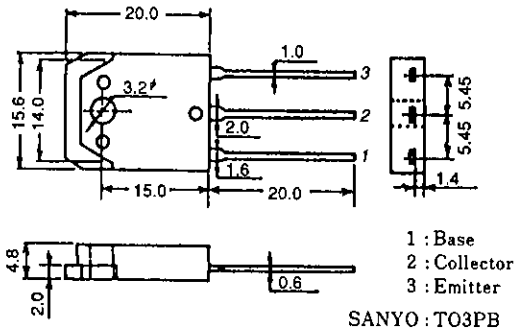
※ : The 2SC3988 is classified by 2.4A h_{FE} as follows :

15 L 30	20 M 40	30 N 50

Package Dimensions 2022A

(unit : mm)



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

Switching Time Test Circuit