


SANYO Semiconductors

DATA SHEET

2SC3807 — NPN Epitaxial Planar Silicon Transistor

High-hFE, Low Frequency

General-Purpose Amplifier Applications

Applications

- Low-frequency general-purpose amplifiers, drivers.

Features

- Large current capacity ($I_C=2A$).
- Adoption of MBIT process.
- High DC current gain ($h_{FE}=800$ to 3200).
- Low collector-to-emitter saturation voltage ($V_{CE(sat)}\leq 0.5V$).
- High V_{EBO} ($V_{EBO}\geq 15V$).

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		30	V
Collector-to-Emitter Voltage	V_{CEO}		25	V
Emitter-to-Base Voltage	V_{EBO}		15	V
Collector Current	I_C		2	A
Collector Current (Pulse)	I_{CP}		4	A
Collector Dissipation	P_C		1.2	W
		$T_c=25^\circ C$	15	W
Junction Temperature	T_j		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

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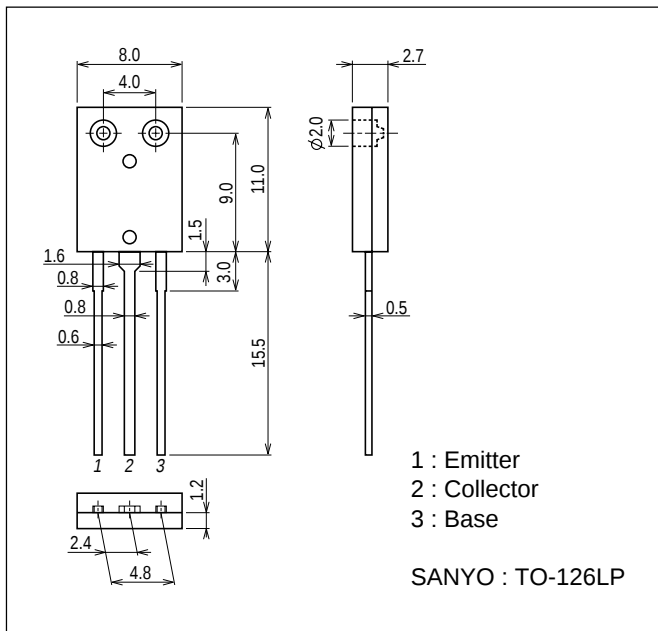
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=20V, I_E=0A$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=10V, I_C=0A$			0.1	μA
DC Current Gain	h_{FE1}	$V_{CE}=5V, I_C=500mA$	800	1500	3200	
	h_{FE2}	$V_{CE}=5V, I_C=1A$	600			
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=50mA$		260		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		27		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1A, I_B=20mA$		0.15	0.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1A, I_B=20mA$		0.85	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0A$	30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	25			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0A$	15			V
Turn-ON Time	t_{on}	See specified Test Circuit.		0.14		μs
Storage Time	t_{stg}	See specified Test Circuit.		1.35		μs
Fall Time	t_f	See specified Test Circuit.		0.1		μs

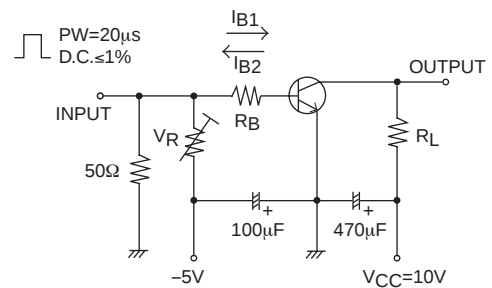
Package Dimensions

unit : mm (typ)

7517-002



Switching Time Test Circuit



$$7I_{B1} = -7I_{B2} = I_C = 700mA$$

