



SANYO Semiconductors

DATA SHEET

2SC3807C — NPN Epitaxial Planar Silicon Transistor

25V / 2A 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 ($h_{FE}=1000$ to 2000).
- Low collector-to-emitter saturation voltage ($V_{CE(sat)}\leq 0.5V$).
- High V_{EBO} ($V_{EBO}\geq 17V$).

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}		17	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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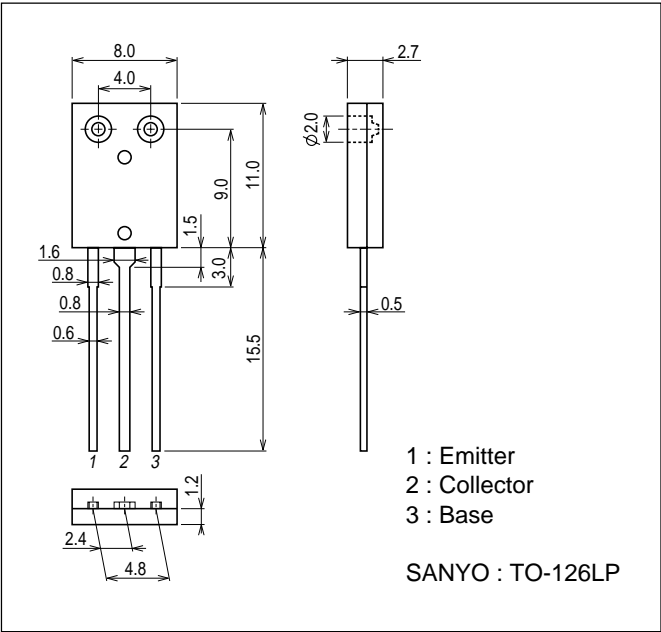
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	VCE=20V, IE=0A			0.1	μA
Emitter Cutoff Current	IEBO	VEB=10V, IC=0A			0.1	μA
DC Current Gain	hFE1	VCE=5V, IC=500mA	1000		2000	
	hFE2	VCE=5V, IC=1A	600			
Gain-Bandwidth Product	fT	VCE=10V, IC=0.1A		260		MHz
Output Capacitance	Cob	VCE=10V, f=1MHz		24		pF
Collector-to-Emitter Saturation Voltage	VCE(sat)	IC=1A, IB=20mA		0.15	0.5	V
Base-to-Emitter Saturation Voltage	VEB(sat)	IC=1A, IB=20mA		0.85	1.2	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	IC=10μA, IE=0A	30			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	IC=1mA, RBE=∞	25			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	IE=10μA, IC=0A	17			V
Turn-ON Time	ton	See specified Test Circuit.		0.14		μs
Storage Time	tstg	See specified Test Circuit.		0.8		μs
Fall Time	tf	See specified Test Circuit.		0.12		μs

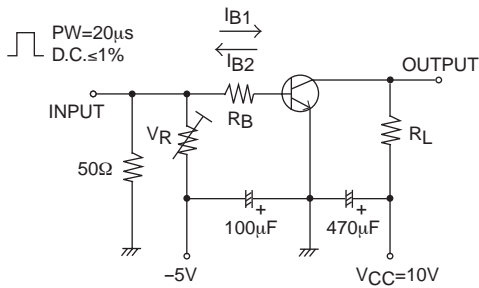
Package Dimensions

unit : mm (typ)

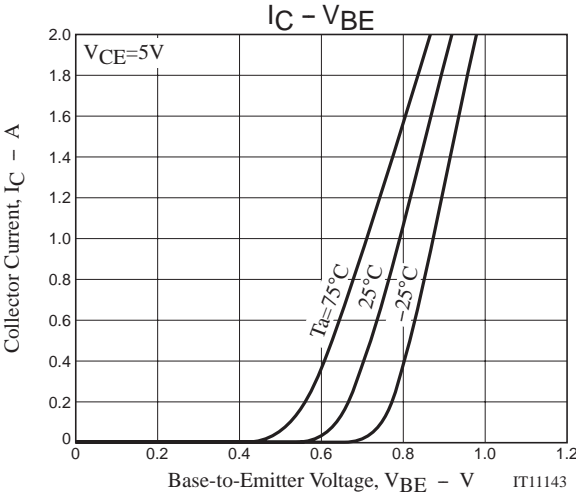
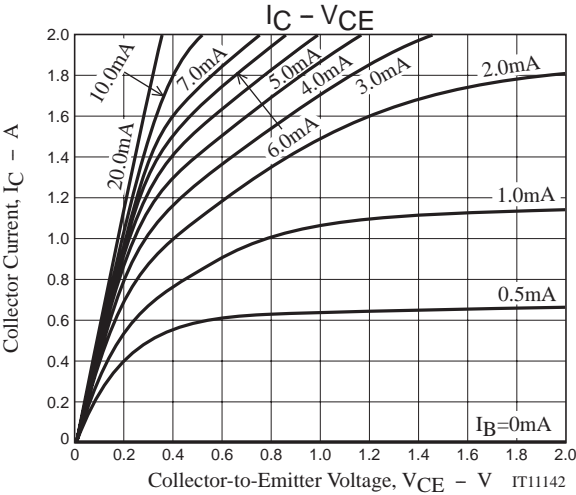
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Switching Time Test Circuit

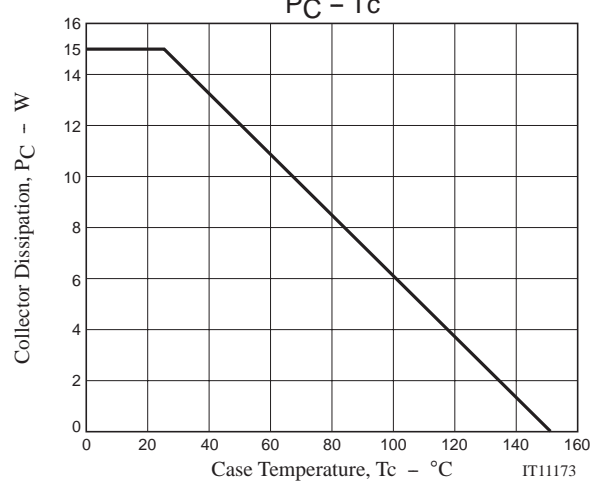
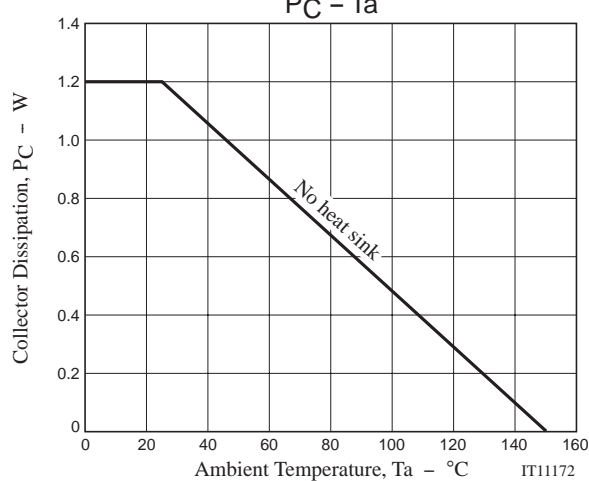
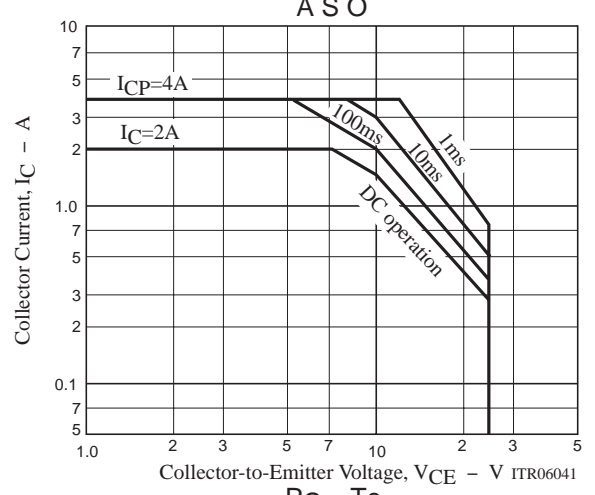
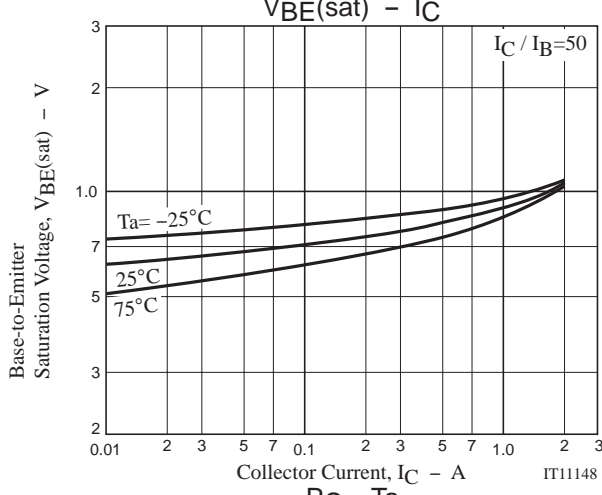
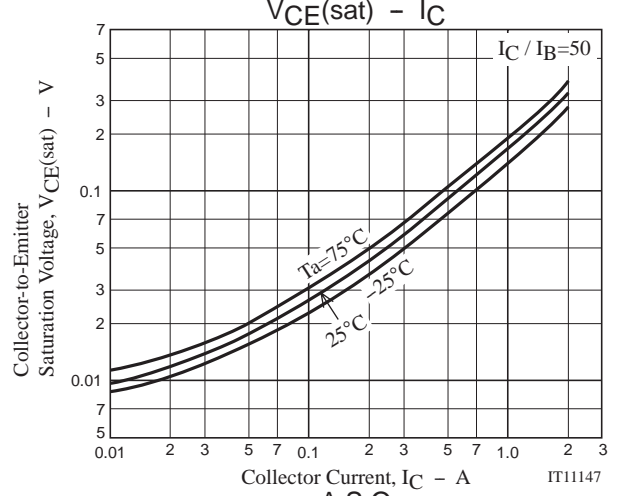
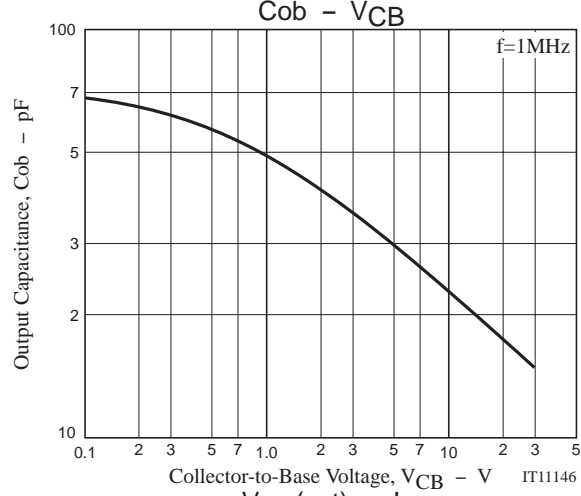
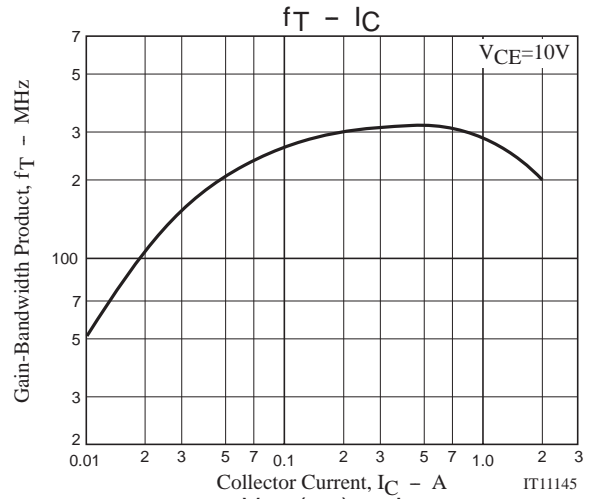
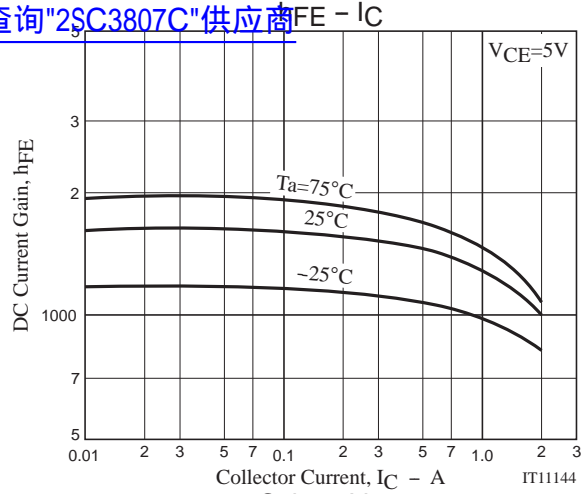


$$7I_{B1} = -7I_{B2} = I_C = 700\text{mA}$$



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