Ordering number:EN2478B

NPN Triple Diffused Planar Silicon Transistor

2SC4031

900V/20mA Switching Applications

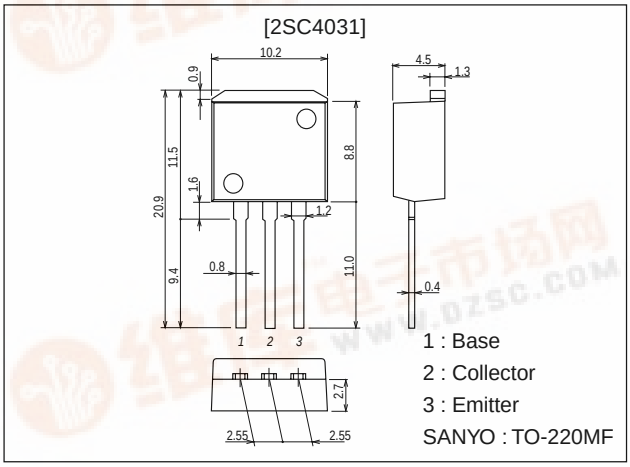
Features

- High breakdown voltage (V_{CEO} min=900V).
- Small Output Capacitance (C_{ob} typ=1.6pF).
- Wide ASO (adoption of MBIT process).
- High reliability (adoption of HVP process).

Package Dimensions

unit:mm

2049C



Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		2000	V
Collector-to-Emitter Voltage	V_{CEO}		900	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		20	mA
Collector Current (Pulse)	I_{CP}		60	mA
Collector Dissipation	P_C		1.65	W
		Tc=25˚C	1.2	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=900V, I_E=0			1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0			1	μA
DC Current Gain	h_{FE}	V_{CE}=5V, I_C=1mA	20	50	120	
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=1mA		6		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=2mA, I_B=400μA			5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=2mA, I_B=400μA			2	V

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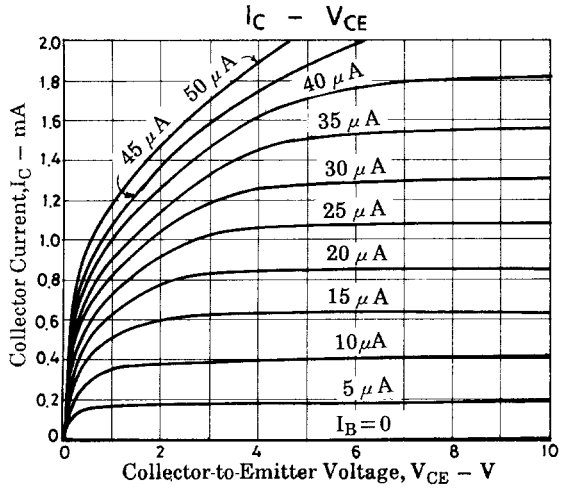
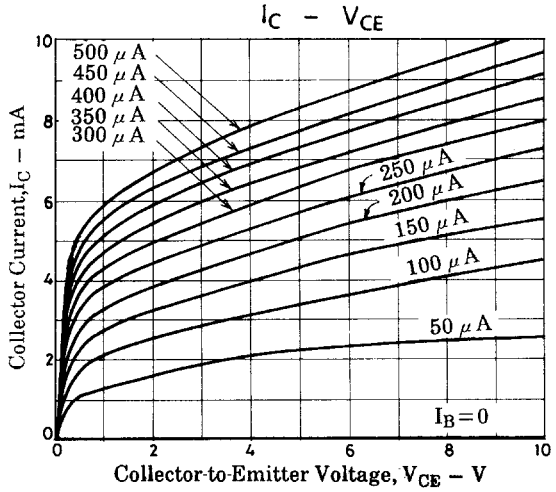
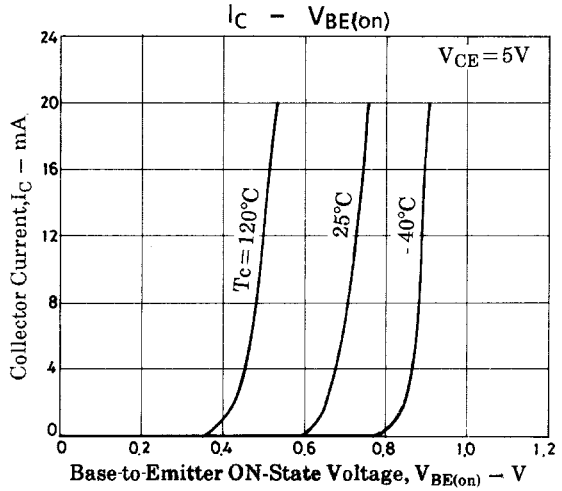
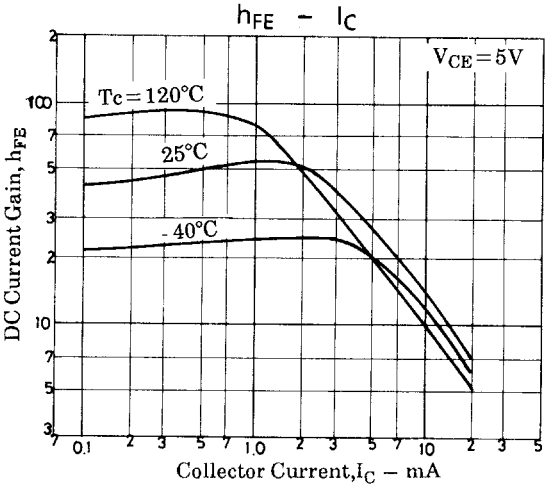
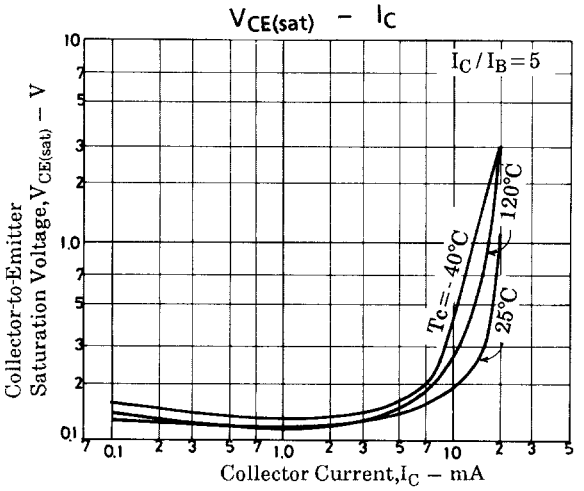
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=1mA, I_E=0	2000			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	900			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=1mA, I_C=0	5			V
Output Capacitance	C_{ob}	V_{CB}=100V, f=1MHz		1.6		pF

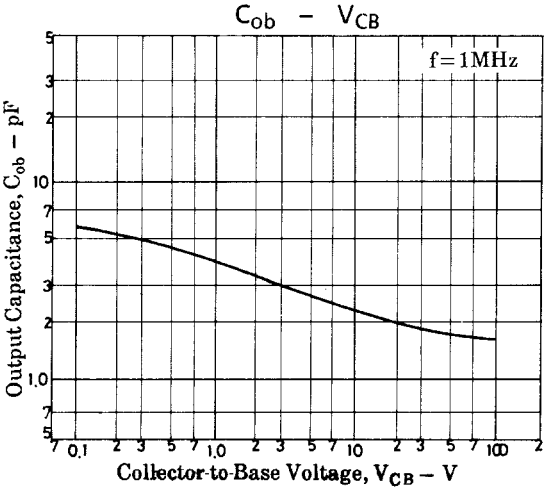


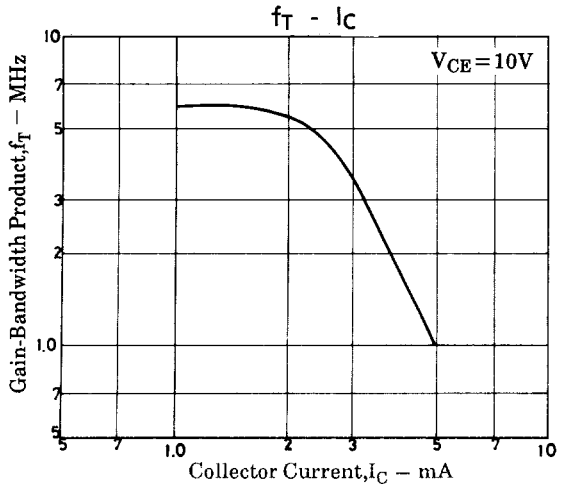


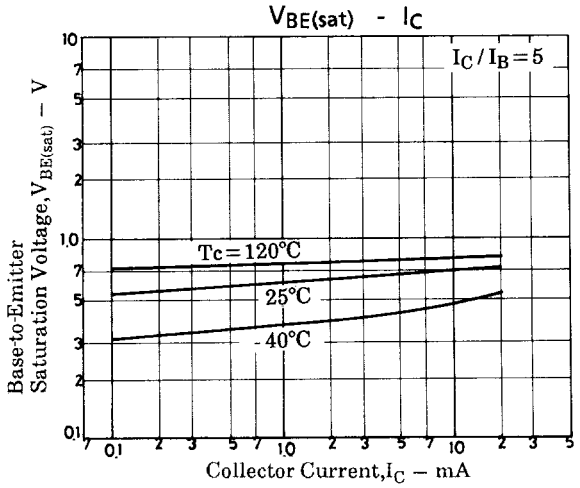


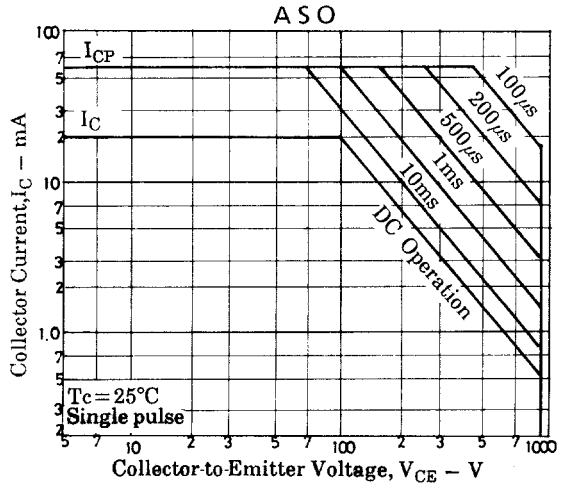


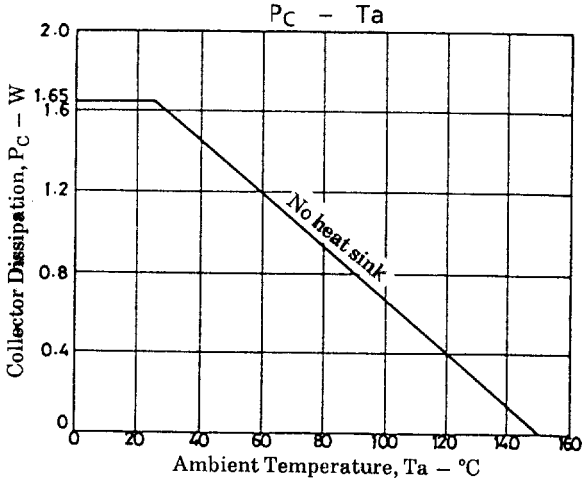


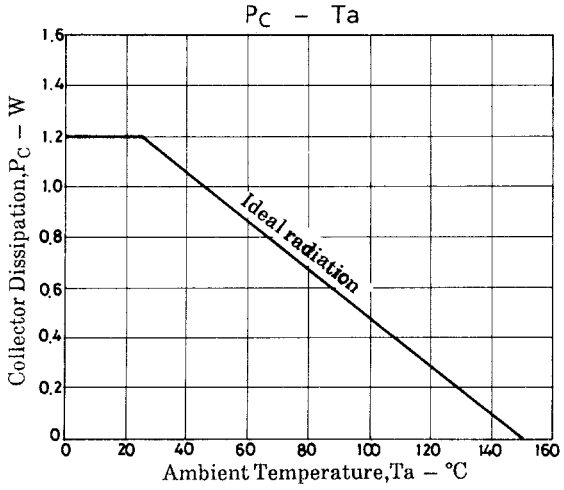



fT - IC
VCE=10V
Gain-Bandwidth Product,fT – MHz
Collector Current,IC – mA


VBE(sat) - IC
IC / IB=5
Tc=120°C
25°C
-40°C
Base-to-Emitter Saturation Voltage,VBE(sat) – V
Collector Current,IC – mA


A S O
ICP
IC
100μs
200μs
500μs
1ms
10ms
DC Operation
Tc=25°C
Single pulse
Collector Current,IC – mA
Collector-to-Emitter Voltage, VCE – V


PC - Ta
No heat sink
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C


PC - Ta
Ideal radiation
Collector Dissipation,PC – W
Ambient Temperature,Ta – °C