Ordering number : EN5696

NPN Triple Diffused Planar Silicon Transistor

2SC5416

Inverter Lighting Applications

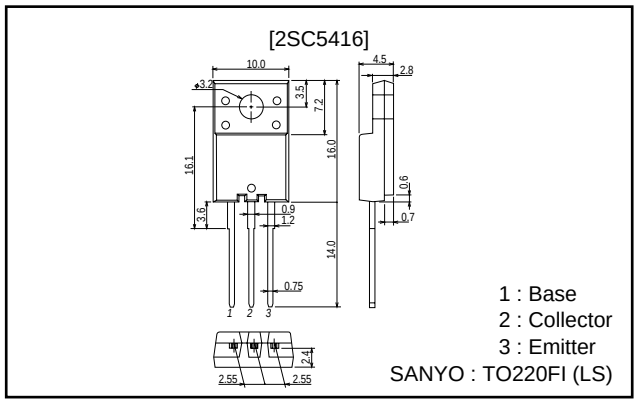
Features

- High breakdown voltage.
- High reliability (Adoption of HVP process).
- Adoption of MBIT process.

Package Dimensions

unit: mm

2079B-TO220FI (LS)



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		1000	V
Collector-to-Emitter Voltage	V_{CEO}		450	V
Emitter-to-Base Voltage	V_{EBO}		9	V
Collector Current	I_C		4	A
Collector Current (Pulse)	I_{CP}		8	A
Collector Dissipation	P_C		2	W
		Tc=25°C	25	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}=450V, I_E=0			10	μA
Collector Cutoff Current	I_{CES}	V_{CE}=1000V, R_{BE}=0			1.0	mA
Collector Sustain Voltage	$V_{CEO(sus)}$	I_C=100mA, I_B=0	450			V
Emitter Cutoff Current	I_{EBO}	V_{EB}=9V, I_C=0			1.0	mA
C-E Saturation Voltage	$V_{CE(sat)}$	I_C=2A, I_B=0.4A			1.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	I_C=2A, I_B=0.4A			1.5	V
DC Current Gain	$h_{FE(1)}$	V_{CE}=5V, I_C=0.1A	30	40	50	
	$h_{FE(2)}$	V_{CE}=5V, I_C=1.5A	10			
Storage Time	t_{stg}	I_C=2A, I_{B1}=0.4A, I_{B2}=–0.8A			2.5	μs
Fall Time	t_f	I_C=2A, I_{B1}=0.4A, I_{B2}=–0.8A			0.15	μs

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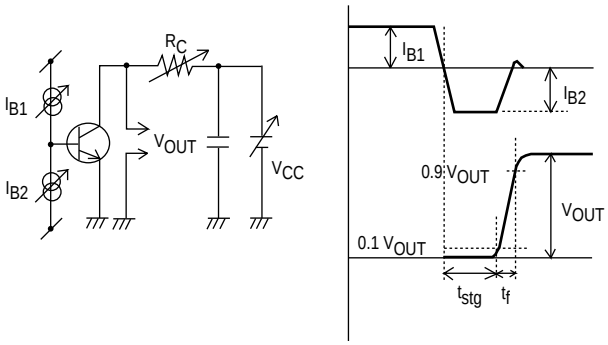
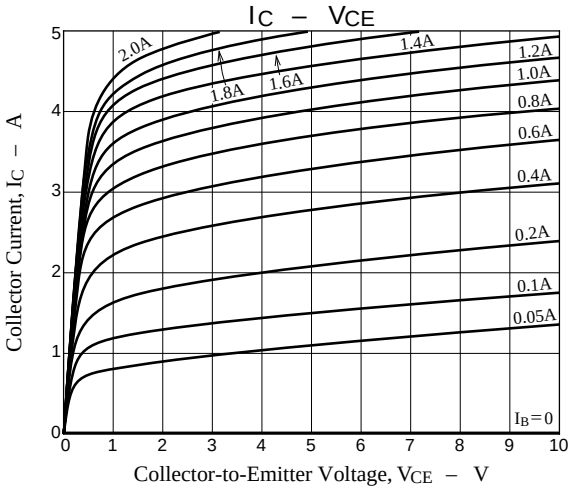
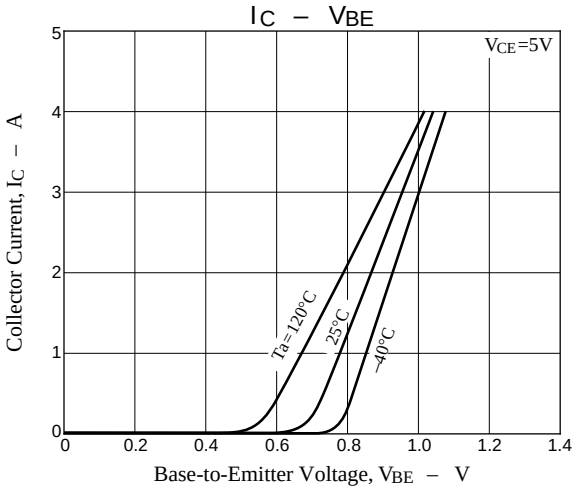
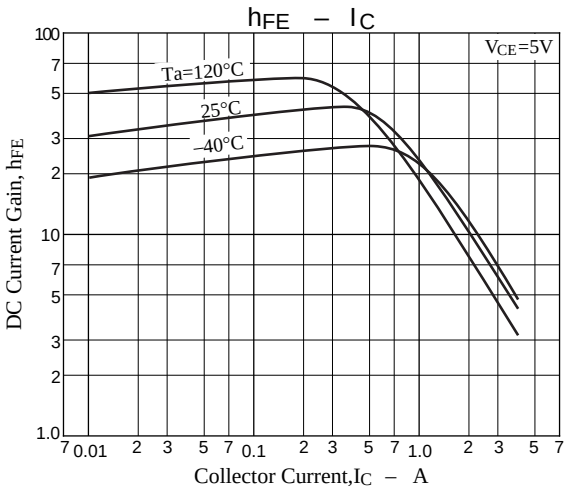
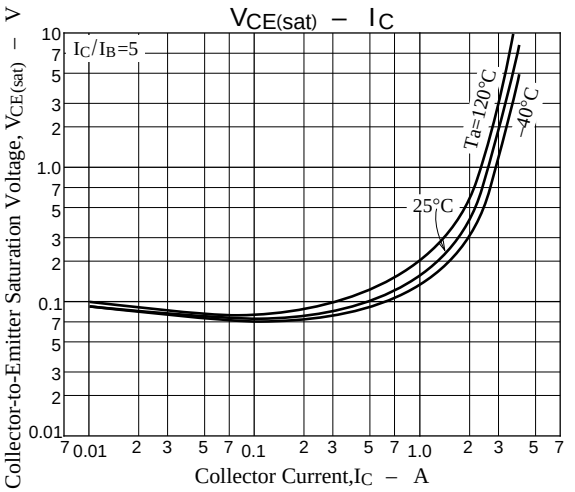
Switching Time Test Circuit

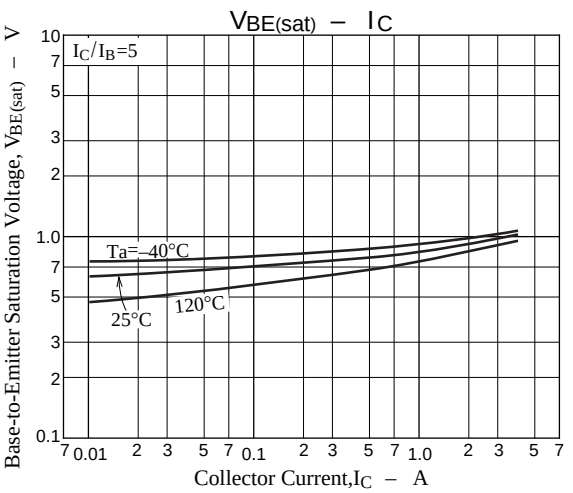


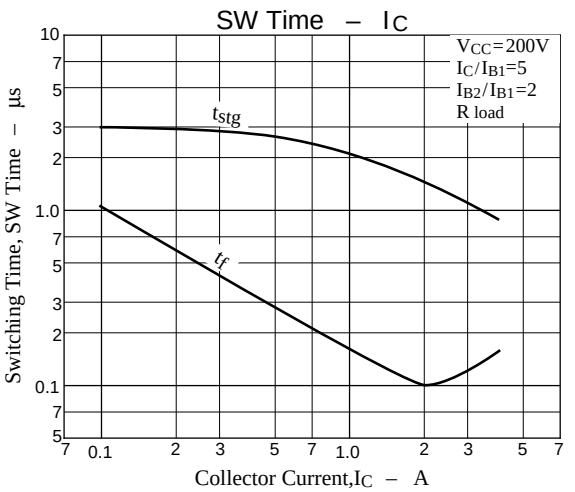


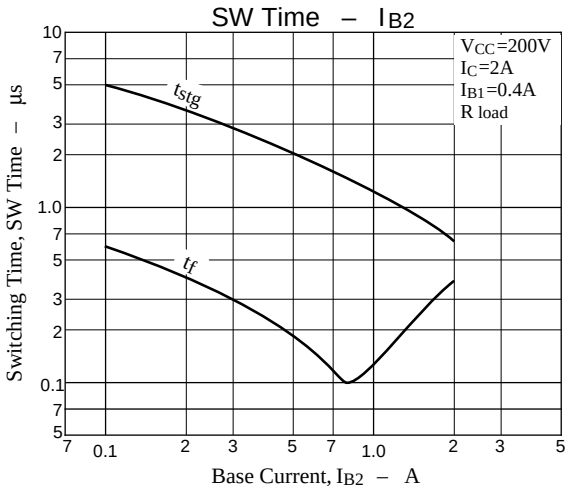


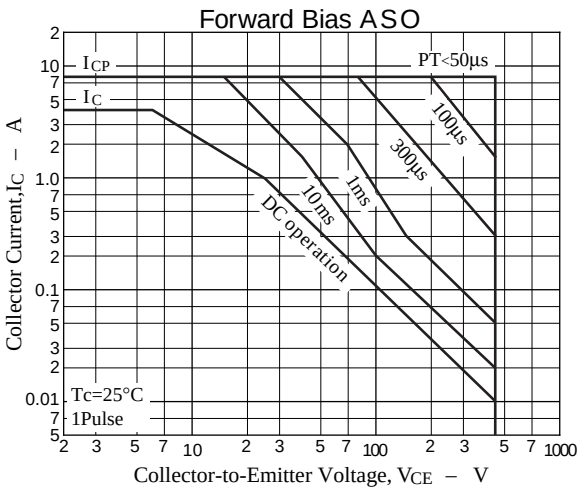


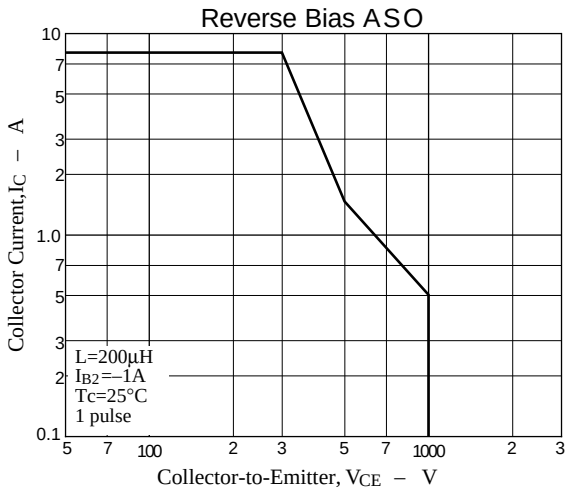


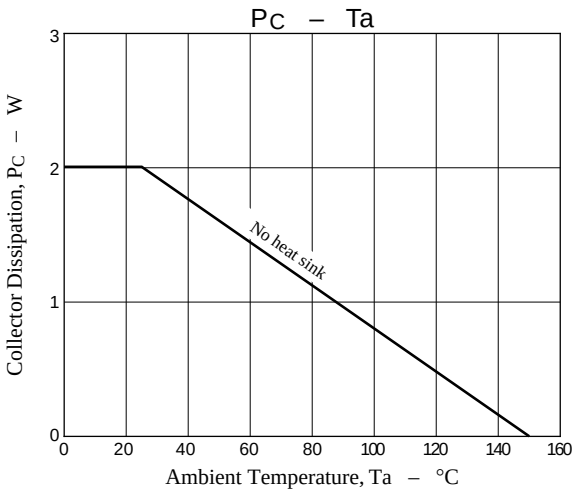


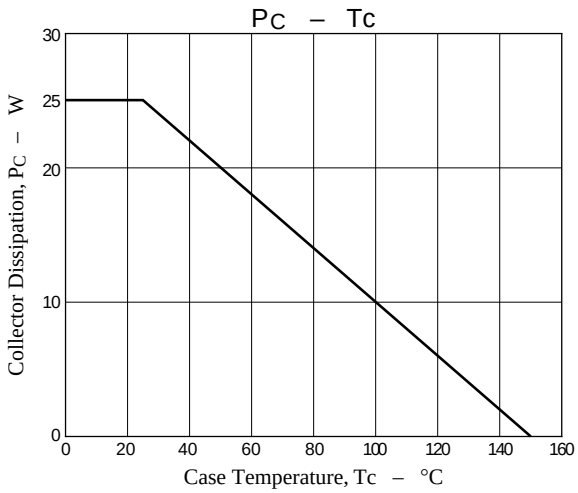



SW Time – IB2
VCC=200V
IC=2A
IB1=0.4A
R load
tstg
tf
Switching Time, SW Time – µs
Base Current, IB2 – A


Forward Bias ASO
ICP
IC
PT<50µs
100µs
300µs
1ms
10ms
DC operation
Tc=25°C
1Pulse
Collector Current,IC – A
Collector-to-Emitter Voltage, VCE – V


Reverse Bias ASO
L=200µH
IB2=–1A
Tc=25°C
1 pulse
Collector Current,IC – A
Collector-to-Emitter, VCE – V


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


PC – Tc
Collector Dissipation, PC – W
Case Temperature, Tc – °C