

# SANYO Semiconductors DATA SHEET

# 2SA2204 — PNP Epitaxial Planar Silicon Transistor

# **High-Voltage Switching Applications**

# **Applications**

• DC / DC converter, Relay drivers, lamp drivers, motor drivers.

#### **Features**

- · Adoption of FBET, MBIT processes.
- · Large current capacitance.
- · Low collector-to-emitter saturation voltage.
- · High-speed switching.
- · High allowable power dissipation.

### **Specifications**

#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		-80	V
Collector-to-Emitter Voltage	VCES		-80	V
Collector-to-Emitter Voltage	VCEO		-80	V
Emitter-to-Base Voltage	VEBO		-7	V
Collector Current	IC		-2.5	Α
Collector Current (Pulse)	ICP		-4	Α
Base Current	IΒ		-500	mA
Collector Dissipation	Do.		0.8	W
	PC	Tc=25°C	15	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	Offic
Collector Cutoff Current	ICBO	V <sub>CB</sub> =-70V, I <sub>E</sub> =0A			-1	μΑ
Emitter Cutoff Current	IEBO	V <sub>EB</sub> =-4V, I <sub>C</sub> =0A			-1	μΑ
DC Current Gain	hFE	VCE=-5V, IC=-100mA	200		400	
Gain-Bandwidth Product	fΤ	V <sub>CE</sub> =-10V, I <sub>C</sub> =-500mA		350		MHz
Output Capacitance	Cob	V <sub>CB</sub> =-10V, f=1MHz		23		pF

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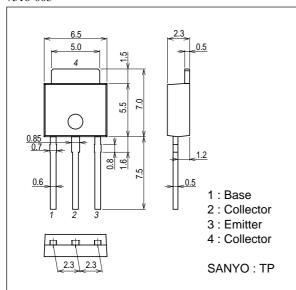
## 2SA2204

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Offic
Collector-to-Emitter Saturation Voltage	VCE(sat)	IC=-1A, IB=-100mA		-100	-200	mV
Base-to-Emitterr Saturation Voltage	V <sub>BE</sub> (sat)	I <sub>C</sub> =-1A, I <sub>B</sub> =-100mA		-0.85	-1.2	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	IC=-10μA, IE=0A	-80			V
Collector-to-Emitter Breakdown Voltage	V(BR)CES	IC=-100μA, RBE=0Ω	-80			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	IC=-1mA, RBE=∞	-80			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	IE=-10μA, IC=0A	-7			V
Turn-On Time	ton	See specified Test Circuit.		40		ns
Storage Time	tstg	See specified Test Circuit.		500		ns
Fall Time	tf	See specified Test Circuit.		28		ns

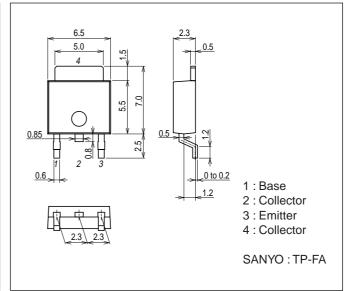
# **Package Dimensions**

unit : mm (typ) 7518-003

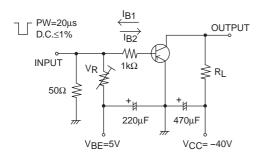


# **Package Dimensions**

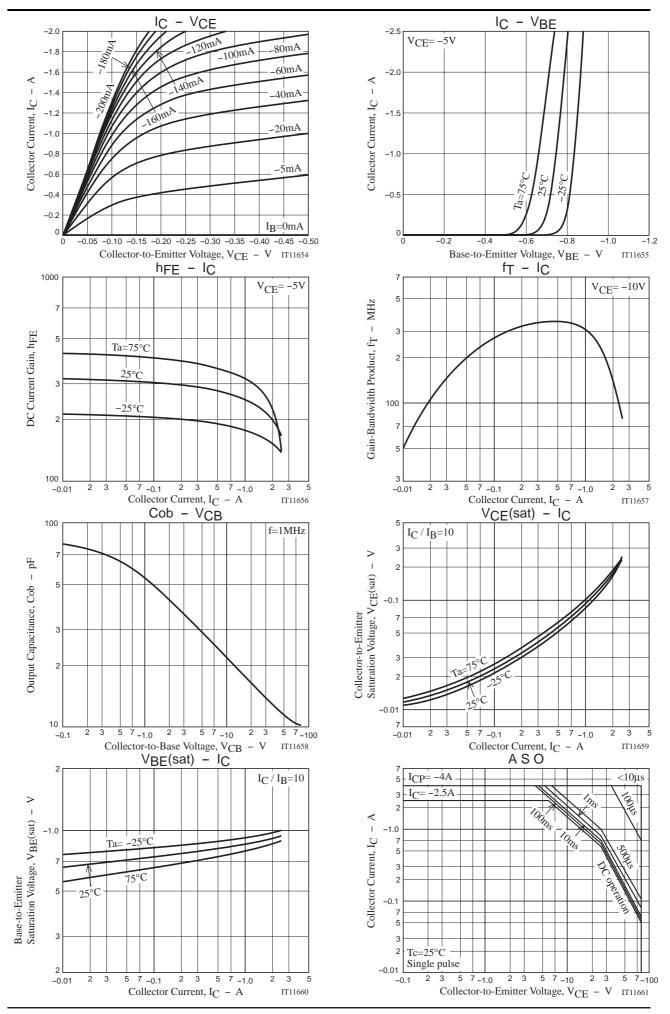
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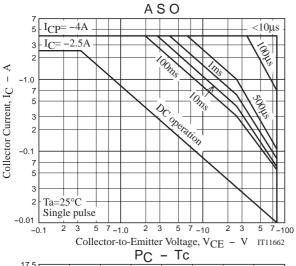


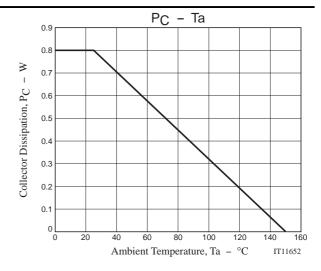
## **Switching Time Test Circuit**

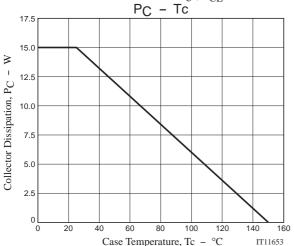


 $I_{C} = -10I_{B1} = 10I_{B2} = -0.5A$ 









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