



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

2SA2222SG — PNP Epitaxial Planar Silicon Transistor

High-Current Switching Applications

Applications

- Relay drivers, lamp drivers, motor drivers

Features

- Adoption of MBIT process
- Low collector-to-emitter saturation voltage ($V_{CE(sat)} = -250\text{mV (typ.)}$)
- High-speed switching ($t_f = 22\text{ns (typ.)}$)
- Large current capacity ($I_C = -10\text{A}$)

Specifications

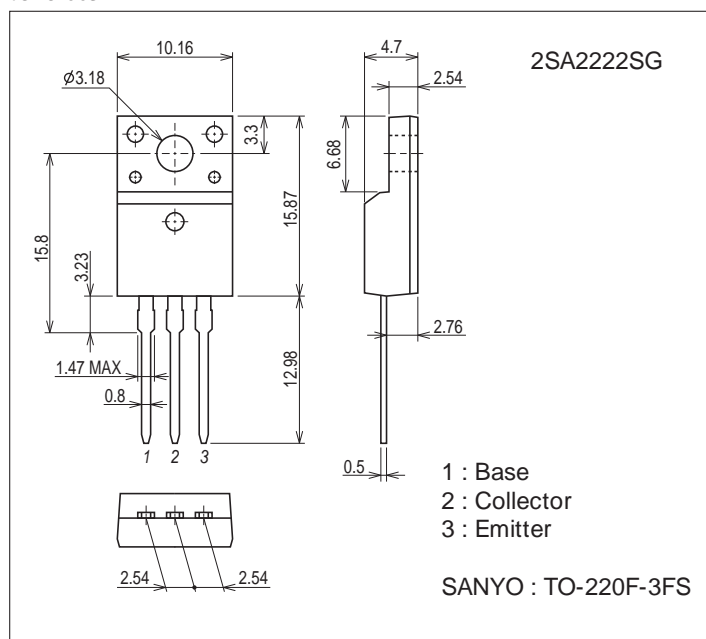
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		-50	V
Collector-to-Emitter Voltage	V_{CEO}		-50	V
Emitter-to-Base Voltage	V_{EBO}		-6	V
Collector Current	I_C		-10	A
Collector Current (Pulse)	I_{CP}		-13	A
Base Current	I_B		-2	A
Collector Dissipation	P_C	$T_c = 25^\circ\text{C}$, $P_T \leq 1\text{s}$	25	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Package Dimensions

unit : mm (typ)

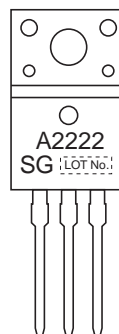
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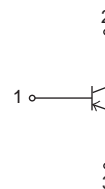
Product & Package Information

- Package : TO-220F-3FS
- JEITA, JEDEC : SC-67
- Minimum Packing Quantity : 50 pcs./magazine

Marking



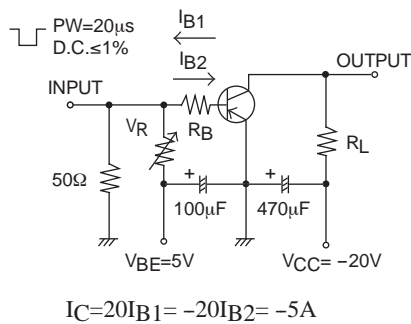
Electrical Connection



Electrical Characteristics at Ta=25°C

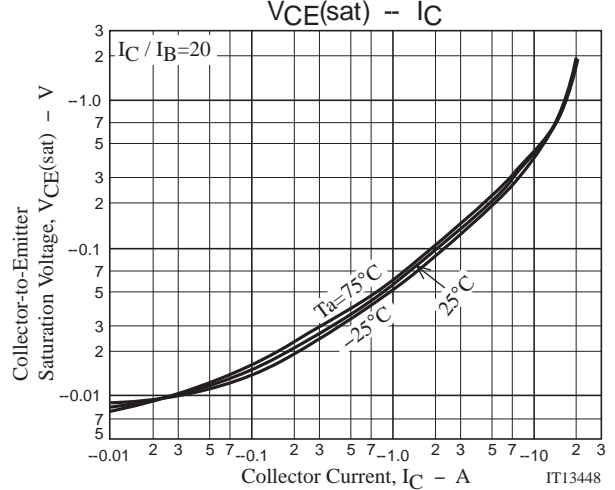
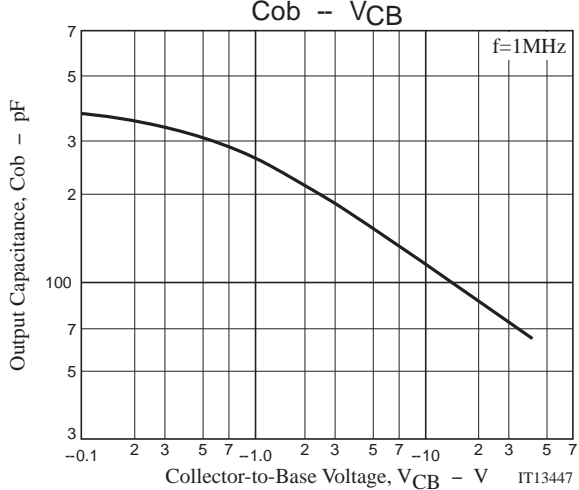
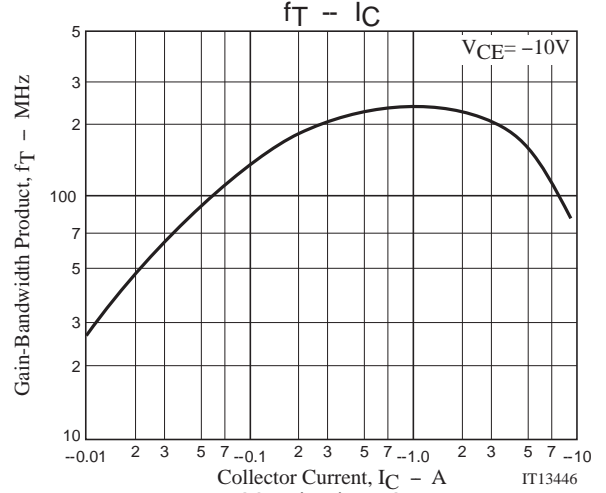
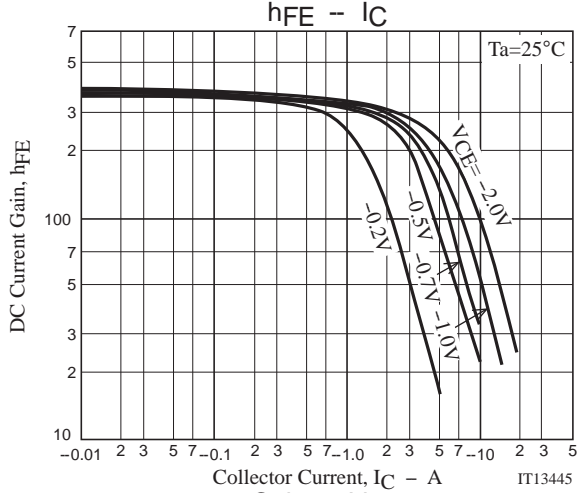
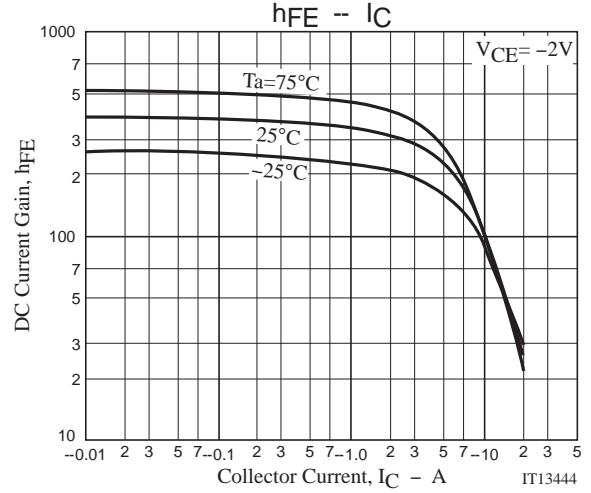
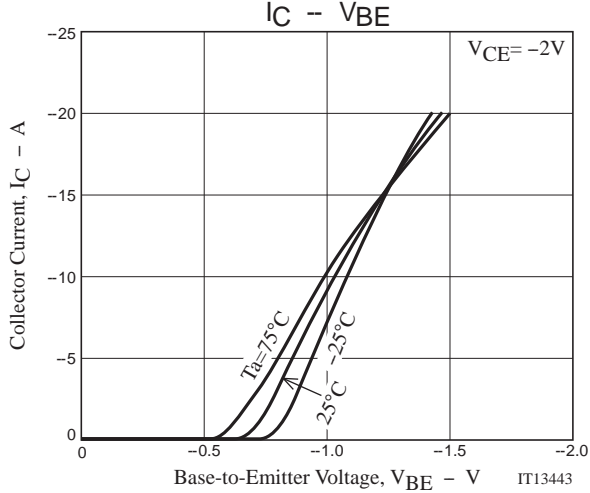
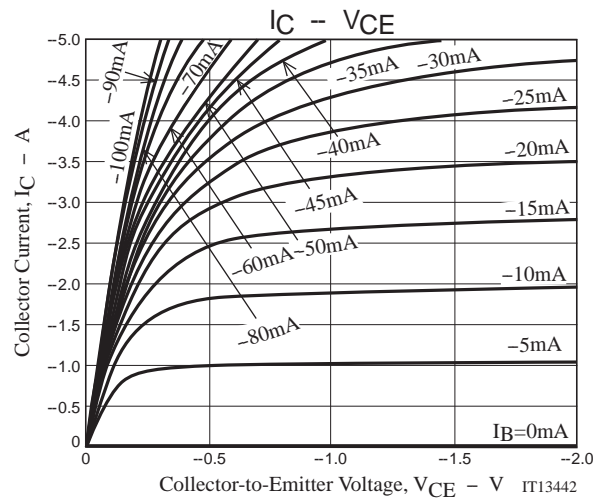
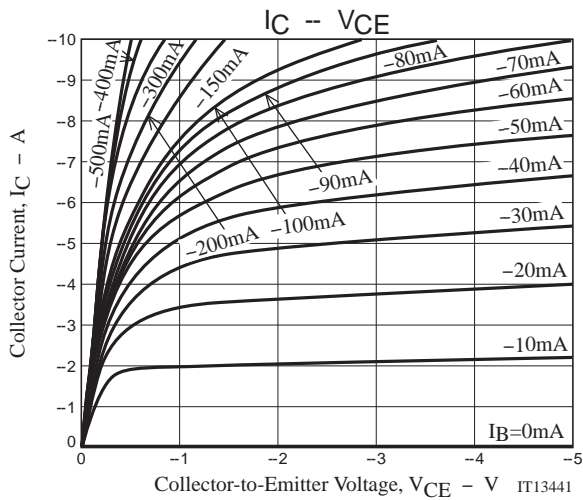
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =-40V, I _E =0A			-10	μA
Emitter Cutoff Current	IEBO	V _{EB} =-4V, I _C =0A			-10	μA
DC Current Gain	h _{FE}	V _{CE} =-2V, I _C =-270mA	150		450	
Gain-Bandwidth Product	f _T	V _{CE} =-10V, I _C =-1A		230		MHz
Output Capacitance	Cob	V _{CB} =-10V, f=1MHz		115		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =-6A, I _B =-300mA		-250	-500	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =-6A, I _B =-300mA			-1.2	V
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}	I _C =-100μA, I _E =0A	-50			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =-1mA, R _{BE} =∞	-50			V
Emitter-to-Base Breakdown Voltage	V _{(BR)EBO}	I _E =-100μA, I _C =0A	-6			V
Turn-On Time	t _{on}	See specified Test Circuit.		40		ns
Storage Time	t _{stg}			240		ns
Fall Time	t _f			22		ns

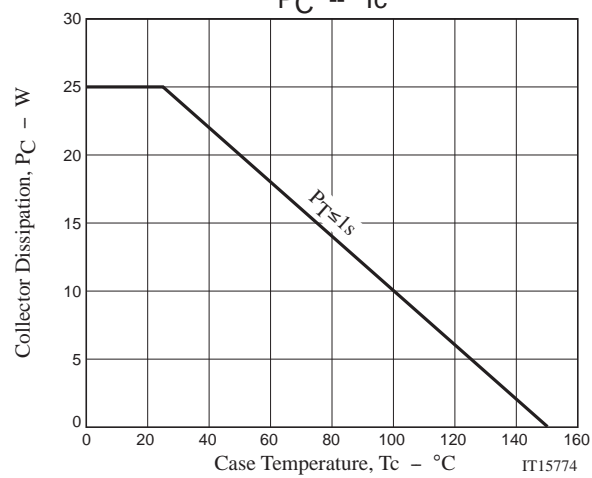
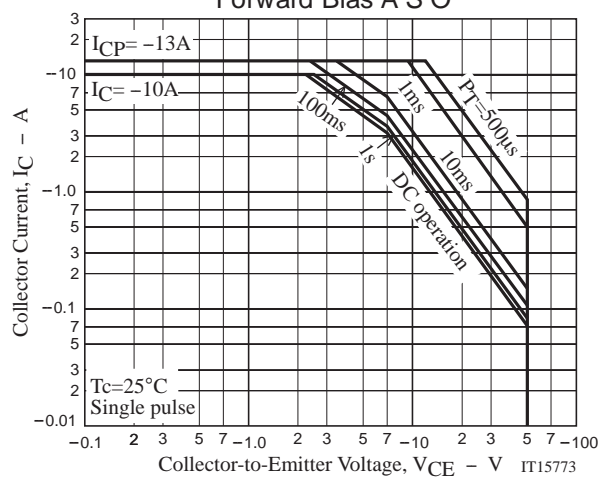
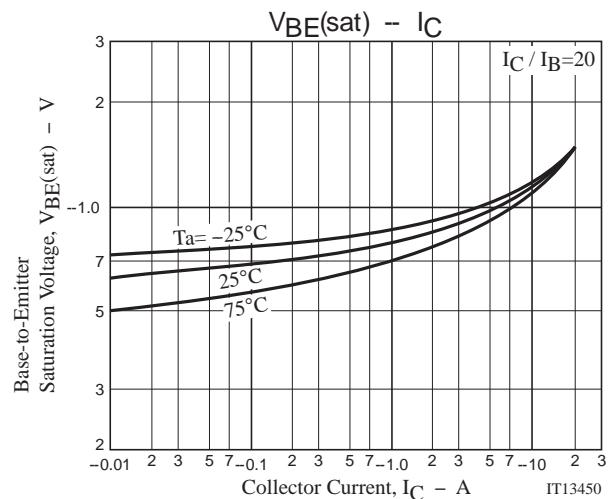
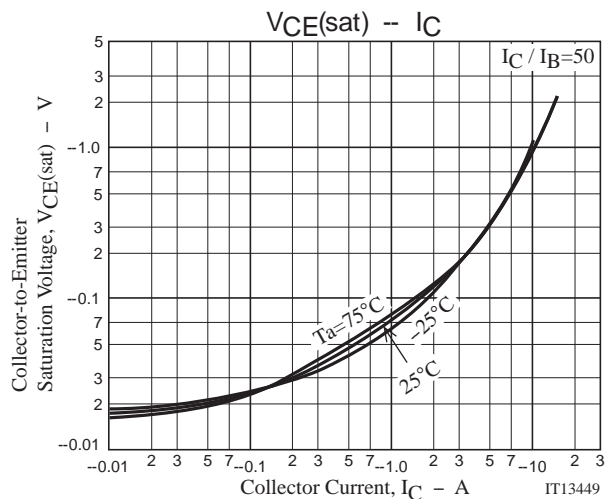
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
2SA2222SG	TO-220F-3FS	50pcs./magazine	Pb Free





Magazine Specification

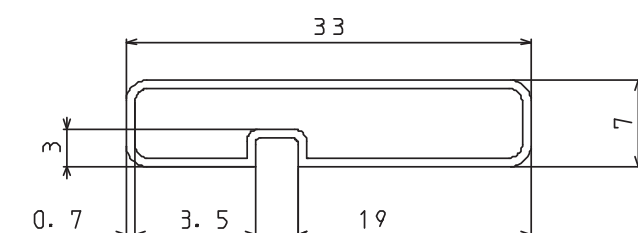
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1. Packing Format

Package Name	Magazine Name	Maximum Number of devices contained (pcs)			Packing format	
		Magazine	Inner box	Outer box	Inner BOX	Outer BOX
TO-220F-3FS	TO-220F	50	1,000	4,000	SPD-0V0001 20 magazines contained Dimensions:mm {external} 568×150×55	SPT-081029 4 inner boxes contained Dimensions:mm {external} 590×225×178

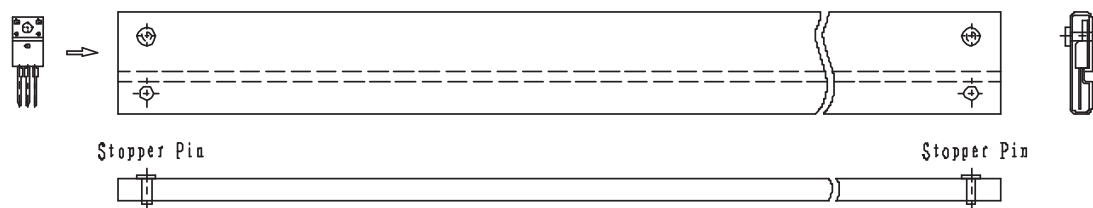
2. Magazine dimensions

(unit:mm)



Tolerance=±0.3mm
 Thickness=0.7±0.2mm
 Length =532.5±2mm
 Material =PVC (Antistatic treatment)

3. Storage method to magazine



4. Inner box label (unit:mm)

Type No.	→	TYPE 0000000000
LOT No.	→	LOT 00
Quantity	→	QTY 0,000 (1) LEAD FREE *
Origin	→	SPECIAL *20722005310C* ASSEMBLY:**** (DIFFUSION:****)

5. Outer box label (unit:mm)

It is a label at the time of factory shipments.
 The form of a label may change in physical
 distribution process.

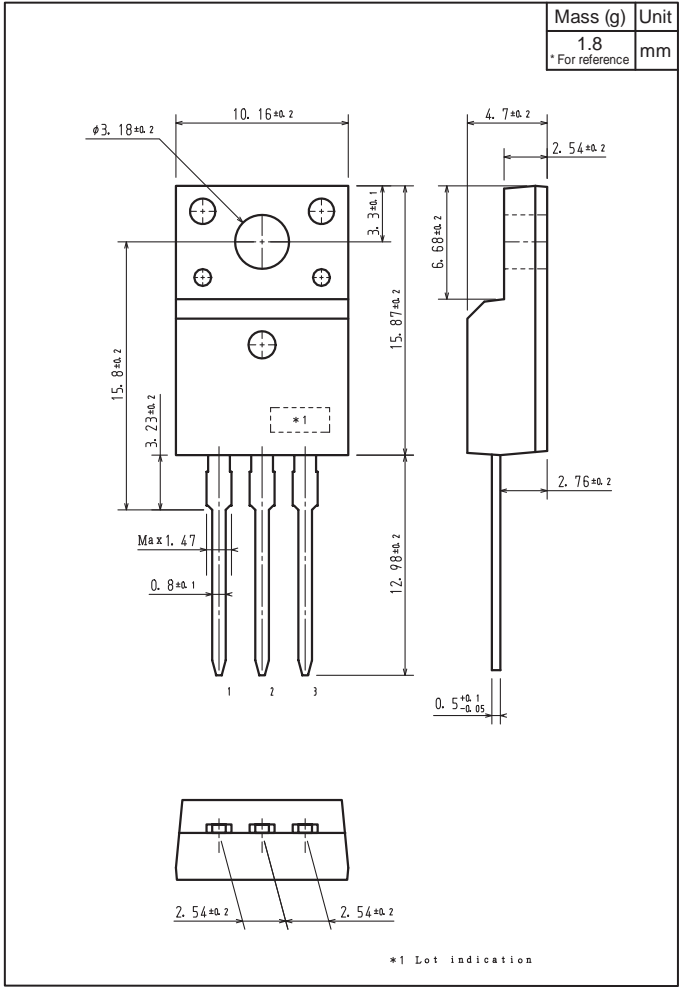
TYPE CODE	TYPE 0000000000
QTY	QTY 0,000 PCS (1) LEAD FREE *
LOT	LOT 00
PACKAGE	PACKAGE 00000000
SPECIAL	*20722005310C* ASSEMBLY:**** (DIFFUSION:****)

NOTE (1)

The LEAD FREE * description shows that the
 surface treatment of the terminal is lead free.

Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A

Outline Drawing
2SA2222SG



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