



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

2SC6082 — NPN Epitaxial Planar Silicon Transistor

50V / 15A High-Speed Switching Applications

Applications

- High-speed switching applications (switching regulator, driver circuit)

Features

- Adoption of MBIT process
- Large current capacitance
- Low collector-to-emitter saturation voltage
- High-speed switching

Specifications

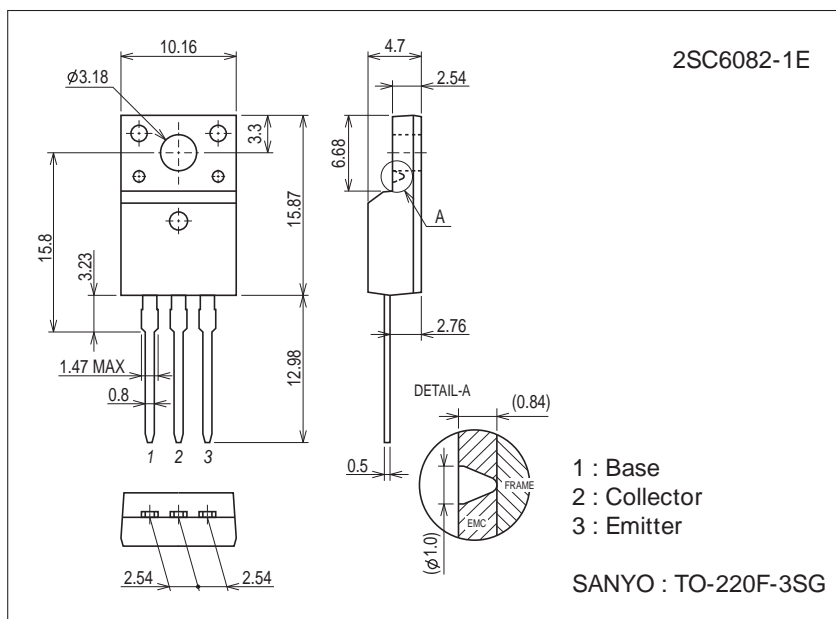
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		60	V
Collector-to-Emitter Voltage	VCES		60	V
	VCEO		50	V
Emitter-to-Base Voltage	VEBO		6	V
Collector Current	IC		15	A
Collector Current (Pulse)	ICP	PW≤10μs, duty cycle≤1%	20	A
Base Current	IB		3	A
Collector Dissipation	PC		2	W
		Tc=25°C	23	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Package Dimensions

unit : mm (typ)

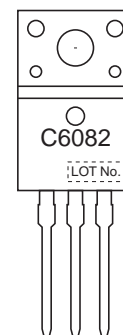
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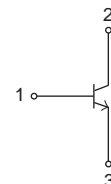
Product & Package Information

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

Marking



Electrical Connection

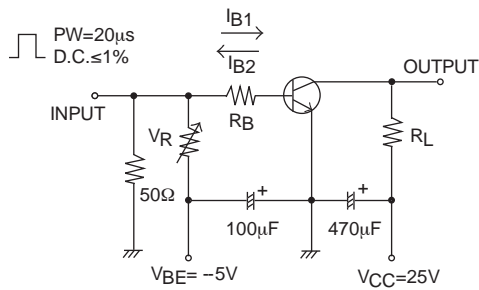


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Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=40\text{V}, I_E=0\text{A}$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0\text{A}$			10	μA
DC Current Gain	h_{FE1}	$V_{CE}=2\text{V}, I_C=330\text{mA}$	200		560	
	h_{FE2}	$V_{CE}=2\text{V}, I_C=10\text{A}$	50			
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=2\text{A}$		195		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		85		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=7.5\text{A}, I_B=375\text{mA}$		200	400	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=7.5\text{A}, I_B=375\text{mA}$			1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0\text{A}$	60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=100\mu\text{A}, R_{BE}=0\Omega$	60			V
	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0\text{A}$	6			V
Turn-On Time	t_{on}	See specified Test Circuit		52		ns
Storage Time	t_{stg}			560		ns
Fall Time	t_f			37		ns

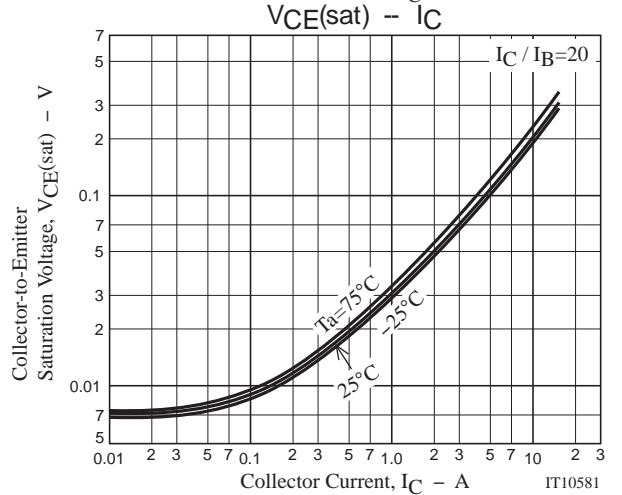
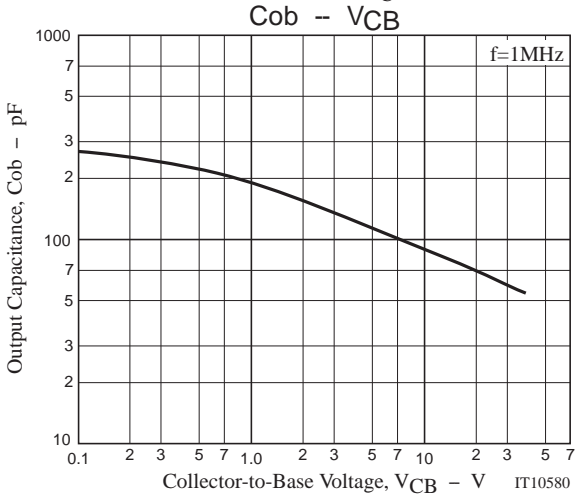
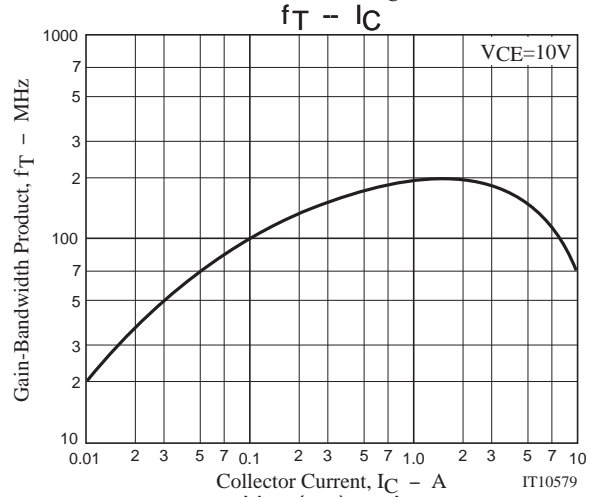
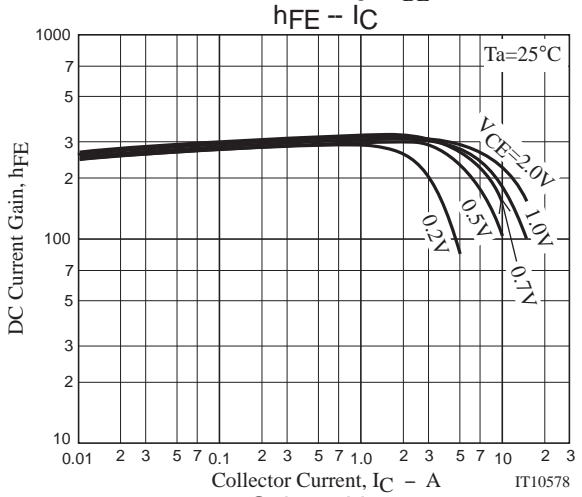
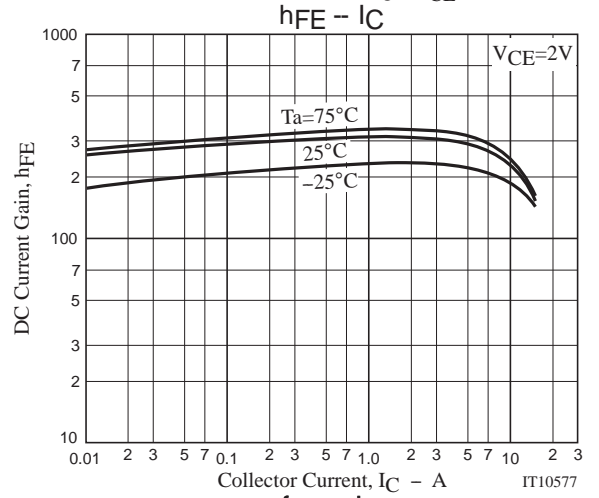
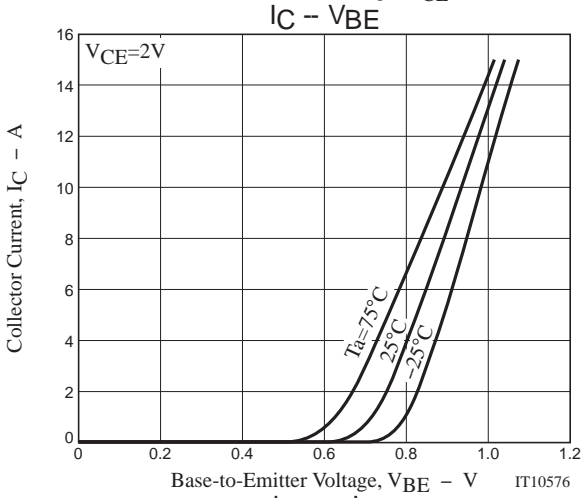
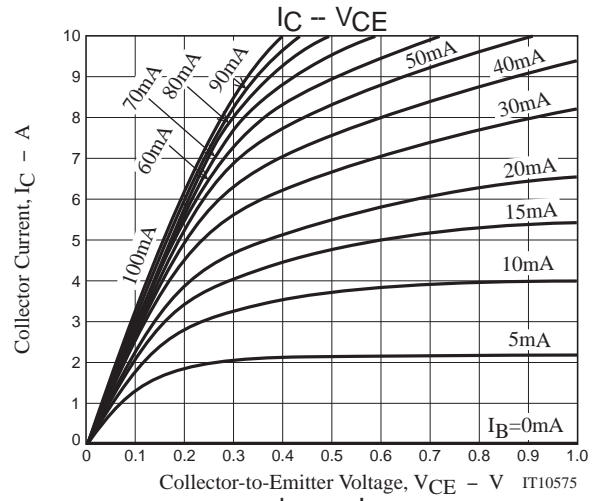
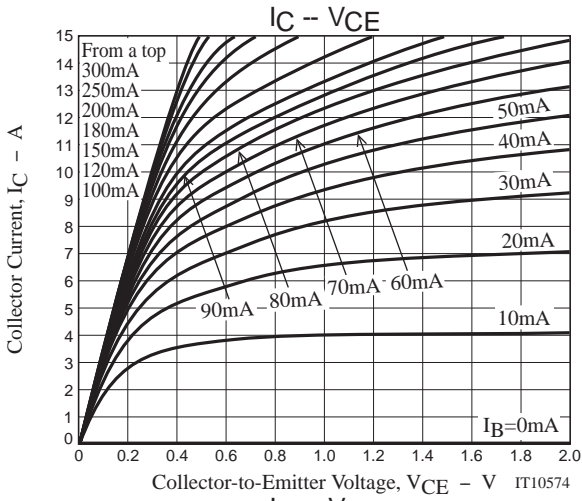
Switching Time Test Circuit

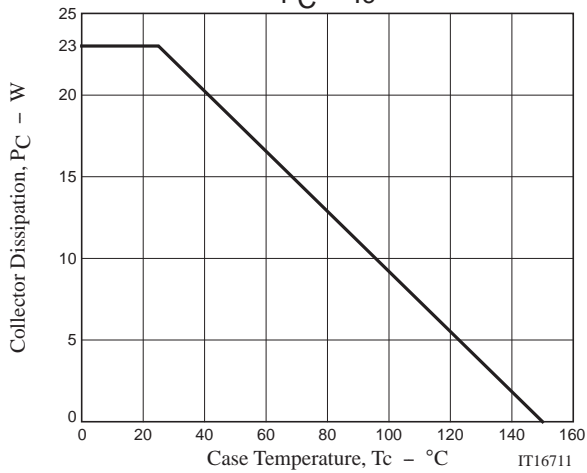
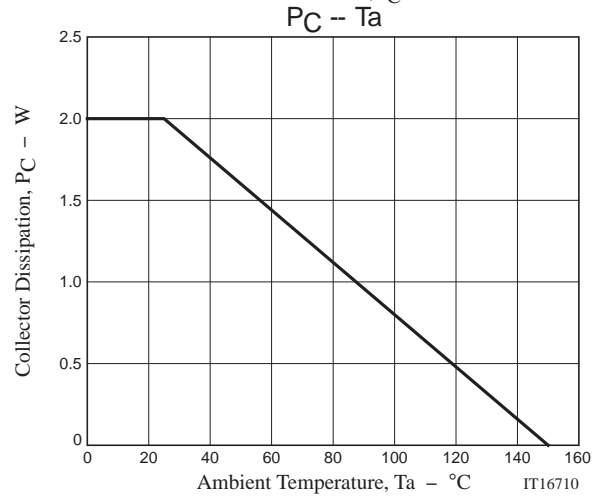
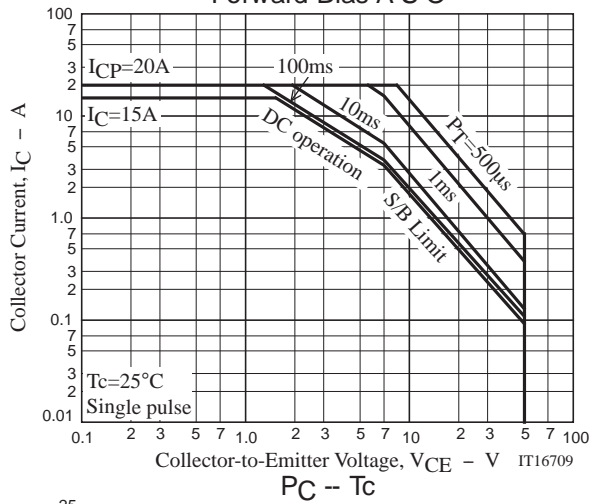
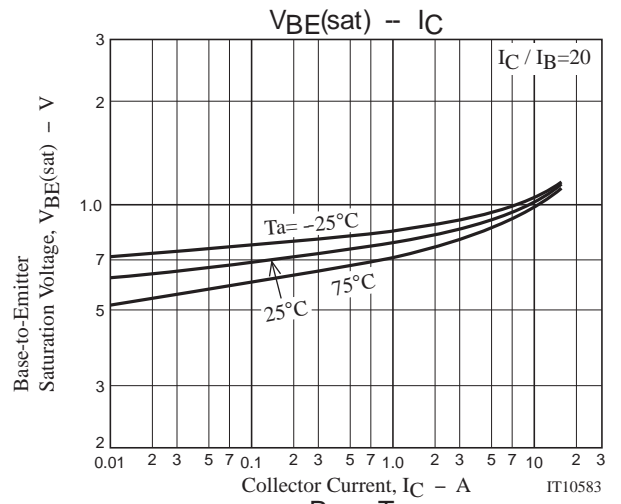
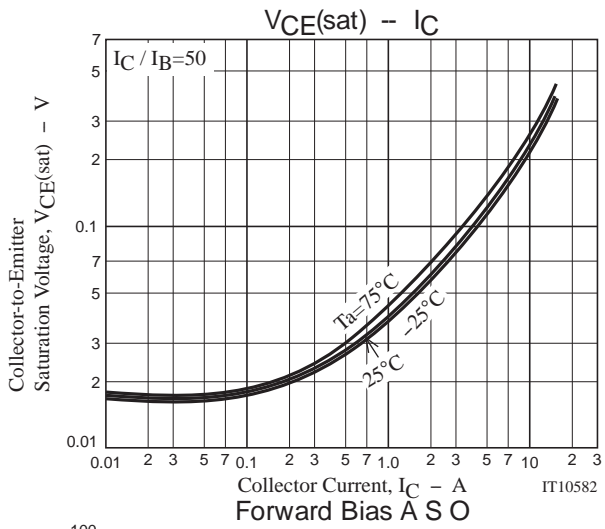


$$I_C = 20I_{B1} = -20I_{B2} = 5\text{A}$$

Ordering Information

Device	Package	Shipping	memo
2SC6082-1E	TO-220F-3SG	50pcs./magazine	Pb Free





Magazine Specification

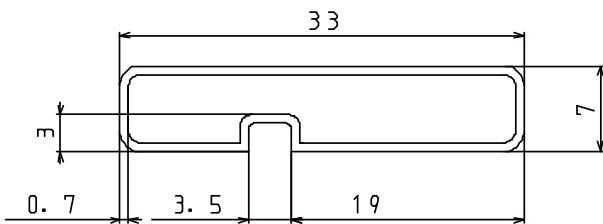
2SC6082-1E

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-3SG	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

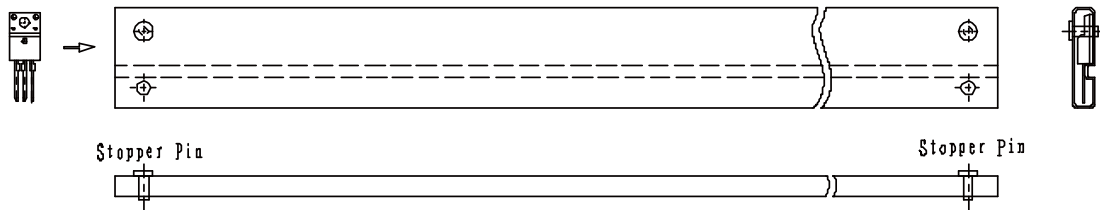
2. Magazine dimensions

(unit:mm)

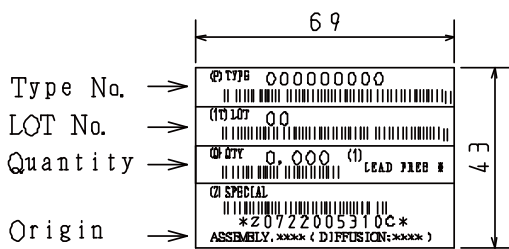


Tolerance=±0.3mm
 Thickness=0.7±0.2mm
 Length =532.5±2mm
 Material =PVC (Antistatic treatment)

3. Storage method to magazine

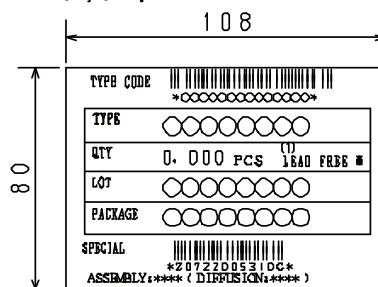


4. Inner box label (unit:mm)



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.



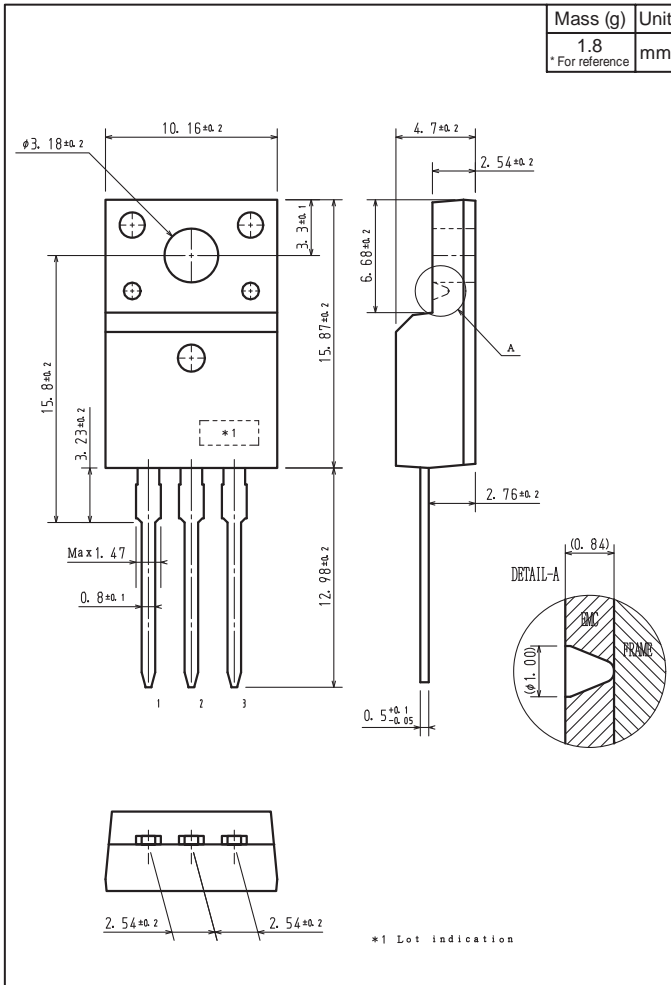
NOTE (1)

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

2SC6082-1E



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