Ordering number : EN8022A

2SA2127

Bipolar Transistor
-50V, -2A, Low VCE(sat), PNP Single MP

ON Semiconductor®
http://onsemi.com

Applications
- Voltage regulators, relay drivers, lamp drivers, electrical equipment

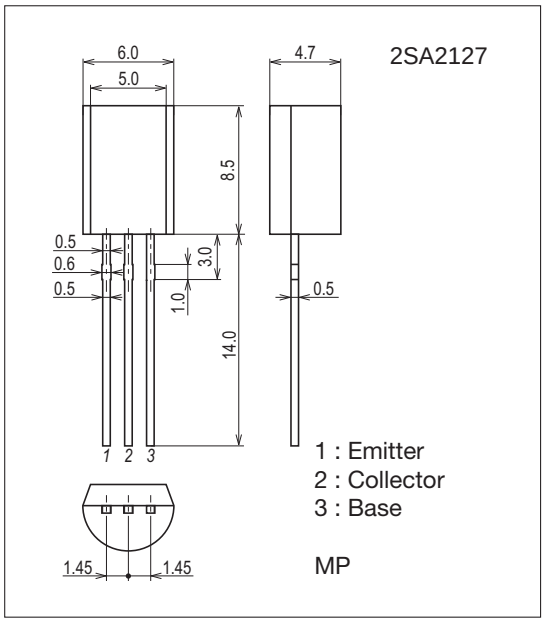
Features
- Adoption of MBIT process
- High current capacity and wide ASO
- Low saturation voltage

Specifications
Absolute Maximum Ratings at Ta=25°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		−2	A
Collector Current (Pulse)	I_{CP}		−4	A
Base Current	I_B		−400	mA
Collector Dissipation	P_C		1	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

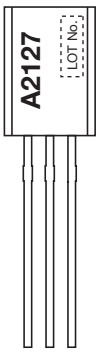
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions
unit : mm (typ)
7520-002

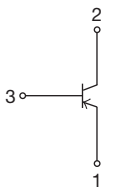


Product & Package Information
- Package : MP
- JEITA, JEDEC : SC-51, TO-92(1-WATT), TO-226AE
- Minimum Packing Quantity : 1,000 pcs./box

Marking



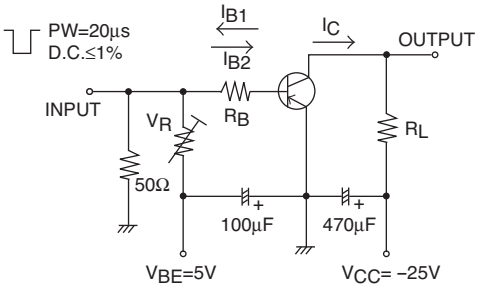
Electrical Connection



Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}= −40V, I_E=0A			−1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}= −4V, I_C=0A			−1	μA
DC Current Gain	$h_{FE}1$	V_{CE}= −2V, I_C= −100mA	200		560	
	$h_{FE}2$	V_{CE}= −2V, I_C= −1.5A	40			
Gain-Bandwidth Product	f_T	V_{CE}= −10V, I_C= −300mA		420		MHz
Output Capacitance	Cob	V_{CB}= −10V, f=1MHz		16		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C= −1A, I_B= −50mA		−0.2	−0.4	V
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C= −1A, I_B= −50mA		−0.9	−1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C= −10μA, 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= −10μA, I_C=0A	−6			V
Turn-On Time	t_{on}	See specified Test Circuit.		35		ns
Storage Time	t_{stg}			250		ns
Fall Time	t_f			24		ns

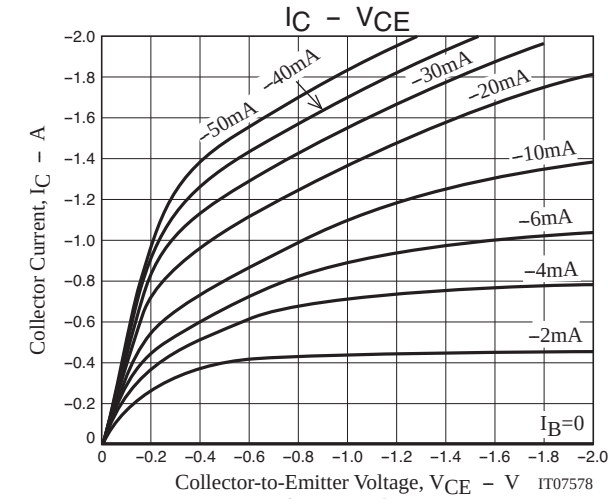
Switching Time Test Circuit

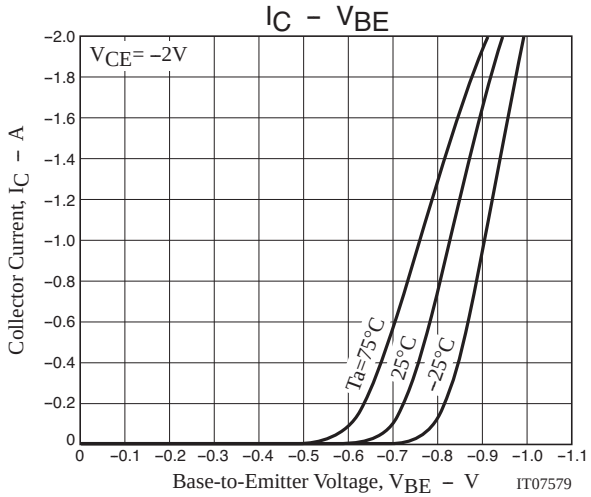


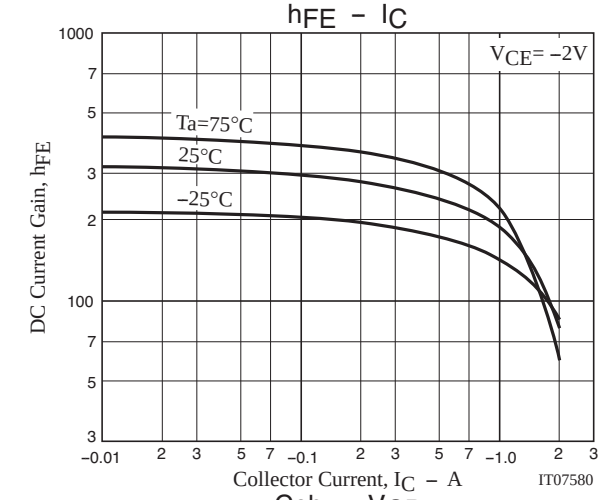
I_C=10I_{B1}= −10I_{B2}= −0.5A

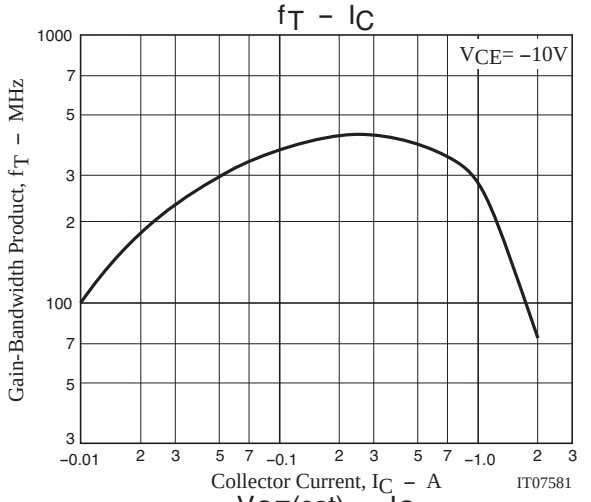
Ordering Information

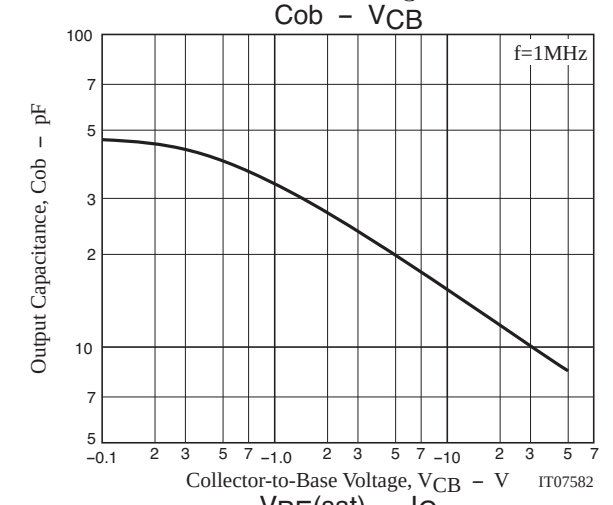
Device	Package	Shipping	memo
2SA2127	MP	500pcs./bag	Pb Free
2SA2127-AE	MP	1,000pcs./box	

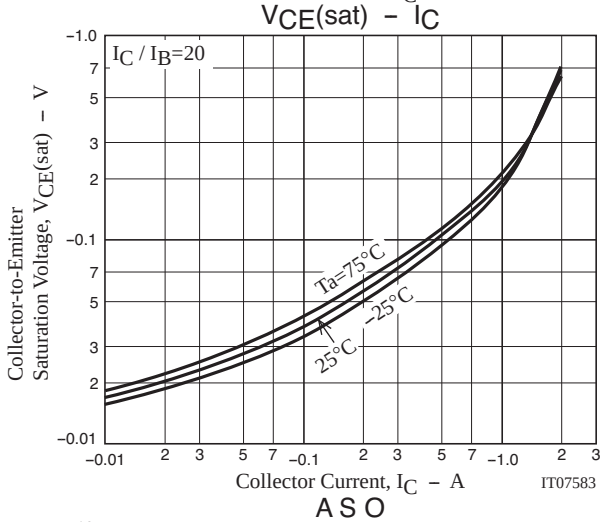


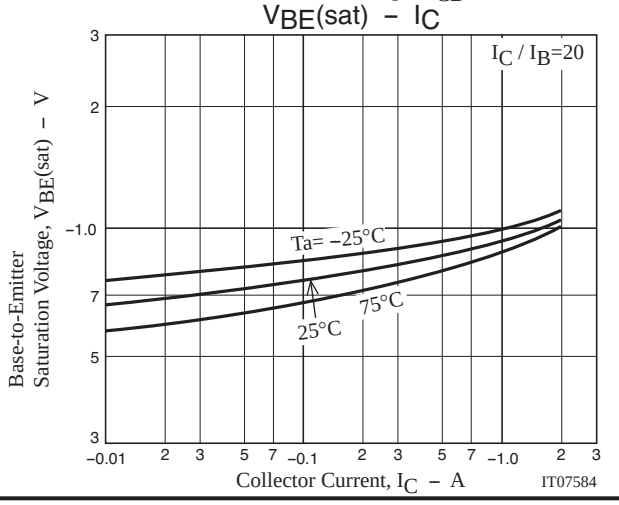


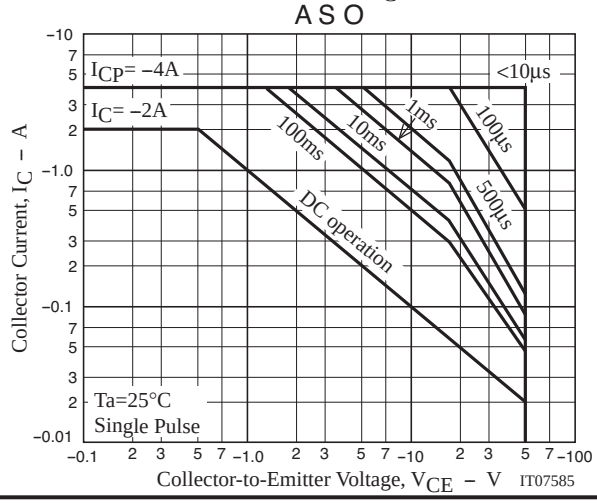


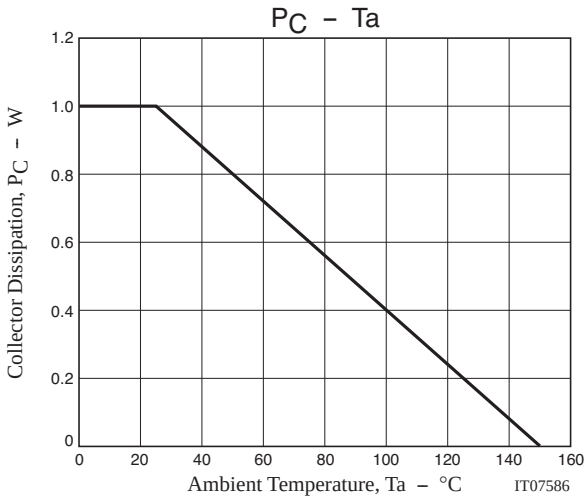












Taping Specification

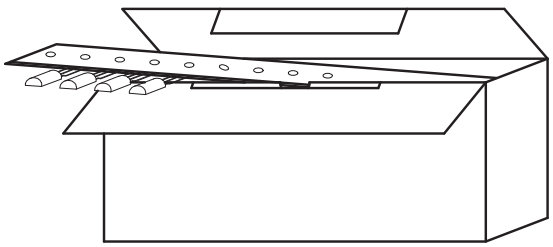
2SA2127-AE

1. Packing Format

Package Name	Packing Type	Maximum Number of devices contained (pcs)		Packing format	
		Inner BOX	number of contained	Outer Box (C-14)	Outer Box (C-15)
MP	AE/AZ	C-3 Dimensions:mm (external) 330×45×125	1,000	16inner Box contained (16,000pcs) Dimensions:mm (external) 500×345×195	8inner Box contained (8,000pcs) Dimensions:mm (external) 345×260×195
	AJ	C-5 Dimensions:mm (external) 330×45×245	2,000	8inner Box contained (16,000pcs) Dimensions:mm (external) 500×345×195	4inner Box contained (8,000pcs) Dimensions:mm (external) 345×260×195

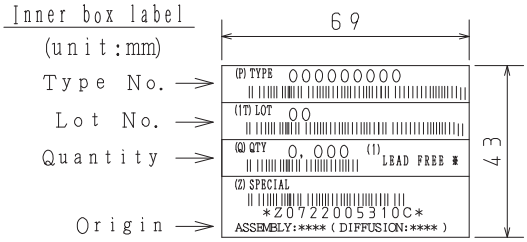
Packing method

Put zigzag folding in an inner box.



Inner box label

(unit:mm)

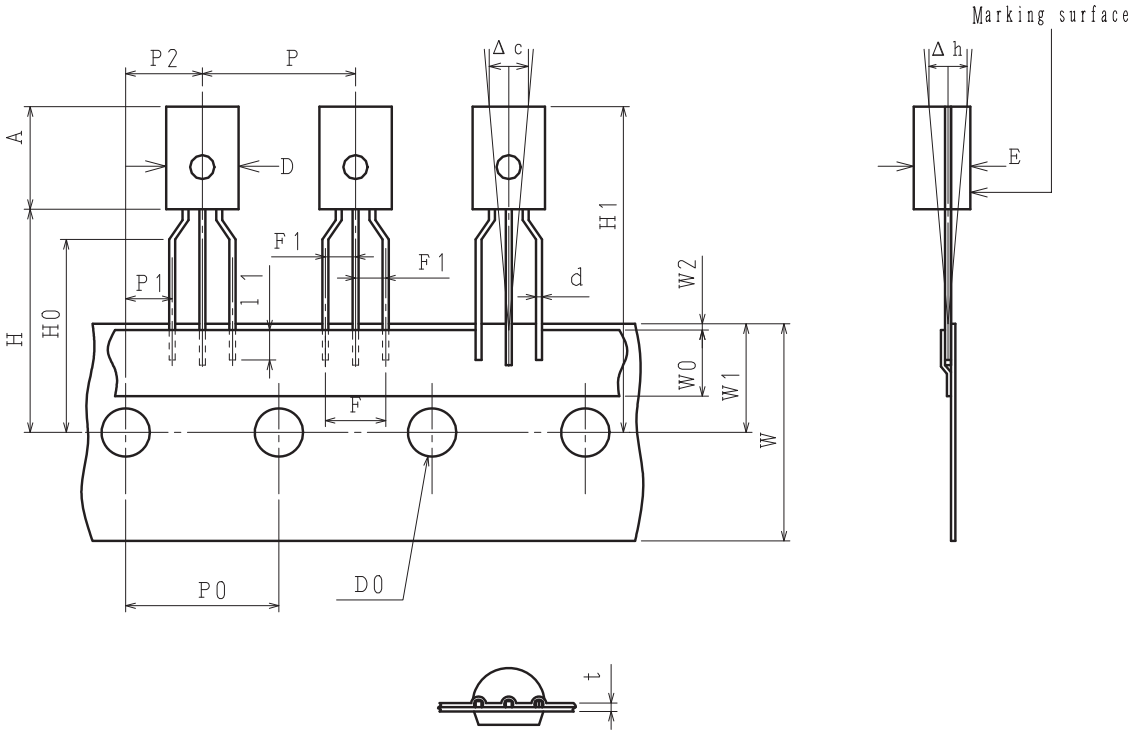


NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping specifications

2-1. Carrier tape size



2-2. Taping size standard

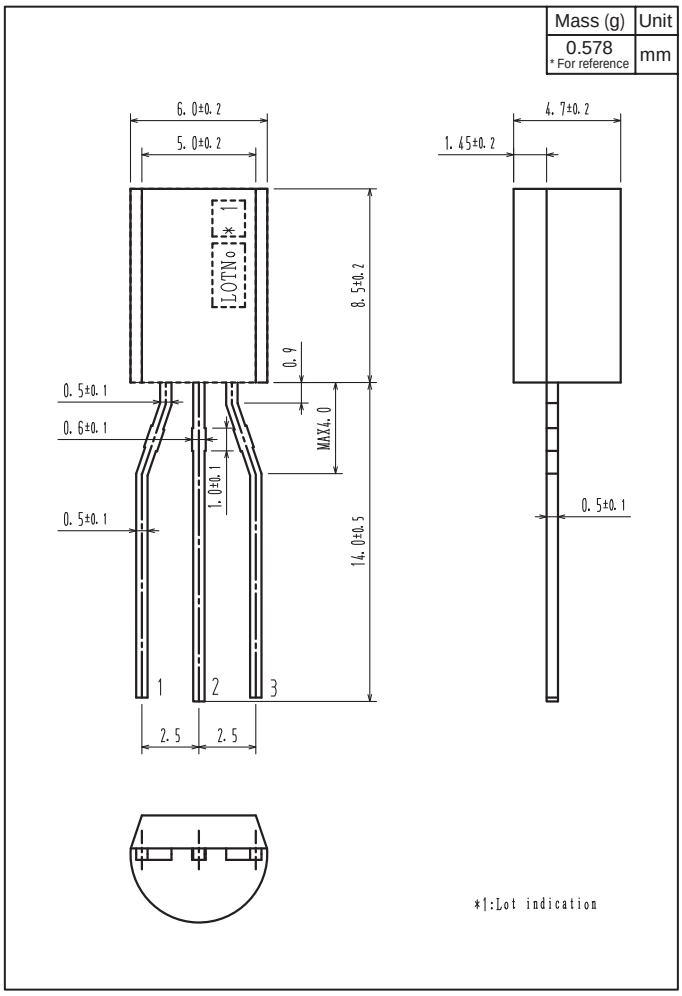
unit:mm

Item	Symbol	Standard	Tolerance
Work piece outside diameter	D	6.0	±0.2
	E	4.7	±0.2
Work piece height	A	8.5	±0.2
Lead wire diameter	d	0.5×0.5t	±0.1
Bonded lead wire	l1	2.5MIN	
Pitch between products	P	12.7	±1.0
Pitch between perforations	P0	12.7	±0.2
Accumulation Pitch	P0×20	254.0	±1.0
Distance between lead wire	F	5.0	+0.8 −0.2
Lead wire pitch distance	F1	2.5	+0.4 −0.1
Product inclination	△h	0	±2.0	
Displacement of perforations	P1	3.85	±0.3	Measurement position is the bottom of the clinch
	P2	6.35	±0.3	
Displacement of tape	W2	0.5MAX		Not to be displaced to the outside of the board

Item	Symbol	Standard	Tolerance
Tape width	W	18.0	+1.0 −0.5
Adhesive tape	W0	6.0	±1.5
Displacement of perforations	W1	9.0	±0.5
Work piece bottom surface position	H	18.5	±1.0
Insert stopper position	H0	16.0	±0.5
Work piece upper limit position	H1	27.0	±1.5
Perforations diameter	D0	φ4.0	±0.2
Tape thickness	t	0.7	±0.2
Product inclination	△c	0	±1.5

Outline Drawing

2SA2127-AE



Bag Packing Specification

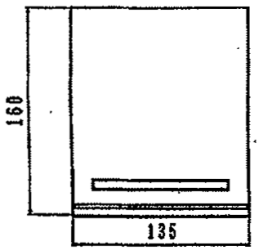
2SA2127

1 . Packing condition

Storange package outline name	Maximum number of devices contained (pcs.)			Packing condition	
	Bags	Inner box	Devices contained	Outer box (A−1)	Outer box (A−2)
MP	500	B−1 Inner box dimensions : mm (external) 445×225×55	5,000	5 inner boxes contained (25,000) Outer box dimensions : mm (external) 470 × 250 × 300	3 inner boxes contained (15,000) Outer box dimensions : mm (external) 470 × 250 × 190

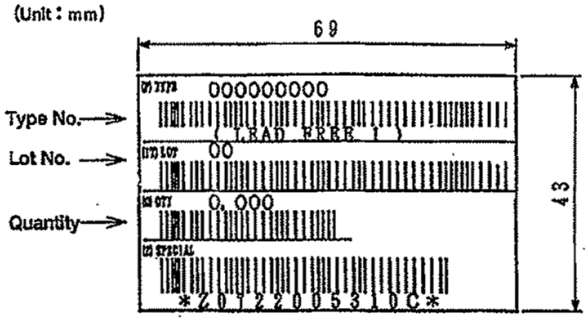
2 . Bag dimensions

(Unit : mm)



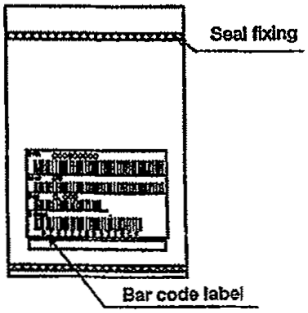
3 . Bar code label

(Unit : mm)



*LEAD FREE 1 :
Lead-free External terminal surface treatment product.

4 . Housing devices in the bag



Outline Drawing

2SA2127