



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





2SA1768

Bipolar Transistor -180V, -160A, Low VCE(sat) PNP Single NMP

ON Semiconductor®

<http://onsemi.com>

Applications

- Color TV sound output, converter, inverter

Features

- Adoption of MBIT process
- High breakdown voltage, large current capacity
- Fast switching speed

Specifications

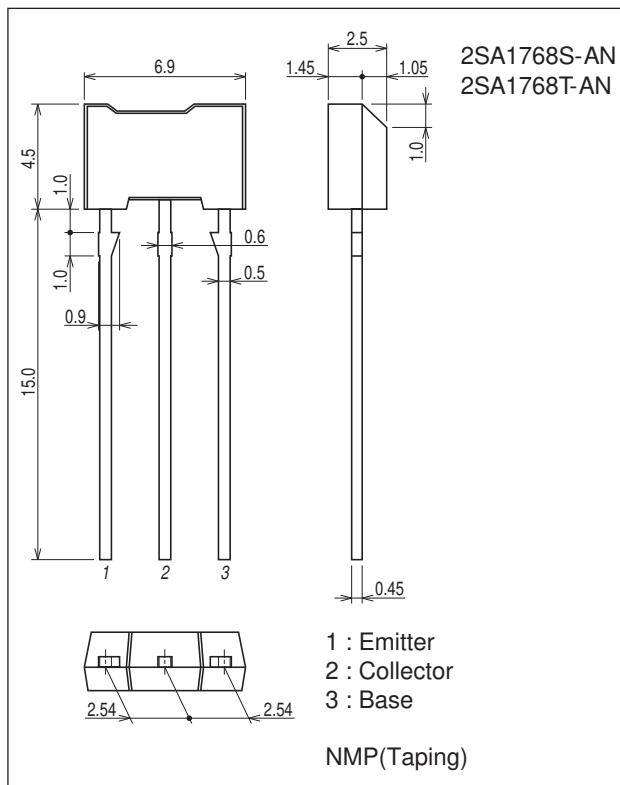
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CBO}		-180	V
Collector-to-Emitter Voltage	V _{CEO}		-160	V
Emitter-to-Base Voltage	V _{EBO}		-6	V
Collector Current	I _C		-0.7	A
Collector Current (Pulse)	I _{CP}		-1.5	A
Collector Dissipation	PC		1	W
Junction Temperature	T _j		150	°C
Storage Temperature	T _{stg}		-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

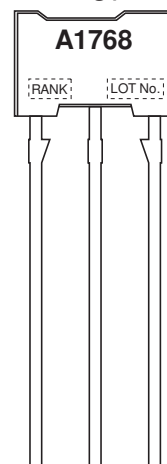
unit : mm (typ)
7540-001



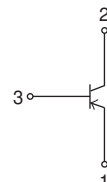
Product & Package Information

- Package : NMP(Taping)
- JEITA, JEDEC : SC-71
- Minimum Packing Quantity : 2,500 pcs./box

Marking(NMP(Taping))



Electrical Connection



2SA1768

Electrical Characteristics at Ta=25°C

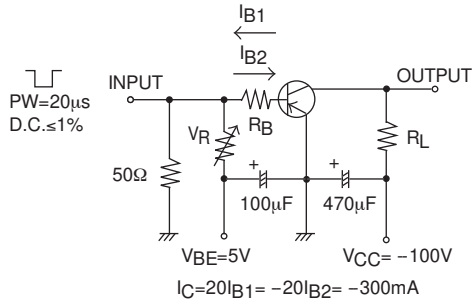
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =-120V, I _E =0A			-0.1	μA
Emitter Cutoff Current	IEBO	V _{EB} =-4V, I _C =0A			-0.1	μA
DC Current Gain	h _{FE1}	V _{CE} =-5V, I _C =-100mA	140*		400*	
	h _{FE2}	V _{CE} =-5V, I _C =-10mA	90			
Gain-Bandwidth Product	f _T	V _{CE} =-10V, I _C =-50mA		120		MHz
Output Capacitance	C _{ob}	V _{CB} =-10V, f=1MHz		11		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =-250mA, I _B =-25mA		-0.2	-0.5	V
Base-to-Emitter Saturation Voltage	V _{BE(sat)}			-0.85	-1.2	V
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}	I _C =-10μA, I _E =0A	-180			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =-1mA, R _{BE} =∞	-160			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.		60		ns
Storage Time	t _{stg}			900		ns
Fall Time	t _f			60		ns

* : The 2SA1768 is classified by 100mA h_{FE} as follows :

Rank	S	T
h _{FE}	140 to 280	200 to 400

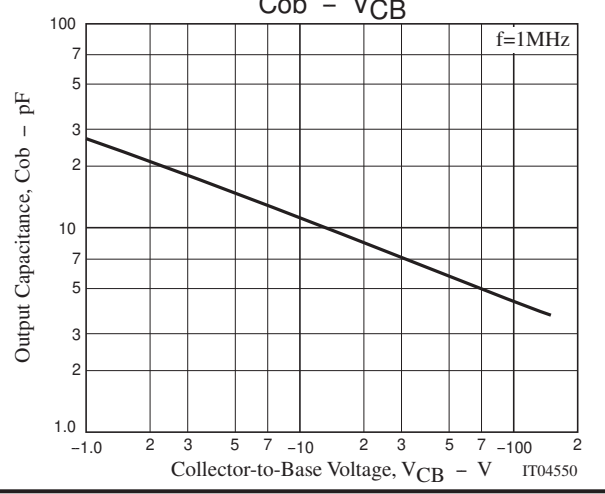
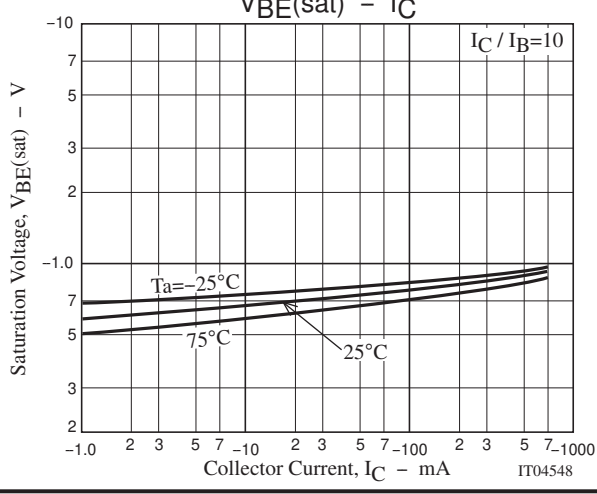
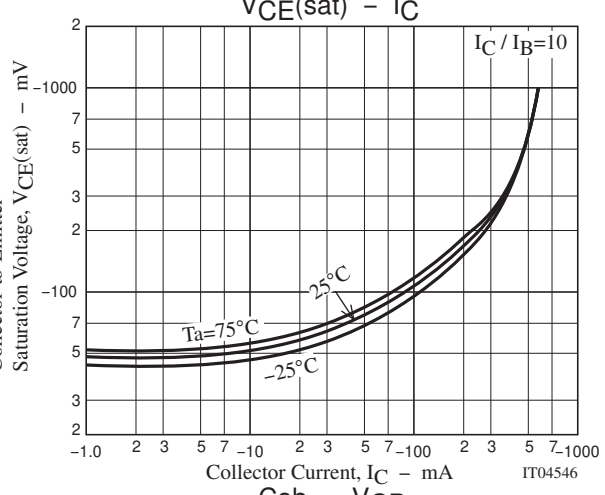
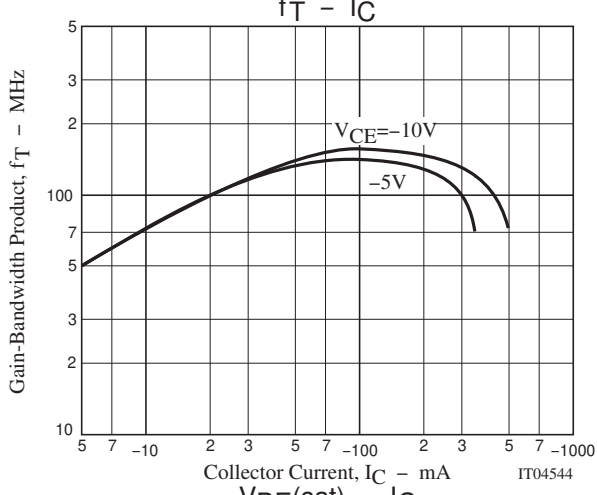
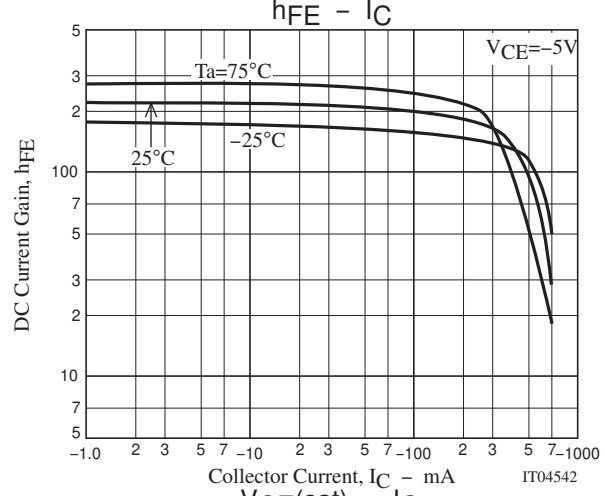
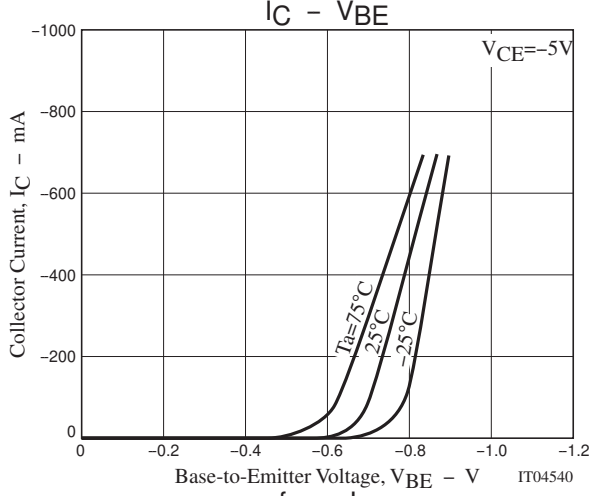
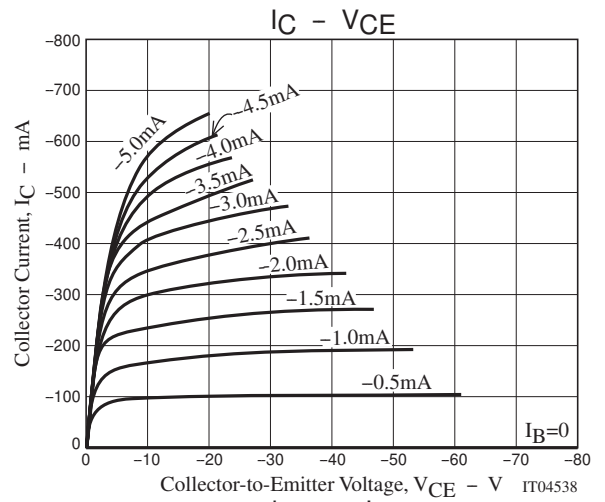
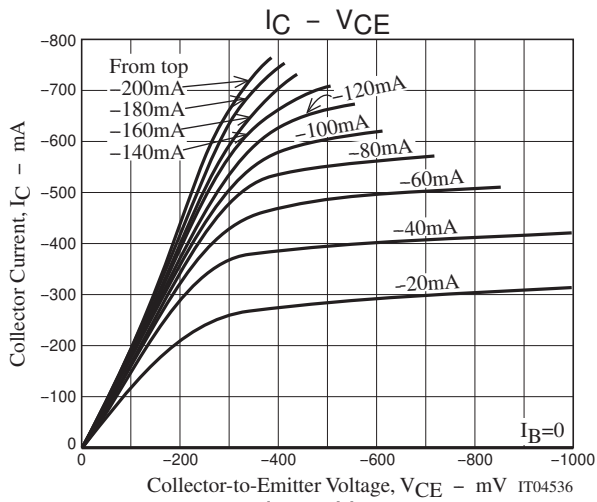
Switching Time Test Circuit

2SA1768

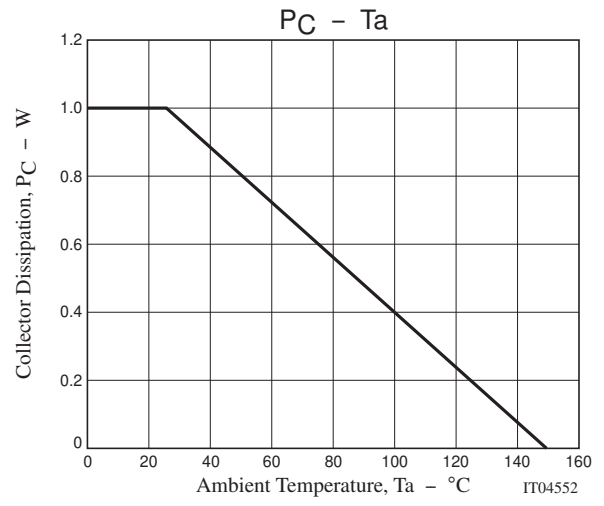
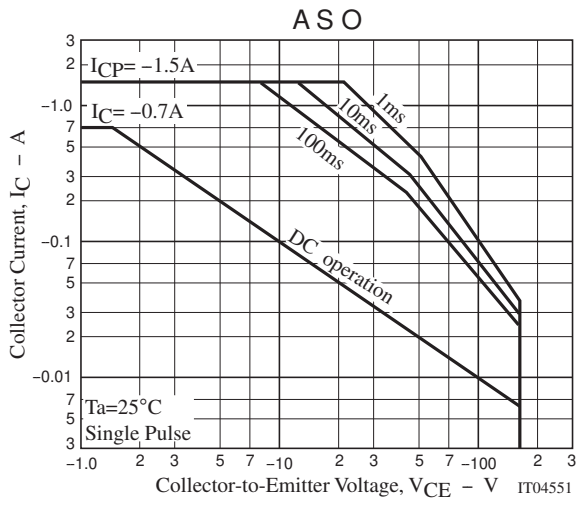


Ordering Information

Device	Package	Shipping	memo
2SA1768S-AN	NMP(Taping)	2,500pcs./box	Pb Free
2SA1768T-AN	NMP(Taping)	2,500pcs./box	



2SA1768



Bag Packing Specification

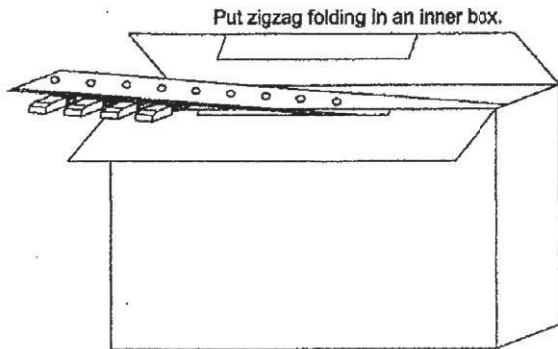
2SA1768S-AN, 2SA1768T-AN

NMP (Zigzag folding)

Storage package Outline name	Package type	Maximum Number of devices contained (pcs.)		Packing format	
		Inner box No.	Storage quantity	Outer box (C-6)	Outer box (C-8)
NMP	AN/AZ	C-3 Inner box Dimensions :mm(external) 330×45×125	2,500	8 inner boxes contained(20,000pcs.) Outer box Dimensions:mm(external) 585×345×195	4 inner boxes contained(10,000pcs.) Outer box Dimensions:mm(external) 345×300×195

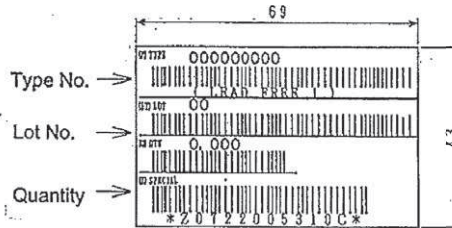
1. Packing format

Packing method



2. Bar code label

(Unit : mm)

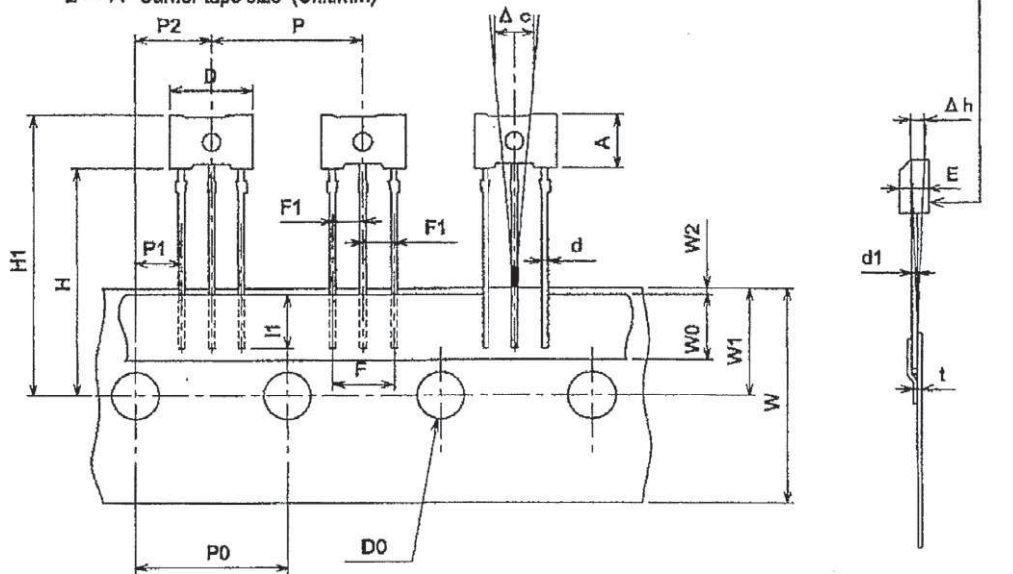


*LEAD FREE 1:

Lead-free External terminal surface treatment product.

2. Taping specifications

2-1. Carrier tape size (Unit:mm)



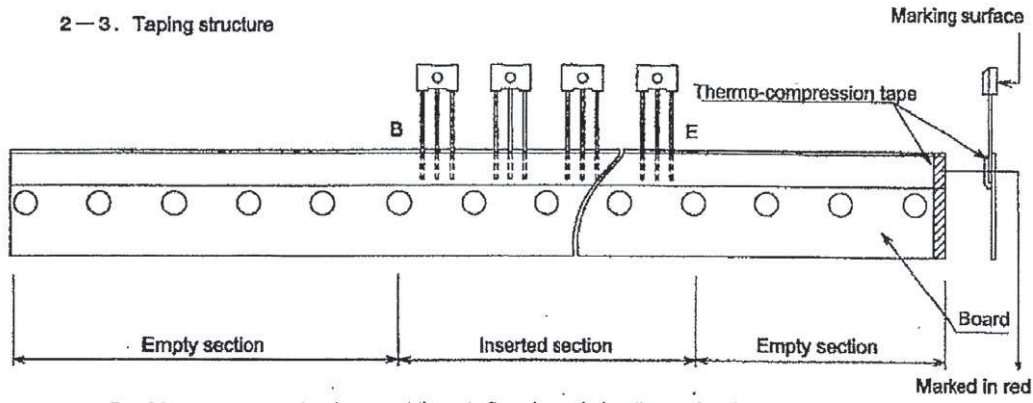
2-2. Taping size standard

Item	Symbol	Standard	Tolerance
Work piece outside diameter	D	6.9	±0.2
	E	2.5	±0.2
Work piece height	A	4.5	±0.2
Lead wire diameter	d	0.5	±0.1
Lead wire thickness	d1	0.45	±0.1
Bonded lead wire	l1	3.0MIN	
Pitch between products	P	12.7	±0.5
Pitch between perforations	P0	12.7	±0.2
Total pitch for 21 perforations	P0×20	254.0	±1.0
Distance between lead wire	F	5.0	+0.8 -0.2
Lead wire pitch distance	F1	2.54	+0.4 -0.1
Displacement of perforations	P1	3.81	±0.3
	P2	6.35	±0.3
Displacement of tape	W2	0~0.5	

Unit:mm

Item	Symbol	Standard	Tolerance
Tape width	W	18.0	±0.5
Adhesive tape	W0	6.0	±0.5
Displacement of perforations	W1	9.0	±0.5
Work piece bottom surface position	H	19.0	+1.0 -0.5
Work piece upper limit position	H1	23.5	±1.0
Perforations diameter	D0	φ4.0	±0.2
Tape thickness (total thickness)	t	0.6	±0.2
Product inclination	Δc	0	±0.7
Product inclination	Δh	0	±1.0

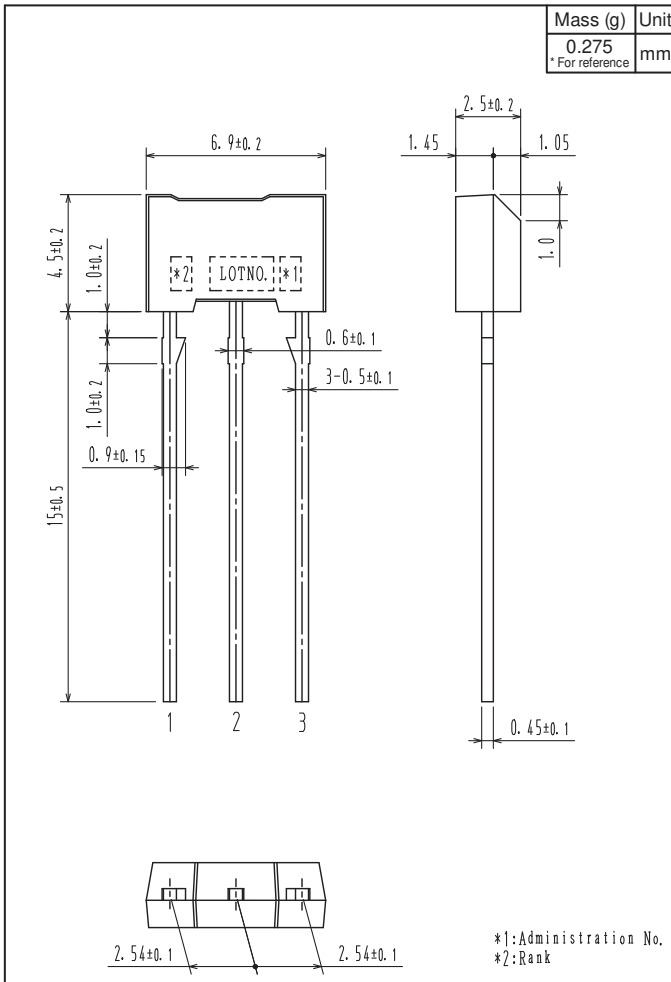
2—3. Taping structure



- Provide an empty section for about three to five pieces in leading and end portions of the tape.
- Provide an empty section in the fold-back portion.
- Provide marking in red to the E-side end of the board.

Outline Drawing

2SA1768S-AN, 2SA1768T-AN



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