

2SC4488T-AN Datasheet



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DiGi Electronics Part Number	2SC4488T-AN-DG
Manufacturer	onsemi
Manufacturer Product Number	2SC4488T-AN
Description	TRANS NPN 100V 1A 3NMP
Detailed Description	Bipolar (BJT) Transistor NPN 100 V 1 A 120MHz 1 W Through Hole 3-NMP



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Purchase and inquiry

Manufacturer Product Number:

2SC4488T-AN

Series:

-

Transistor Type:

NPN

Voltage - Collector Emitter Breakdown (Max):

100 V

Current - Collector Cutoff (Max):

100nA (ICBO)

Power - Max:

1 W

Operating Temperature:

150°C (TJ)

Package / Case:

SC-71

Base Product Number:

2SC4488

Manufacturer:

onsemi

Product Status:

Obsolete

Current - Collector (Ic) (Max):

1 A

Vce Saturation (Max) @ Ib, Ic:

400mV @ 40mA, 400mA

DC Current Gain (hFE) (Min) @ Ic, Vce:

100 @ 100mA, 5V

Frequency - Transition:

120MHz

Mounting Type:

Through Hole

Supplier Device Package:

3-NMP

Environmental & Export classification

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

REACH Status:

REACH Unaffected

HTSUS:

8541.29.0075

Ordering number : EN3094B



2SA1708/2SC4488

Bipolar Transistor (-)100V, (-)1A, Low $V_{CE(sat)}$, (PNP)NPN Single NMP

ON Semiconductor®

<http://onsemi.com>

Features

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

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Specifications

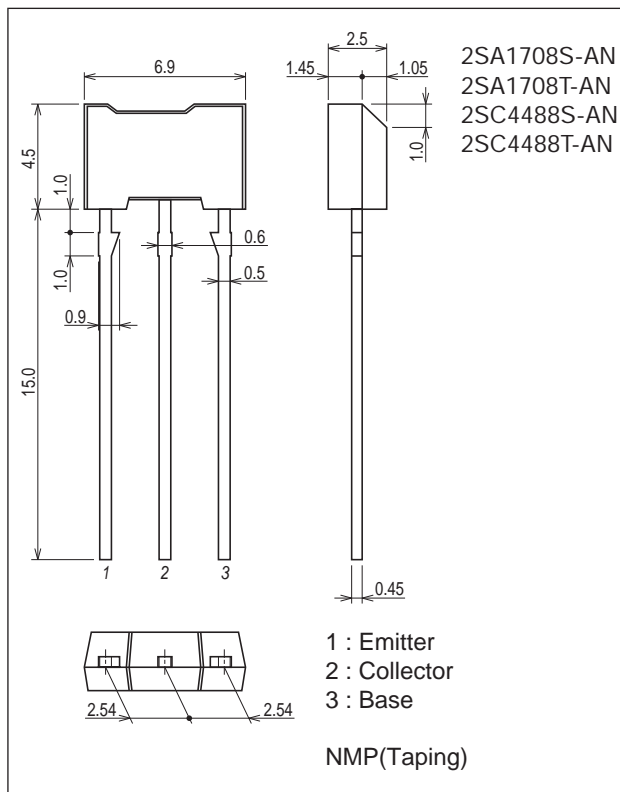
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-)120	V
Collector-to-Emitter Voltage	V_{CEO}		(-)100	V
Emitter-to-Base Voltage	V_{EBO}		(-)6	V
Collector Current	I_C		(-)1	A
Collector Current (Pulse)	I_{CP}		(-)2	A
Collector Dissipation	P_C		1	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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

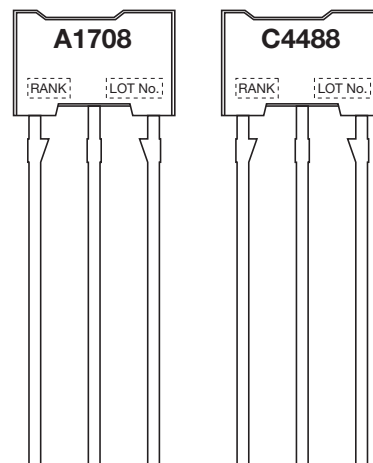
unit : mm (typ)
7540-001



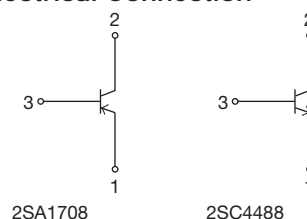
Product & Package Information

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

Marking(NMP(Taping))



Electrical Connection



2SA1708 / 2SC4488

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

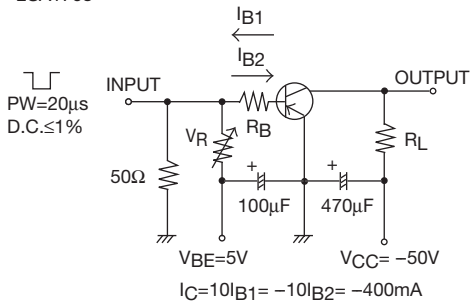
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)100\text{V}, I_E=0\text{A}$			(-)100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4\text{V}, I_C=0\text{A}$			(-)100	nA
DC Current Gain	h_{FE}	$V_{CE}=(-)5\text{V}, I_C=(-)100\text{mA}$	140*		400*	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10\text{V}, I_C=(-)100\text{mA}$		120		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10\text{V}, f=1\text{MHz}$		(13)8.5		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)400\text{mA}, I_B=(-)40\text{mA}$		(-0.2)0.1	(-0.6)0.4	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$			(-)0.85	(-)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu\text{A}, I_E=0\text{A}$	(-)120			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1\text{mA}, R_{BE}=\infty$	(-)100			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu\text{A}, I_C=0\text{A}$	(-)6			V
Turn-ON Time	t_{on}	See specified Test Circuit.		(80)80		ns
Storage Time	t_{stg}			(700)850		ns
Fall Time	t_f			(40)50		ns

* : The 2SA1708/2SC4488 are classified by 100mA h_{FE} as follows :

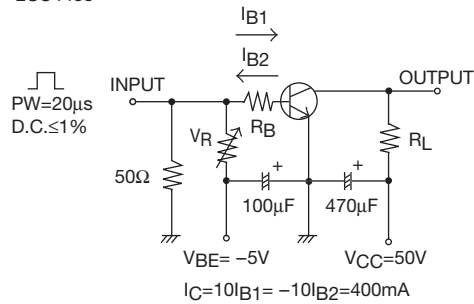
Rank	S	T
h_{FE}	140 to 280	200 to 400

Switching Time Test Circuit

2SA1708



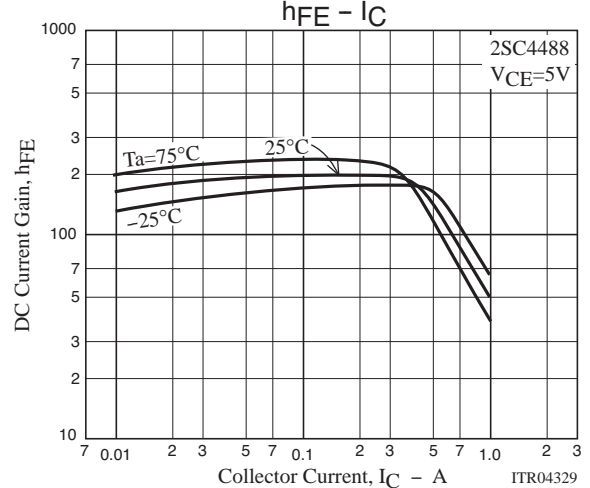
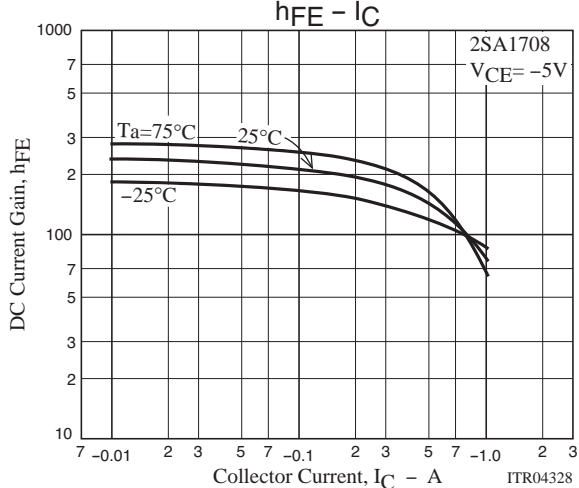
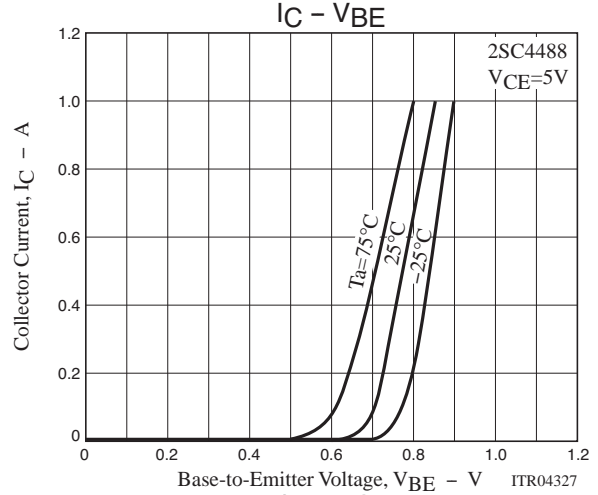
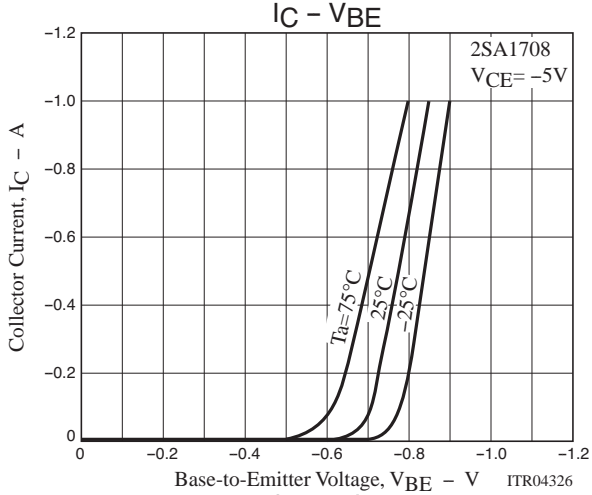
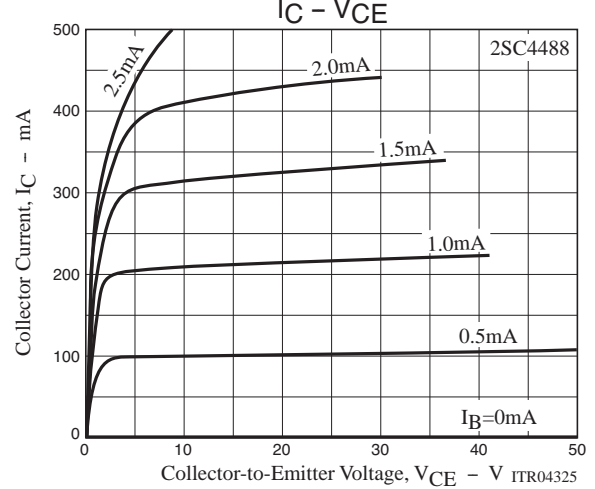
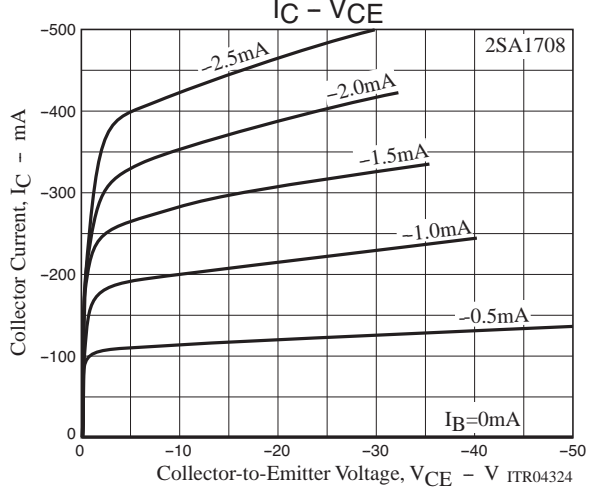
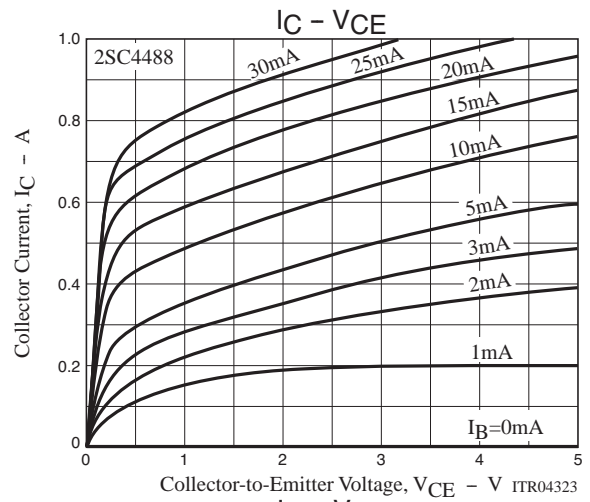
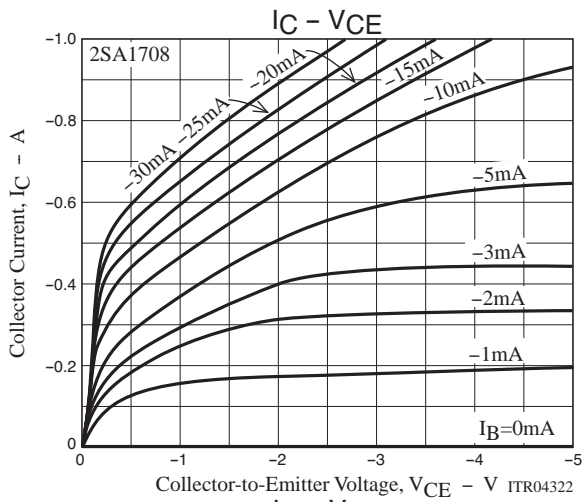
2SC4488



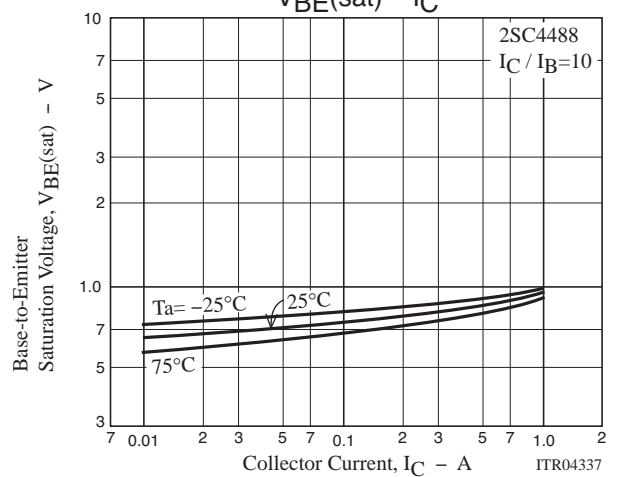
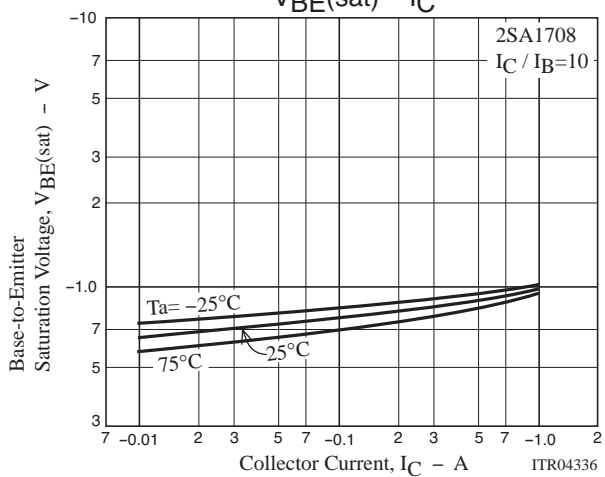
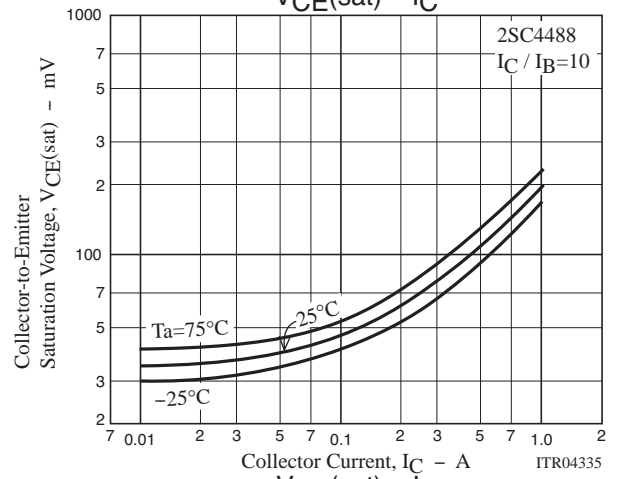
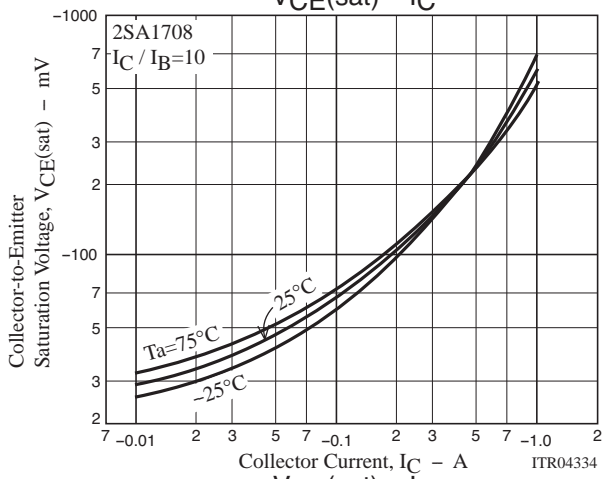
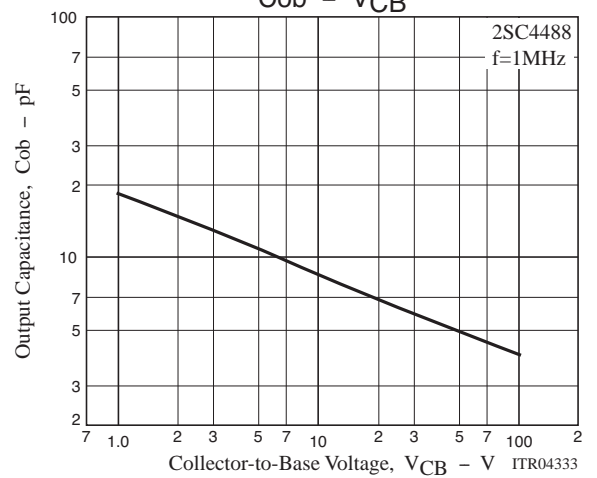
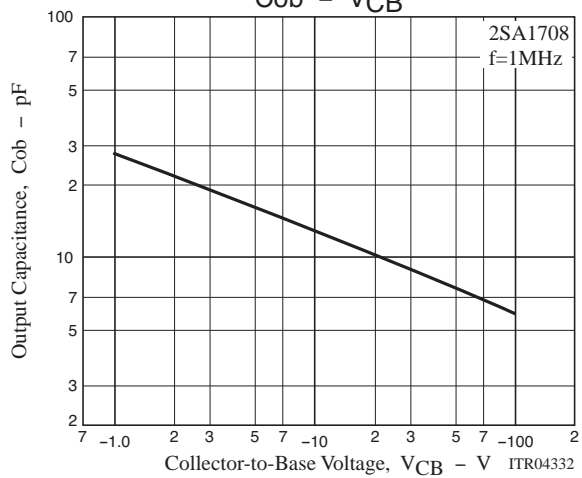
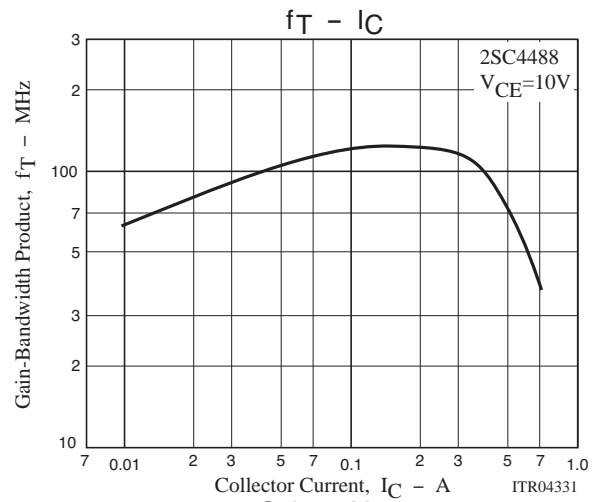
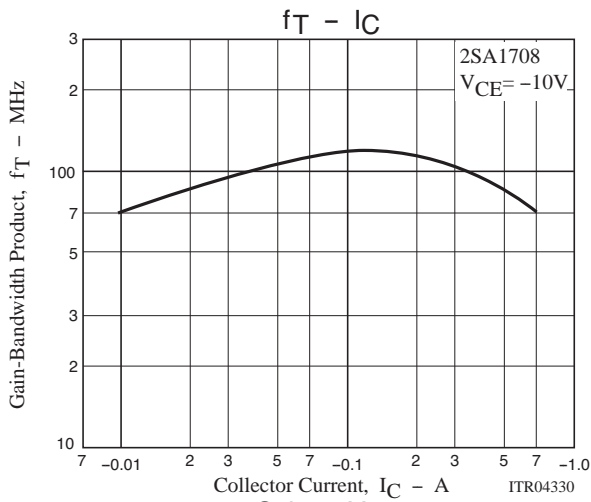
Ordering Information

Device	Package	Shipping	memo
2SA1708S-AN	NMP(Taping)	2,500pcs./box	Pb Free
2SA1708T-AN	NMP(Taping)	2,500pcs./box	
2SC4488S-AN	NMP(Taping)	2,500pcs./box	
2SC4488T-AN	NMP(Taping)	2,500pcs./box	

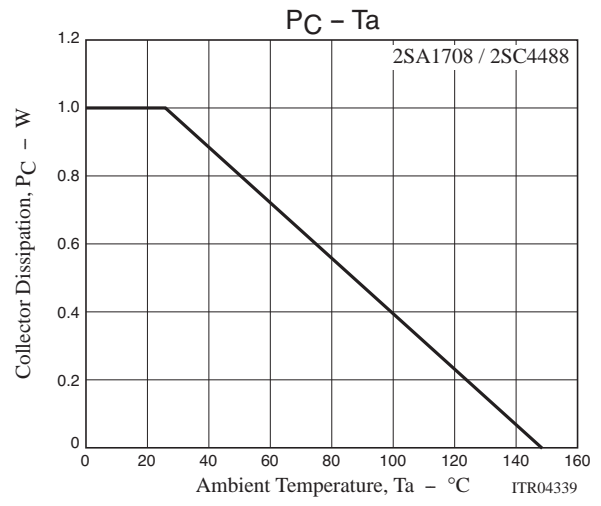
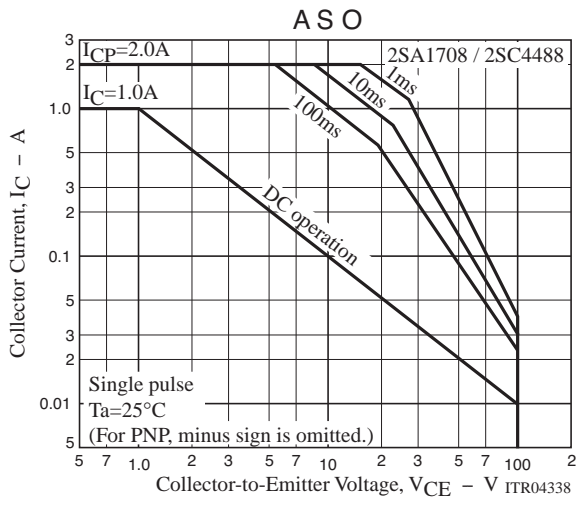
2SA1708 / 2SC4488



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Bag Packing Specification

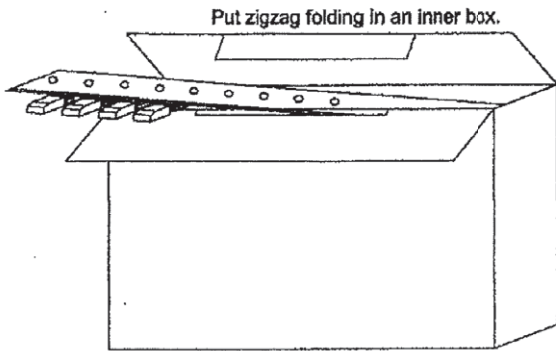
2SA1708S-AN, 2SA1708T-AN, 2SC4488S-AN, 2SC4488T-AN

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

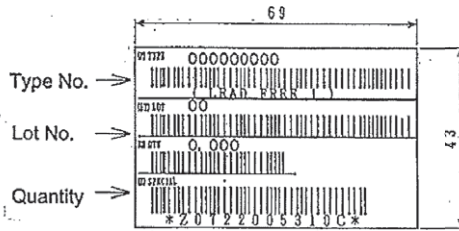
1. Packing format

Packing method



2. Bar code label

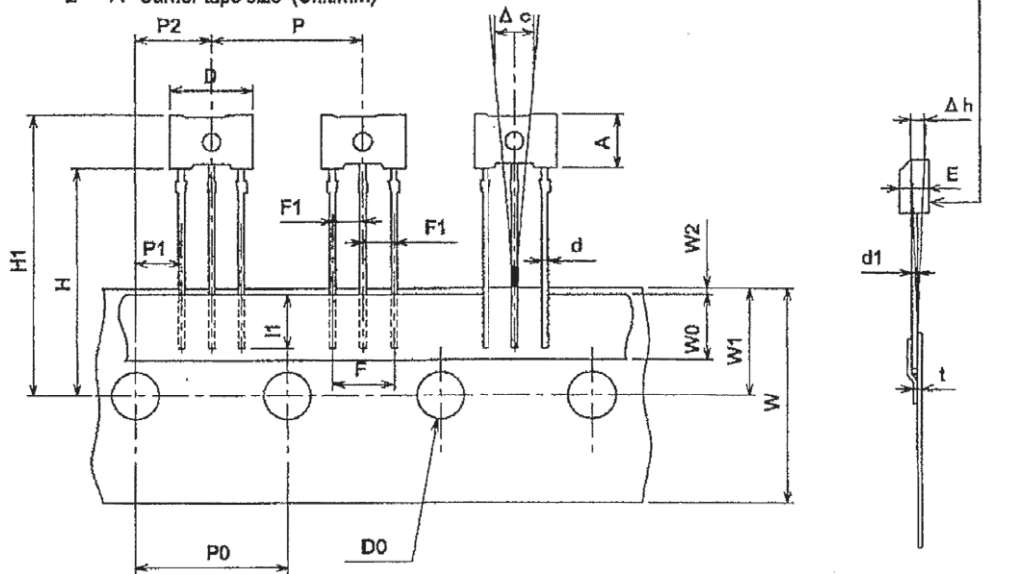
(Unit : mm)



*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

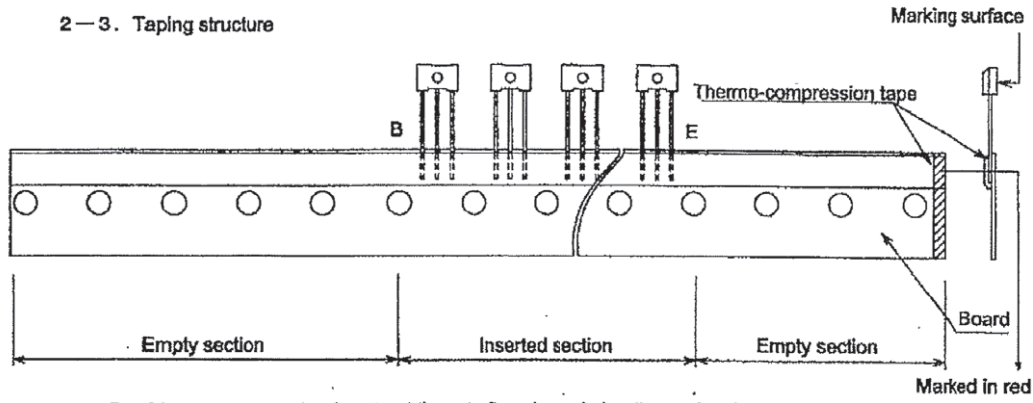
Item	Symbol	Standard	Tolerance
Work piece outside diameter	D	6.9	±0.2
	E	2.5	±0.2
Work piece height	A	4.5	±0.2
Lead wire diameter	d	0.5	±0.1
Lead wire thickness	d1	0.45	±0.1
Bonded lead wire	l1	3.0MIN	
Pitch between products	P	12.7	±0.5
Pitch between perforations	P0	12.7	±0.2
Total pitch for 21 perforations	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

2SA1708 / 2SC4488

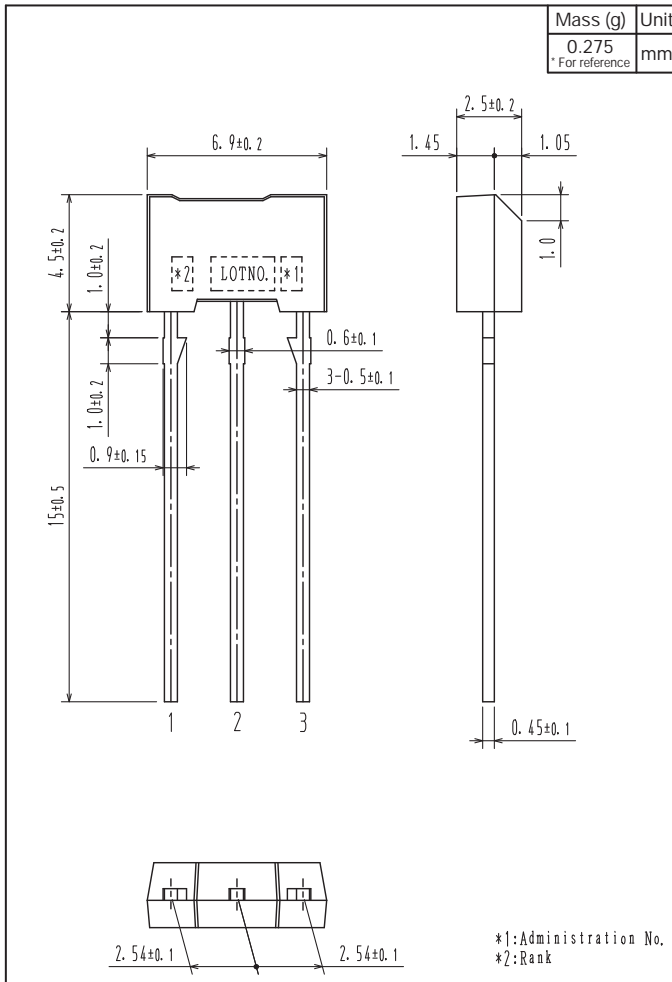
2-3. Taping structure



- 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

2SA1708S-AN, 2SA1708T-AN, 2SC4488S-AN, 2SC4488T-AN



2SA1708 / 2SC4488

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