Ordering number : ENA0411A

2SC6095

Bipolar Transistor
80V, 2.5A, Low V_{CE}(sat), NPN Single PCP

ON Semiconductor®
http://onsemi.com

Applicaitons
- DC / DC converter, relay drivers, lamp drivers, motor drivers, inverter

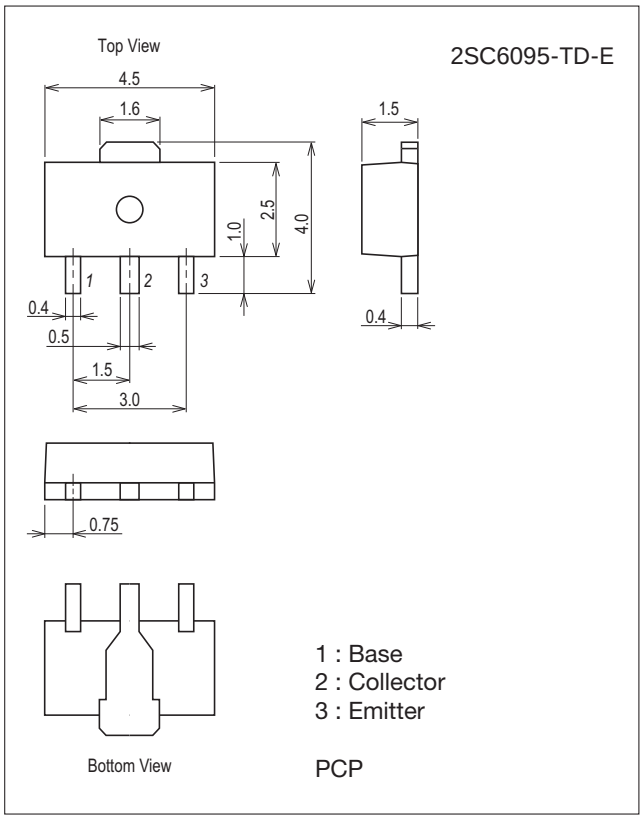
Features
- Adoption of FBET, MBIT process
- Low collector-to-emitter saturation voltage
- High allowable power dissipation
- Large current capacity
- High-speed switching

Specifications
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		120	V
Collector-to-Emitter Voltage	V_{CES}		120	V
	V_{CEO}		80	V
Emitter-to-Base Voltage	V_{EBO}		6.5	V
Collector Current	I_C		2.5	A
Collector Current (Pulse)	I_{CP}		4	A

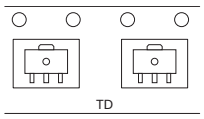
Continued on next page.

Package Dimensions
unit : mm (typ)
7007B-004

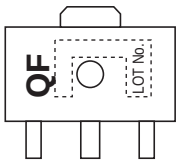


Product & Package Information
- Package : PCP
- JEITA, JEDEC : SC-62, SOT-89, TO-243
- Minimum Packing Quantity : 1,000 pcs./reel

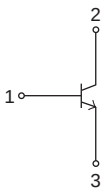
Packing Type: TD



Marking



Electrical Connection



Semiconductor Components Industries, LLC, 2013

Continued from preceding page.

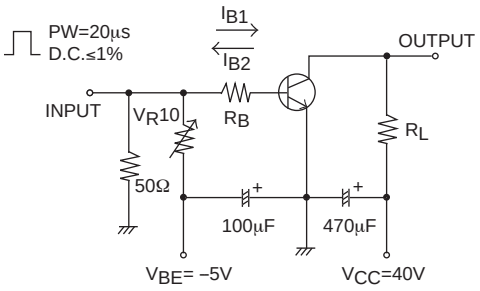
Parameter	Symbol	Conditions	Ratings	Unit
Base Current	I_B		500	mA
Collector Dissipation	P_C	When mounted on ceramic substrate (250mm^2×0.8mm)	1.3	W
		Tc=25°C	3.5	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

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.

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=70V, I_E=0A			1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0A			1	μA
DC Current Gain	h_{FE}	V_{CE}=5V, I_C=100mA	300		600	
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=500mA		350		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		14		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)1	I_C=1A, I_B=50mA		100	150	mV
	V_{CE}(sat)2	I_C=1A, I_B=100mA		90	135	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=1A, I_B=100mA		0.9	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0A	120			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C=100μA, R_{BE}=0Ω	120			V
	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	80			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0A	6.5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		40		ns
Storage Time	t_{stg}			920		ns
Fall Time	t_f			32		ns

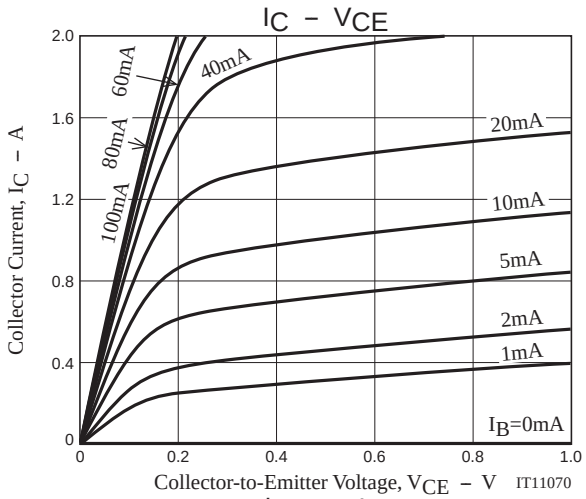
Switching Time Test Circuit

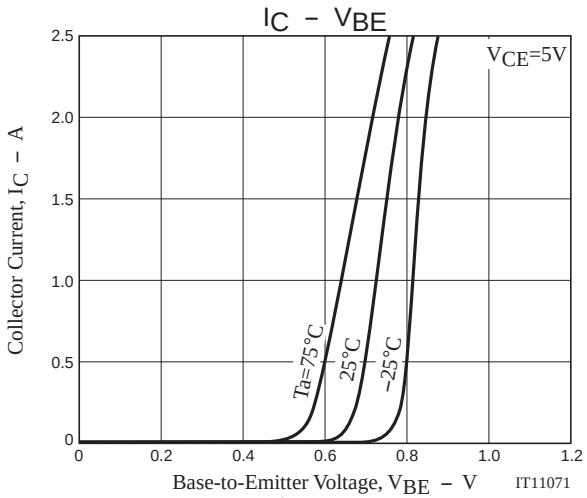


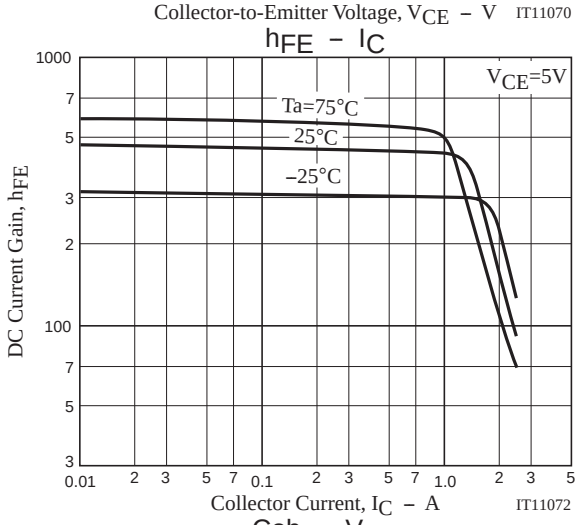
I_C=10I_{B1}= −10I_{B2}=0.5A

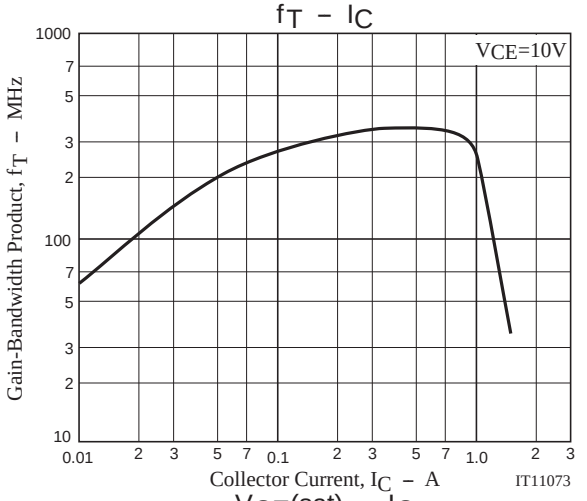
Ordering Information

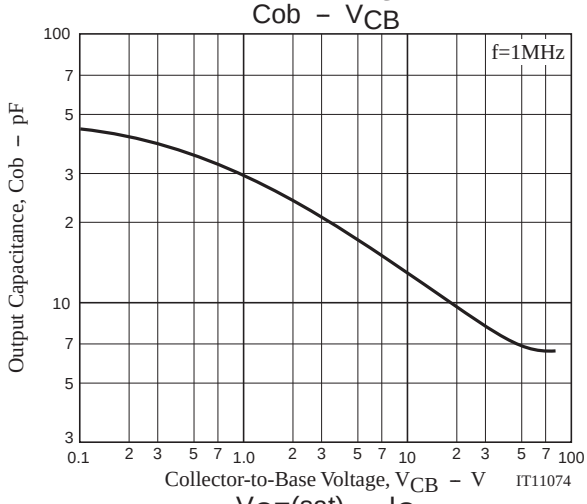
Device	Package	Shipping	memo
2SC6095-TD-E	PCP	1,000pcs./reel	Pb Free

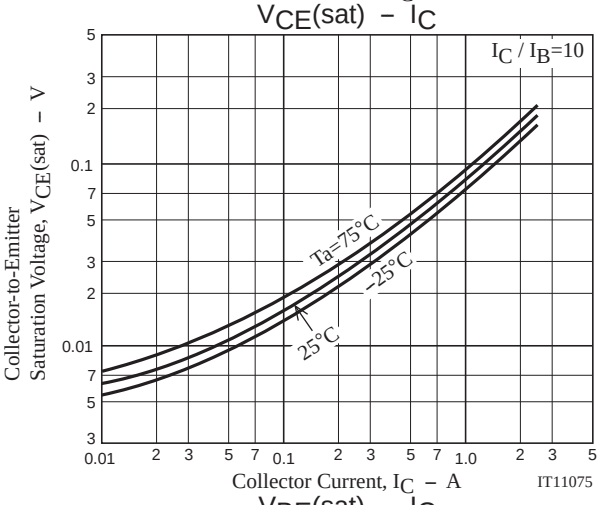

IC – VCE
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT11070
100mA
80mA
60mA
40mA
20mA
10mA
5mA
2mA
1mA
IB=0mA

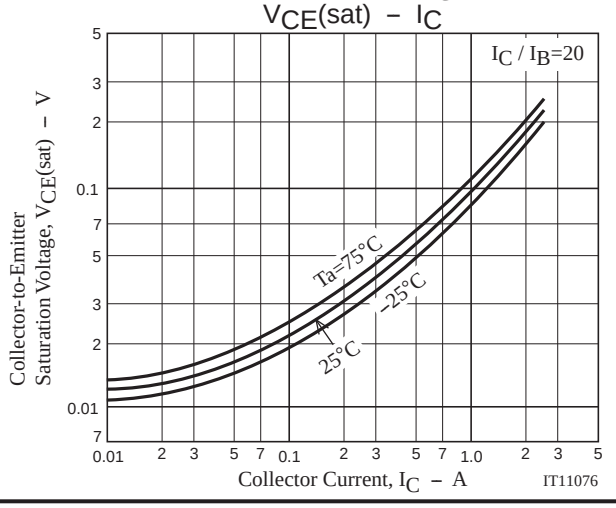

IC – VBE
Collector Current, IC – A
Base-to-Emitter Voltage, VBE – V
IT11071
VCE=5V
Ta=75°C
25°C
–25°C

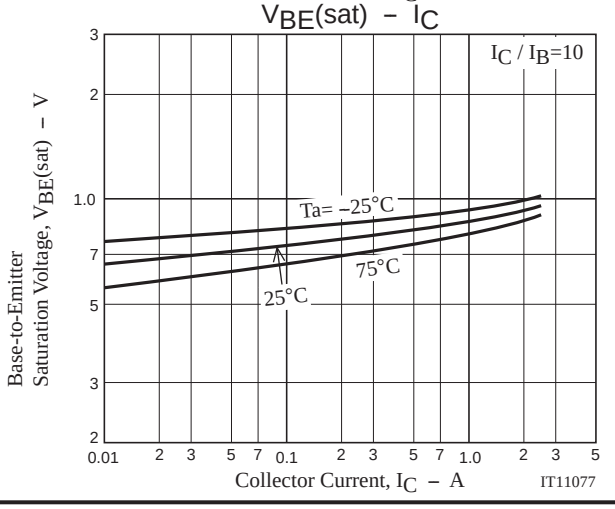

hFE – IC
DC Current Gain, hFE
Collector Current, IC – A
IT11072
VCE=5V
Ta=75°C
25°C
–25°C

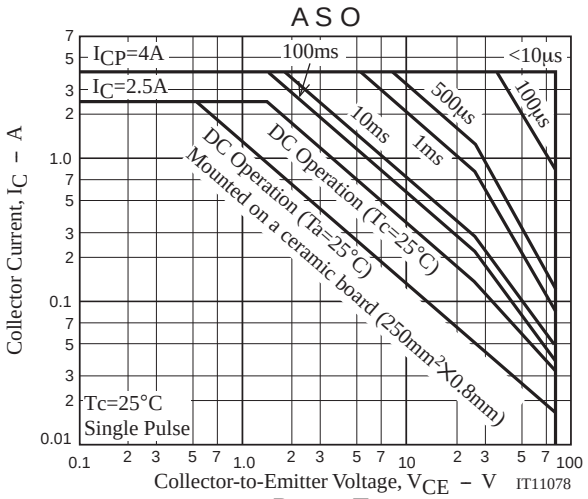

fT – IC
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – A
IT11073
VCE=10V

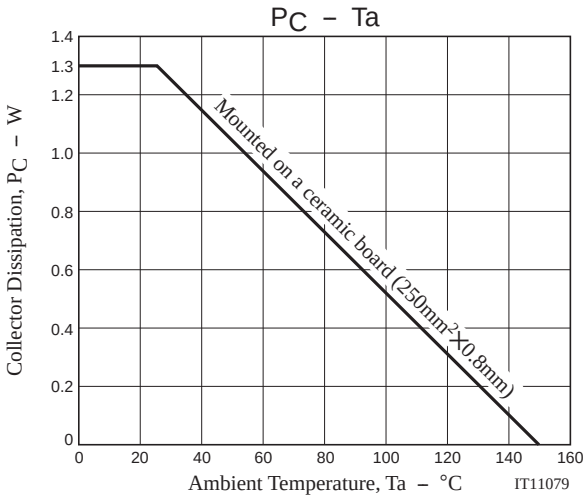

Cob – VCB
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT11074
f=1MHz

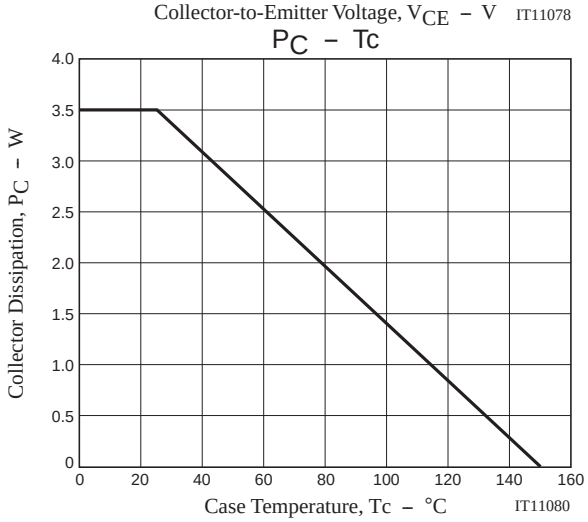

VCE(sat) – IC
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT11075
IC / IB=10
Ta=75°C
–25°C
25°C


VCE(sat) – IC
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT11076
IC / IB=20
Ta=75°C
–25°C
25°C


VBE(sat) – IC
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
IT11077
IC / IB=10
Ta= –25°C
75°C
25°C


ASO
ICP=4A
IC=2.5A
100ms
<10µs
10ms
1ms
500µs
100µs
DC Operation (Ta=25°C)
DC Operation (Tc=25°C)
Mounted on a ceramic board (250mm²×0.8mm)
Tc=25°C
Single Pulse
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT11078


PC – Ta
Mounted on a ceramic board (250mm²×0.8mm)
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C
IT11079


PC – Tc
Collector Dissipation, PC – W
Case Temperature, Tc – °C
IT11080

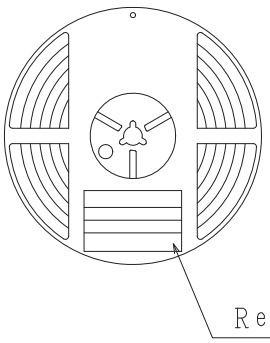
Embossed Taping Specification

2SC6095-TD-E

1. Packing Format

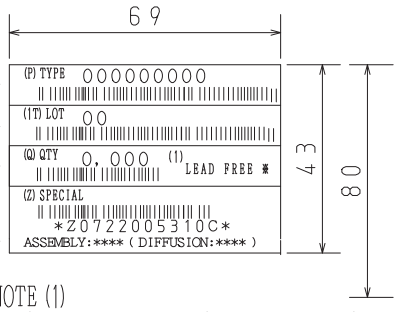
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
PCP	PCP	1,000	4,000	24,000	4 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Packing method



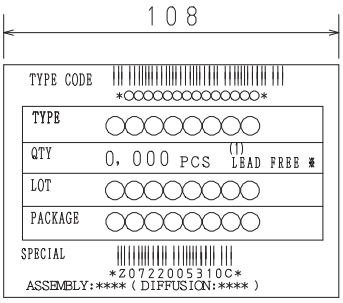
Reel label

Reel label, Inner box label (unit:mm)



Outer box label

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

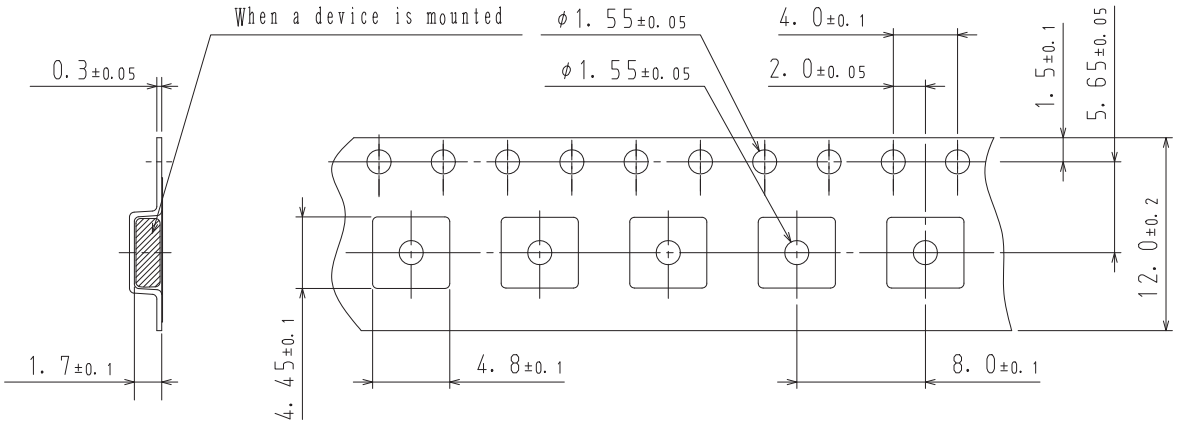


NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

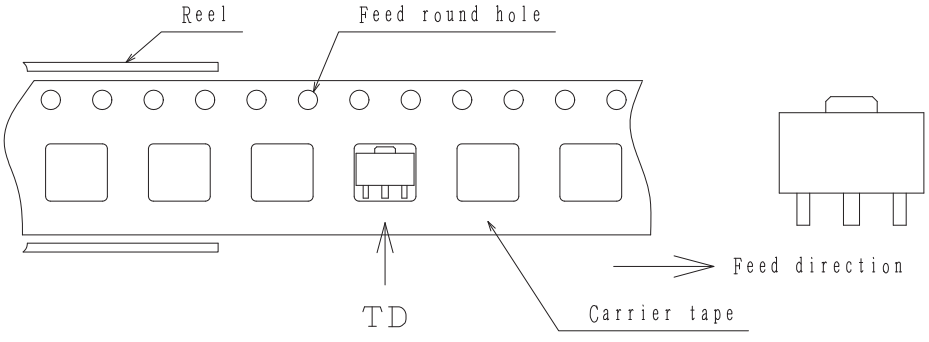
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



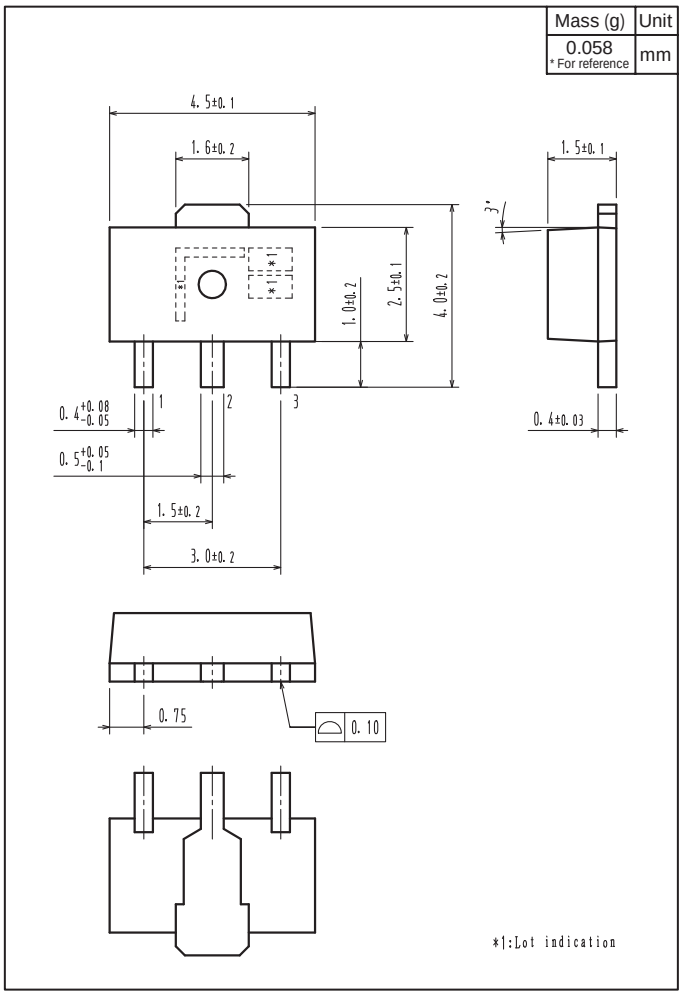
2-2. Device placement direction



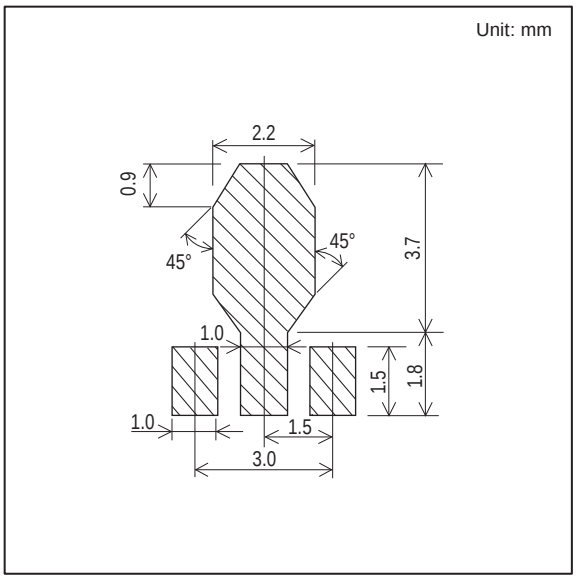
Those with pin 1 index on the feed hole side·····TD

Outline Drawing

2SC6095-TD-E



Land Pattern Example



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