



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

CPH3116 / CPH3216 — PNP / NPN Epitaxial Planar Silicon Transistor DC / DC Converter Applications

Applications

- Relay drivers, lamp drivers, motor drivers, flash

Features

- Adoption of MBIT processes
- Large current capacity
- Low collector-to-emitter saturation voltage
- High-speed switching
- Ultrasmall package facilitates miniaturization in end products (mounting height : 0.9mm)
- High allowable power dissipation

Specifications () : CPH3116

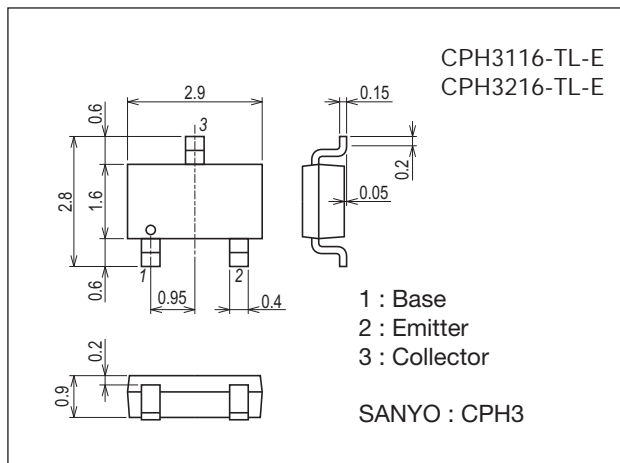
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		(-50)80	V
Collector-to-Emitter Voltage	VCES		(-50)80	V
Emitter-to-Base Voltage	VCEO		(-50)	V
Emitter-to-Base Voltage	VEBO		(-5)	V
Collector Current	IC		(-1.0)	A
Collector Current (Pulse)	ICP		(-3)	A
Base Current	IB		(-200)	mA
Collector Dissipation	PC	When mounted on ceramic substrate (600mm ² ×0.8mm)	0.9	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Package Dimensions

unit : mm (typ)

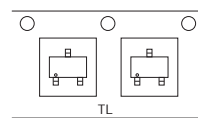
7015A-003



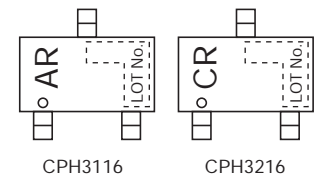
Product & Package Information

- Package : CPH3
- JEITA, JEDEC : SC-59, TO-236, SOT-23
- Minimum Packing Quantity : 3,000 pcs./reel

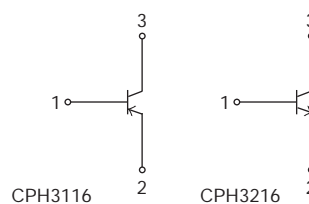
Packing Type: TL



Marking



Electrical Connection



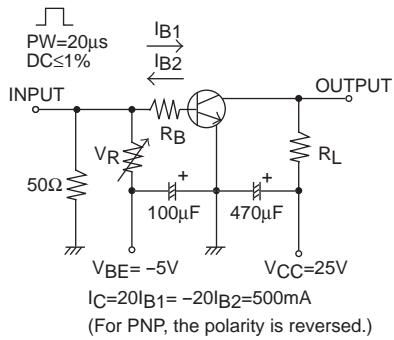
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<http://www.sanyosemi.com/en/network/>

Electrical Characteristics at Ta=25°C

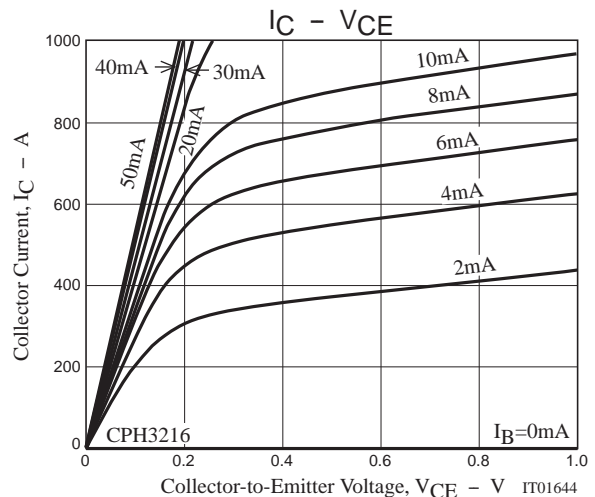
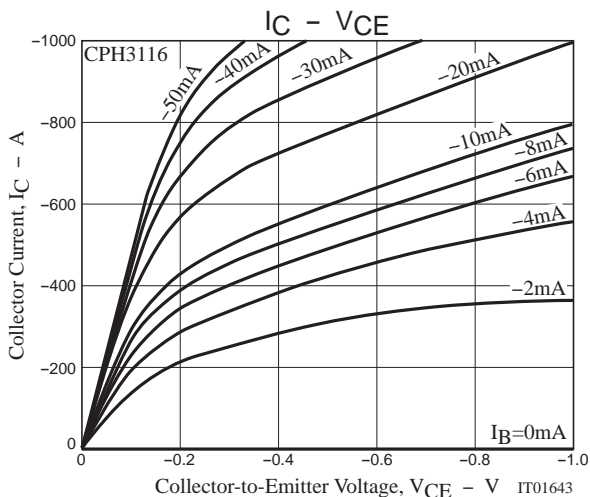
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =(-)40V, I _E =0A			(-)0.1	μA
Emitter Cutoff Current	IEBO	V _{EB} =(-)4V, I _C =0A			(-)0.1	μA
DC Current Gain	h _{FE}	V _{CE} =(-)2V, I _C =(-)100mA	200		560	
Gain-Bandwidth Product	f _T	V _{CE} =(-)10V, I _C =(-)300mA		420		MHz
Output Capacitance	C _{ob}	V _{CB} =(-)10V, f=1MHz		(9)6		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)1}	I _C =(-)500mA, I _B =(-)10mA		(-280)130	(-430)190	mV
Collector-to-Emitter Saturation Voltage	V _{CE(sat)2}	I _C =(-)300mA, I _B =(-)6mA		(-145)90	(-220)135	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =(-)500mA, I _B =(-)10mA		(-)0.81	(-)1.2	V
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}	I _C =(-)10μA, I _E =0A	(-50)80			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CES}	I _C =(-)100μA, R _{BE} =0Ω	(-50)80			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	(-)5			V
Turn-On Time	t _{on}	See specified Test Circuit.		35		ns
Storage Time	t _{stg}			(170)330		ns
Fall Time	t _f			(30)40		ns

Switching Time Test Circuit

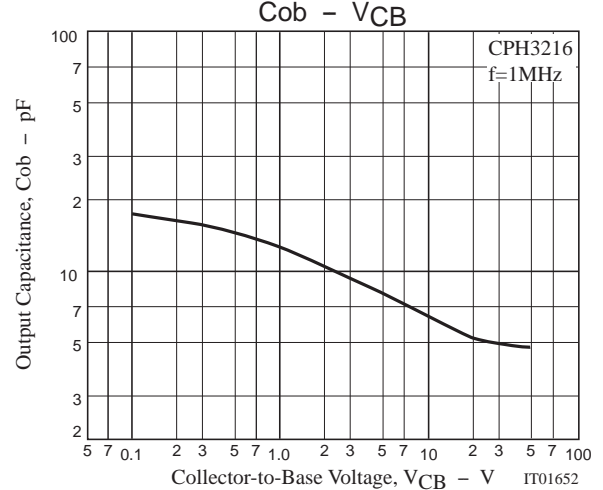
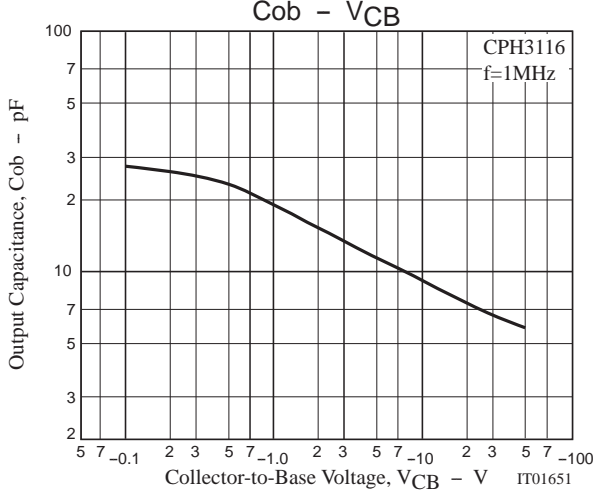
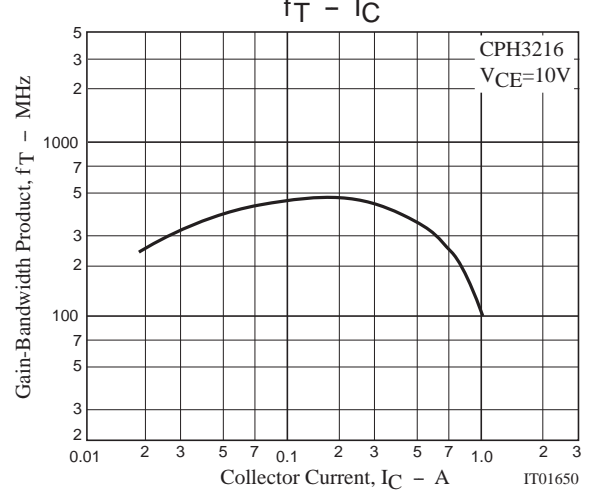
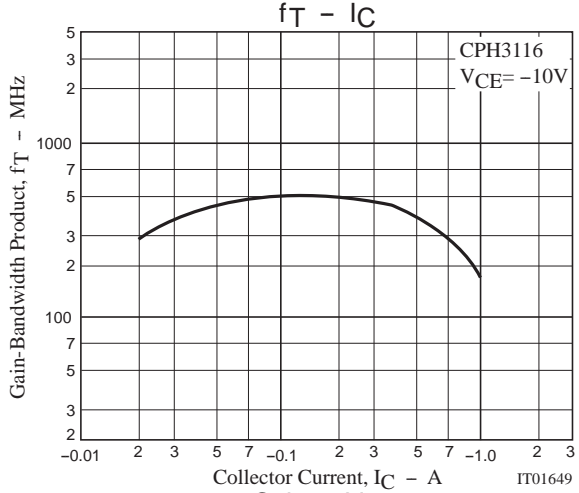
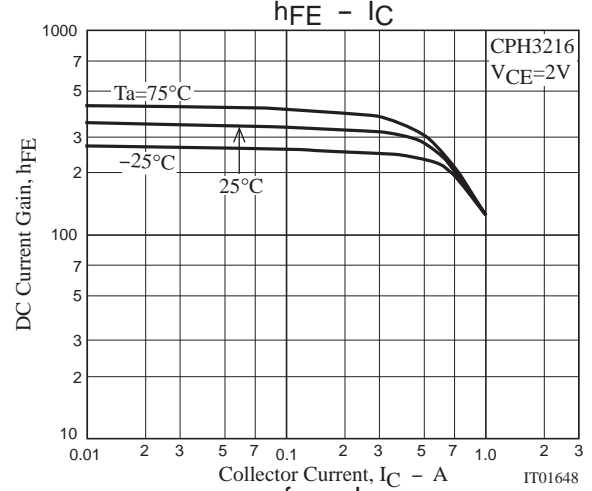
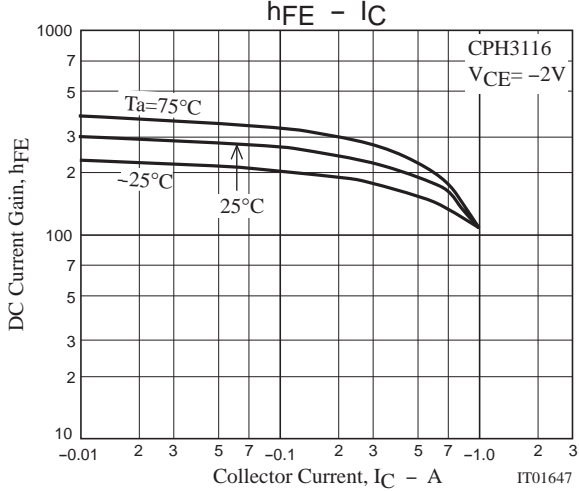
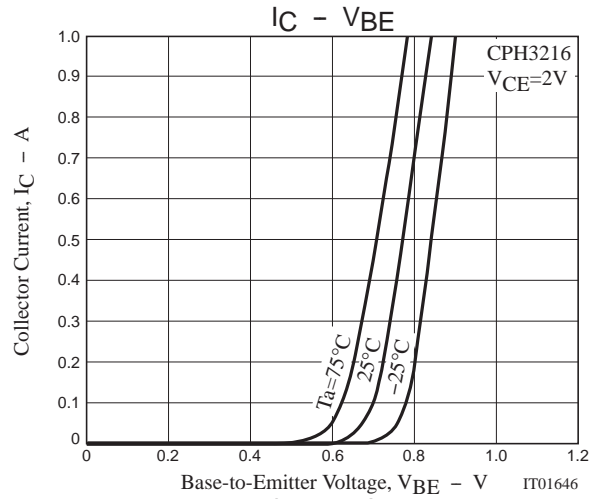
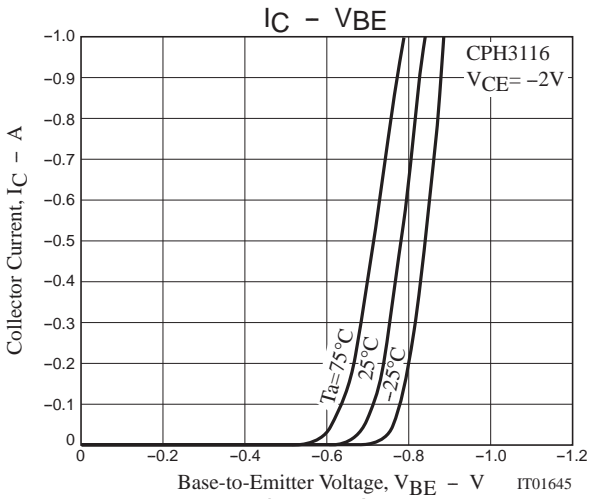


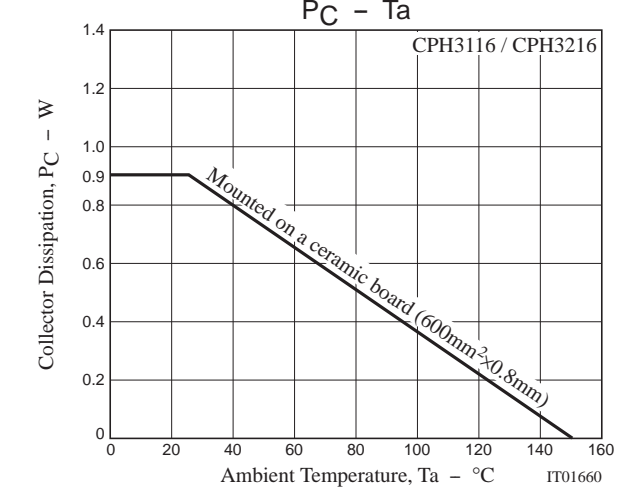
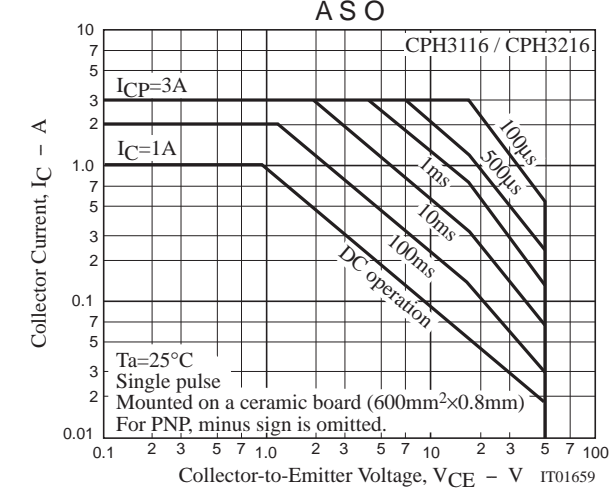
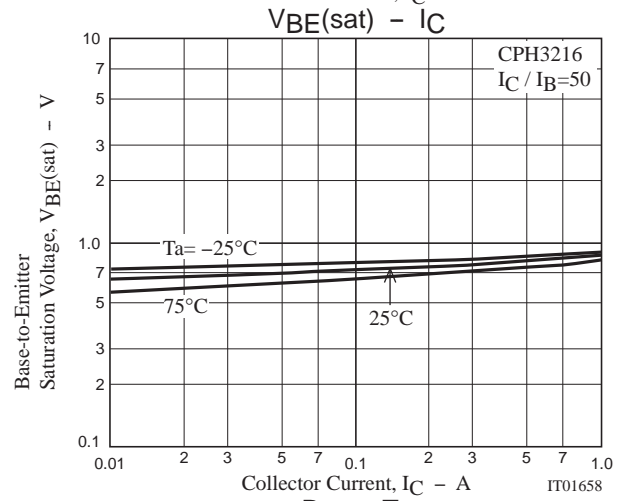
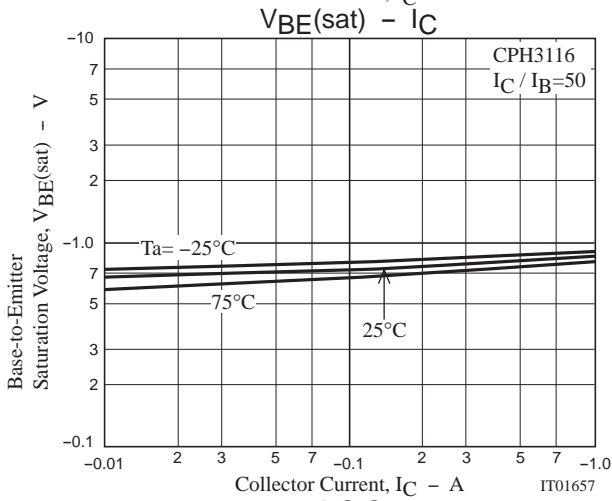
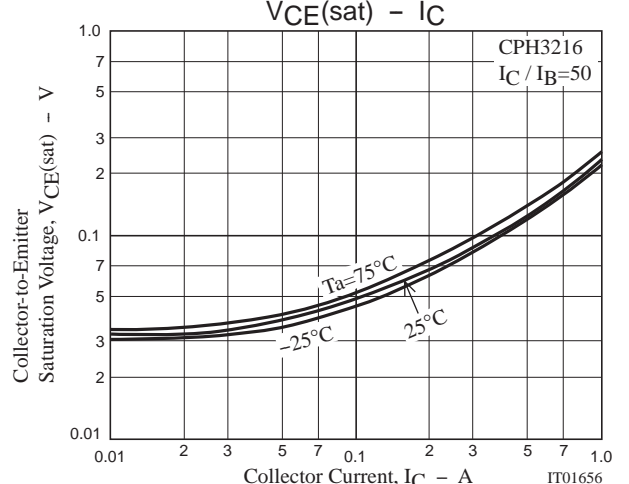
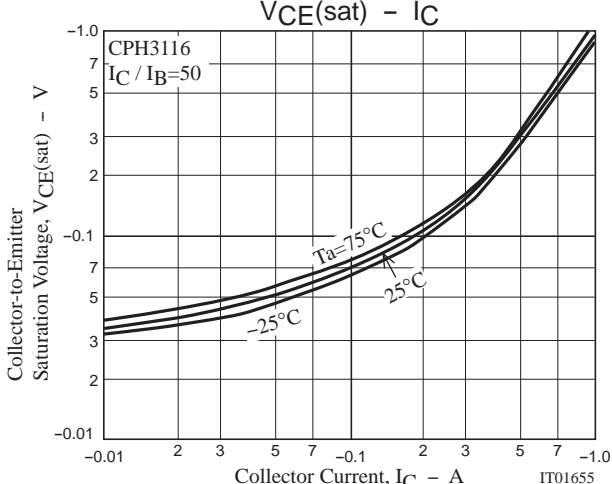
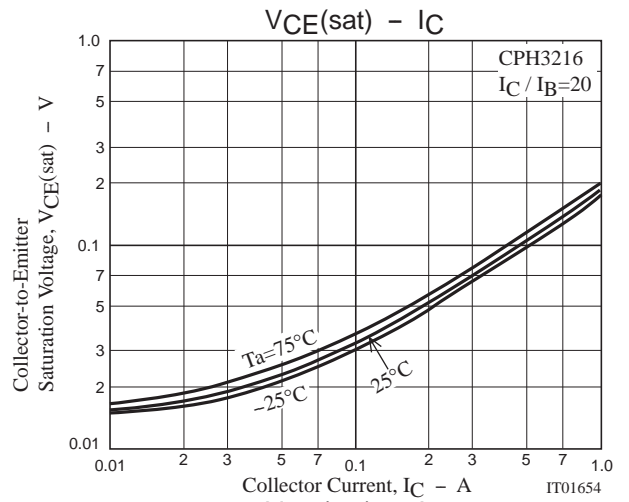
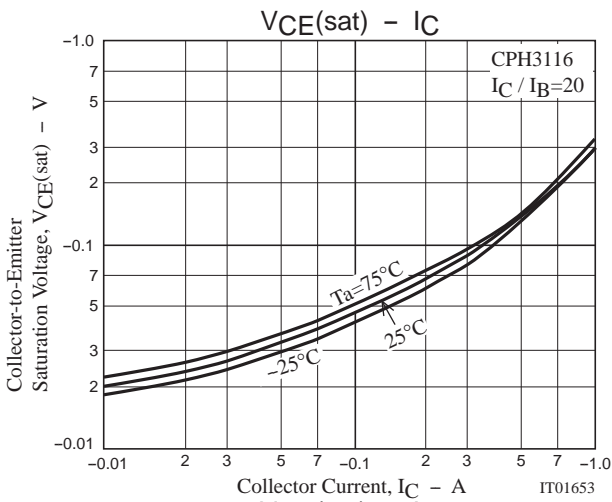
Ordering Information

Device	Package	Shipping	memo
CPH3116-TL-E	CPH3	3,000pcs./reel	Pb Free
CPH3216-TL-E	CPH3	3,000pcs./reel	Pb Free



CPH3116 / CPH3216





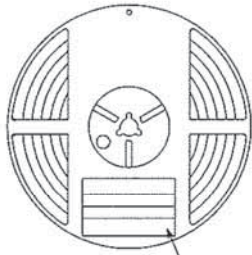
Embossed Taping Specification
CPH3116-TL-E, CPH3216-TL-E

1. Packing Format

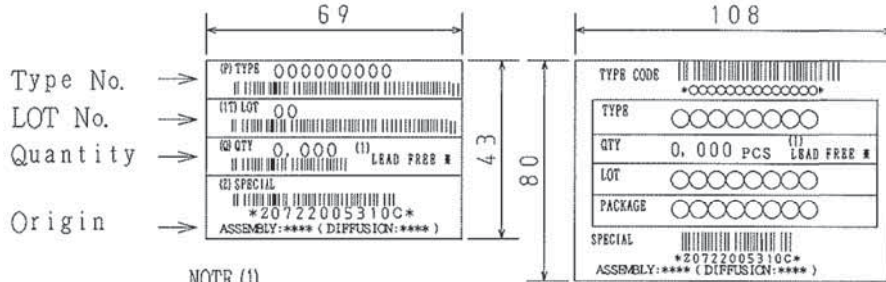
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
CPH3	CPH3	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

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.

Packing method



Reel label



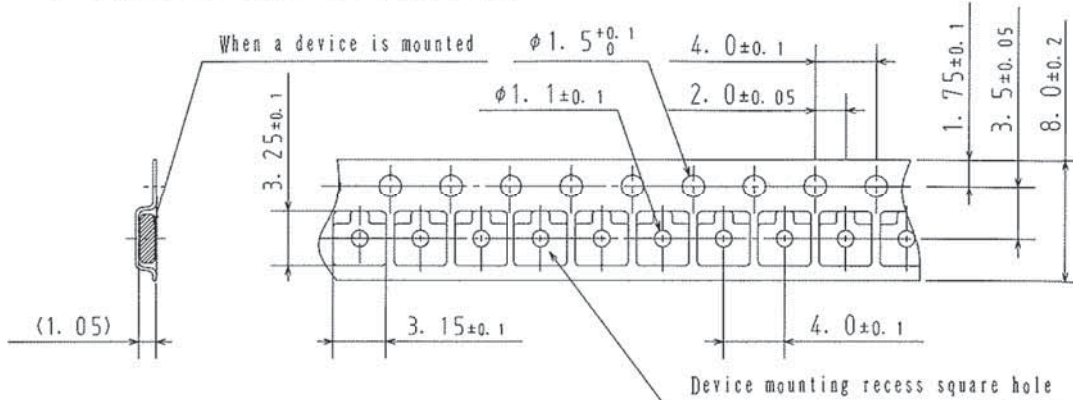
NOTE (1)

The LEAD FREE # description shows that the surface treatment of the terminal is lead free.

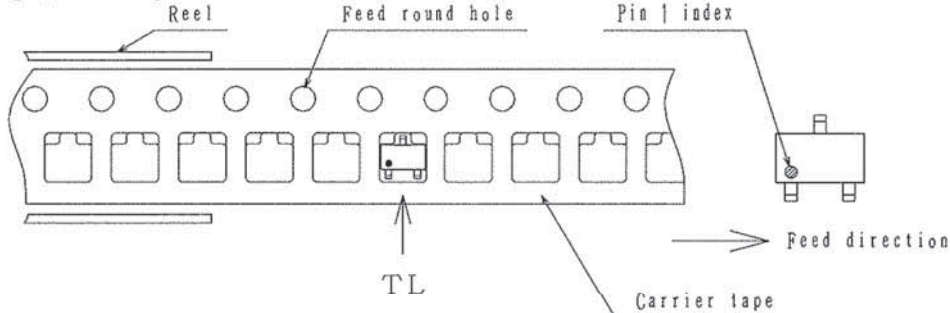
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction



Those with one electrode terminal on the feed hole side.....TL

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