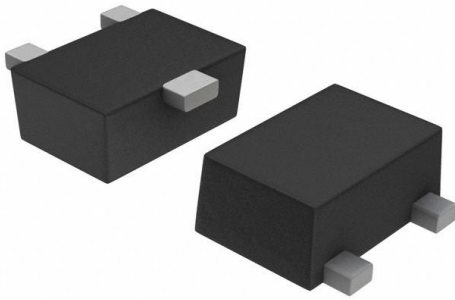


50C02SS-TL-E Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	50C02SS-TL-E-DG
Manufacturer	onsemi
Manufacturer Product Number	50C02SS-TL-E
Description	TRANS NPN 50V 0.4A 3SSFP
Detailed Description	Bipolar (BJT) Transistor NPN 50 V 400 mA 500MHz 200 mW Surface Mount 3-SSFP



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.

Purchase and inquiry

Manufacturer Product Number:

50C02SS-TL-E

Series:

-

Transistor Type:

NPN

Voltage - Collector Emitter Breakdown (Max):

50 V

Current - Collector Cutoff (Max):

100nA (ICBO)

Power - Max:

200 mW

Operating Temperature:

150°C (TJ)

Package / Case:

SC-81

Base Product Number:

50C02

Manufacturer:

onsemi

Product Status:

Obsolete

Current - Collector (Ic) (Max):

400 mA

Vce Saturation (Max) @ Ib, Ic:

100mV @ 10mA, 100mA

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

300 @ 10mA, 2V

Frequency - Transition:

500MHz

Mounting Type:

Surface Mount

Supplier Device Package:

3-SSFP

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0075

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

Ordering number : EN7519A



50C02SS

Bipolar Transistor 50V, 0.4A, Low $V_{CE(sat)}$ NPN Single SSFP

ON Semiconductor®

<http://onsemi.com>

Applications

- Low-frequency Amplifier, high-speed switching small motor drive, muting circuit

Features

- Large current capacity
- Low collector-to-emitter saturation voltage (resistance) : $R_{CE(sat)}$ typ=175m Ω [$I_C=0.5A$, $I_B=50mA$]
- Ultrasmall package facilitates miniaturization in end products
- Small ON-resistance (R_{on})

Specifications

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

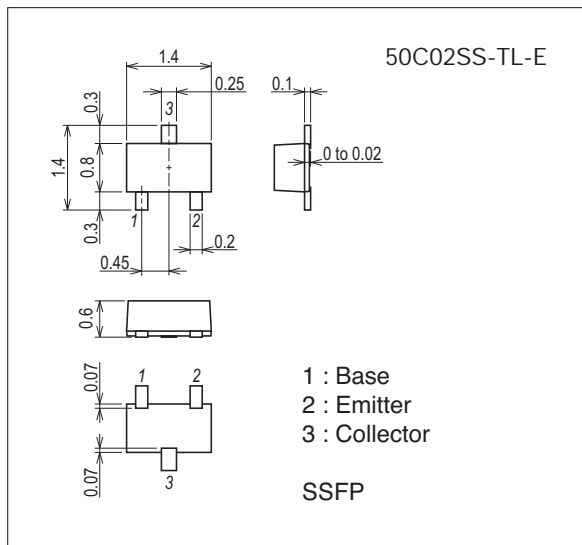
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		60	V
Collector-to-Emitter Voltage	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		400	mA
Collector Current (Pulse)	I_{CP}		800	mA
Collector Dissipation	P_C	Mounted on a glass-epoxy board (20×30×1.6mm)	200	mW
Junction Temperature	T_j		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

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)

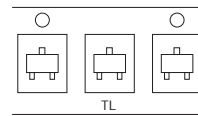
7029A-002



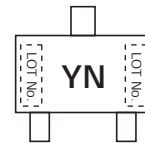
Product & Package Information

- Package : SSFP
- JEITA, JEDEC : SC-81
- Minimum Packing Quantity : 8,000 pcs./reel

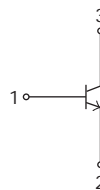
Packing Type: TL



Marking



Electrical Connection

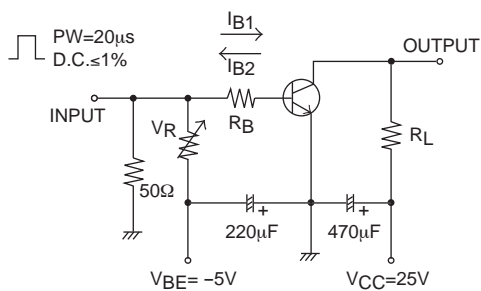


50C02SS

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=40\text{V}, I_E=0\text{A}$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0\text{A}$			100	nA
DC Current Gain	h_{FE}	$V_{CE}=2\text{V}, I_C=10\text{mA}$	300		800	
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}$		500		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		2.8		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100\text{mA}, I_B=10\text{mA}$		50	100	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=100\text{mA}, I_B=10\text{mA}$		0.9	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0\text{A}$	60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0\text{A}$	5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		30		ns
Storage Time	t_{stg}			340		ns
Fall Time	t_f			55		ns

Switching Time Test Circuit

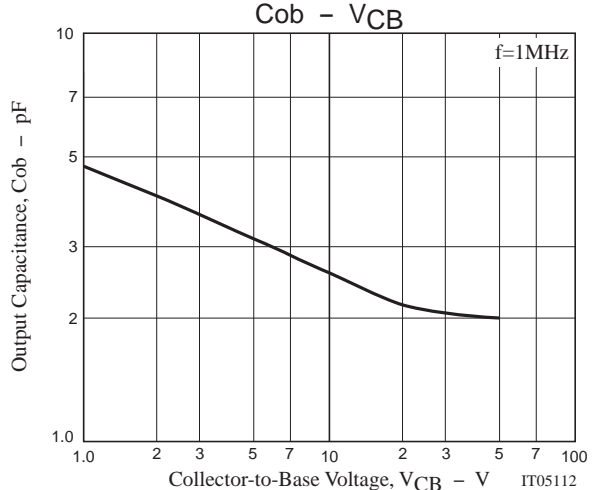
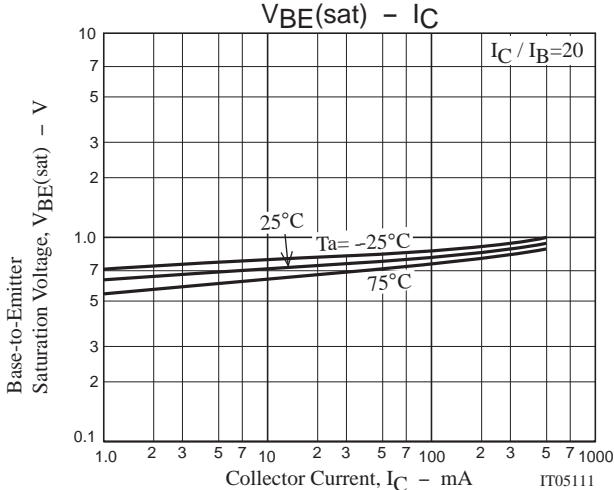
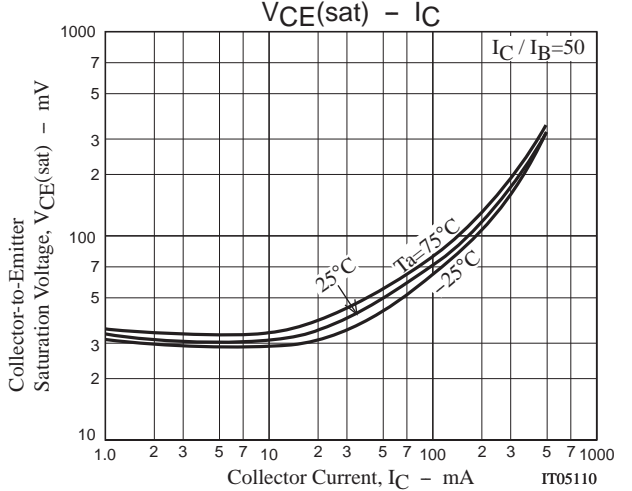
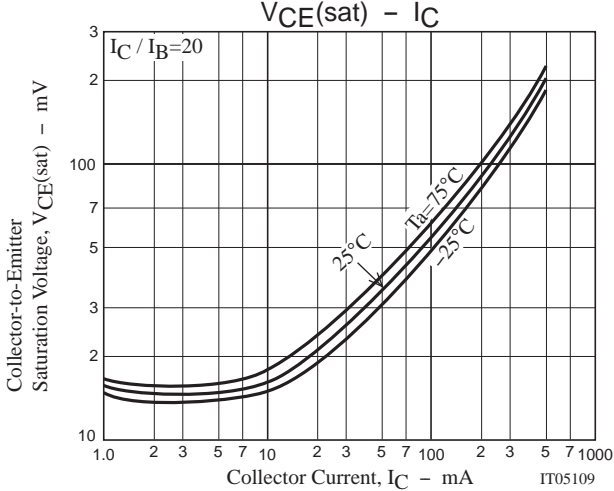
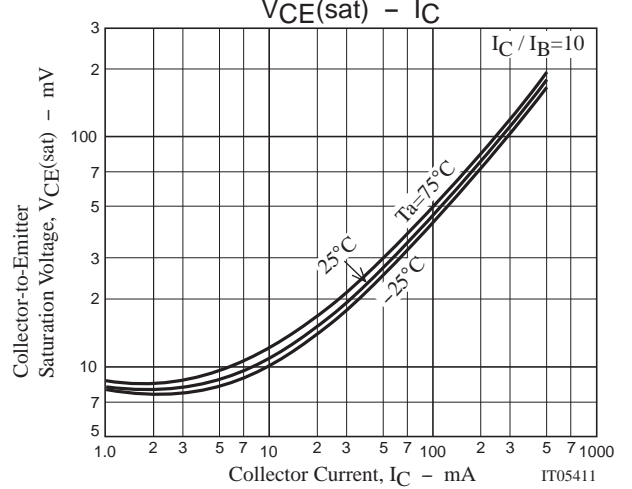
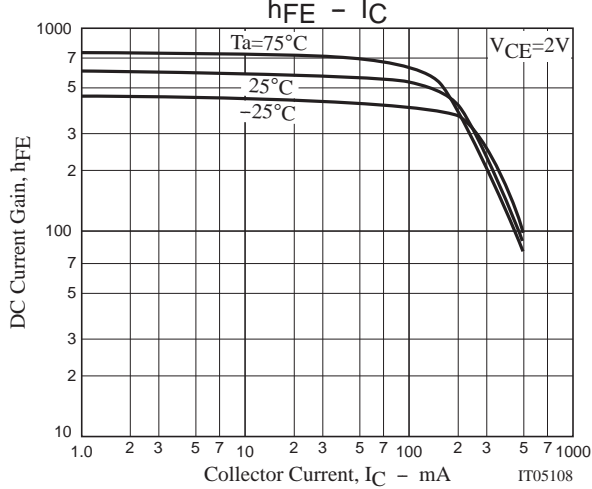
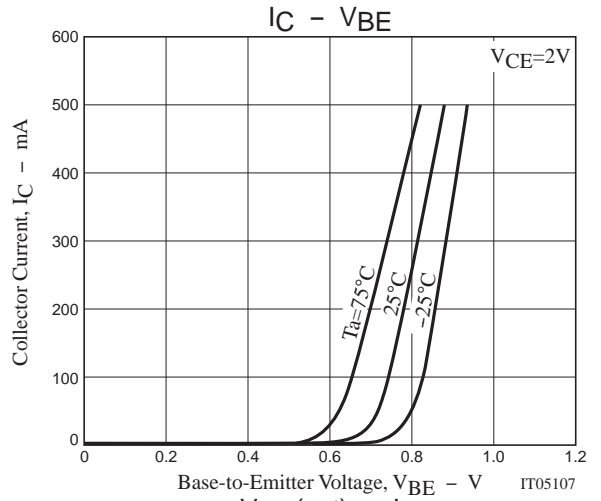
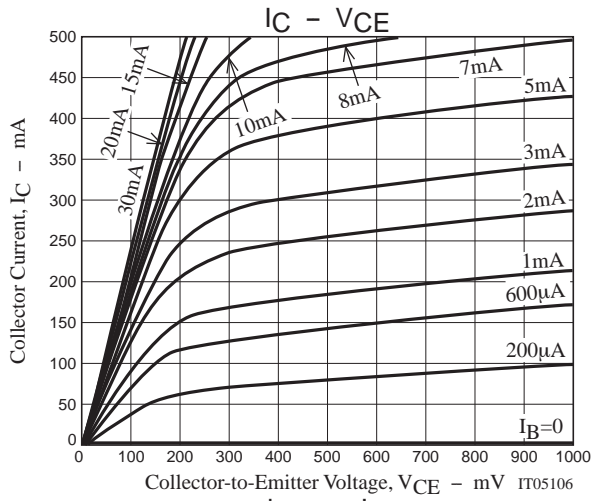


$$I_C=20I_{B1} = -20I_{B2}=200\text{mA}$$

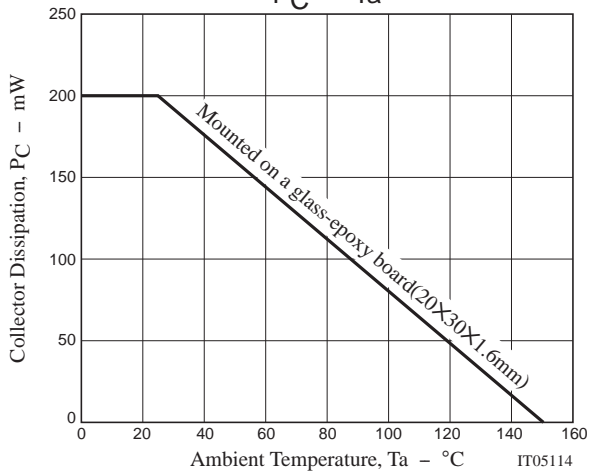
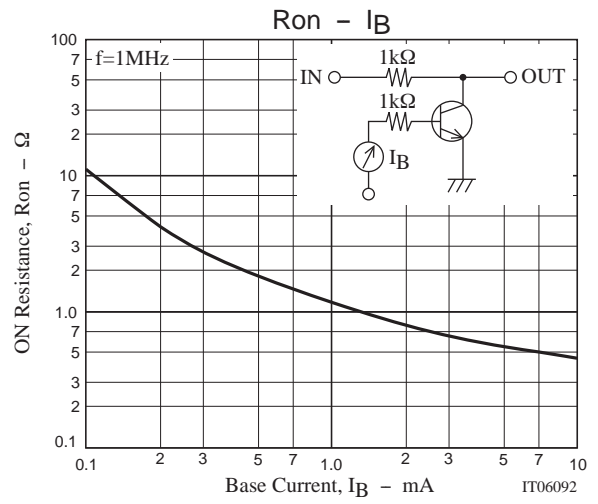
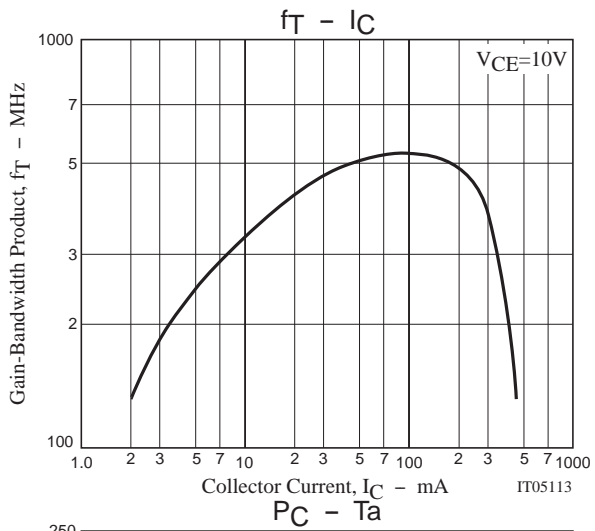
Ordering Information

Device	Package	Shipping	memo
50C02SS-TL-E	SSFP	8,000pcs./reel	Pb Free

50C02SS



50C02SS



50C02SS

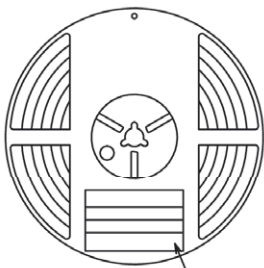
Embossed Taping Specification

50C02SS-TL-E

1. Packing Format

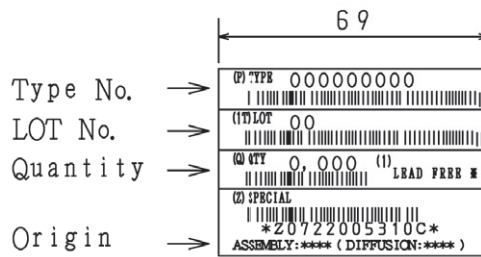
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
SSFP	SSFP	8,000	40,000	240,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Packing method



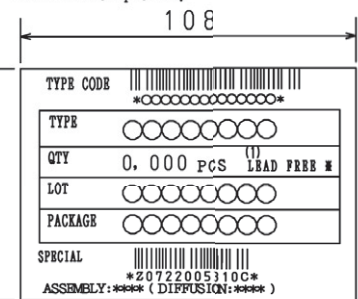
Reel label

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.



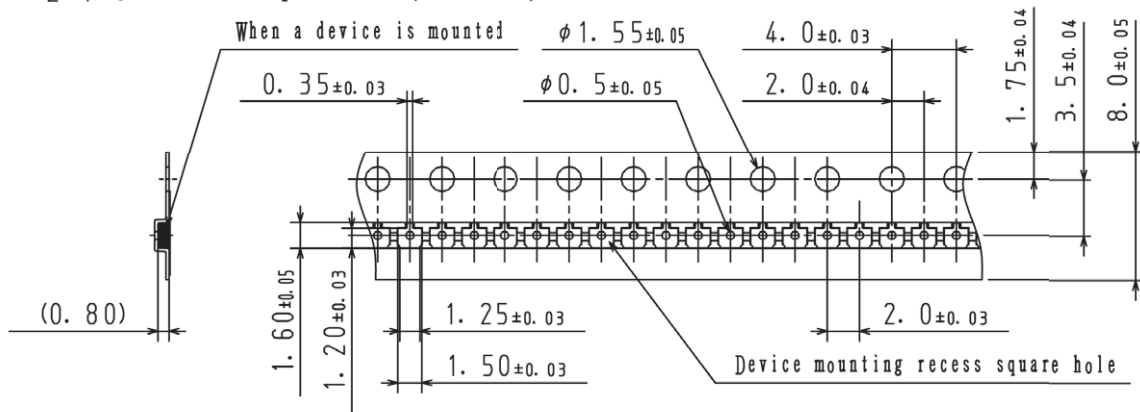
NOTE (1)

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

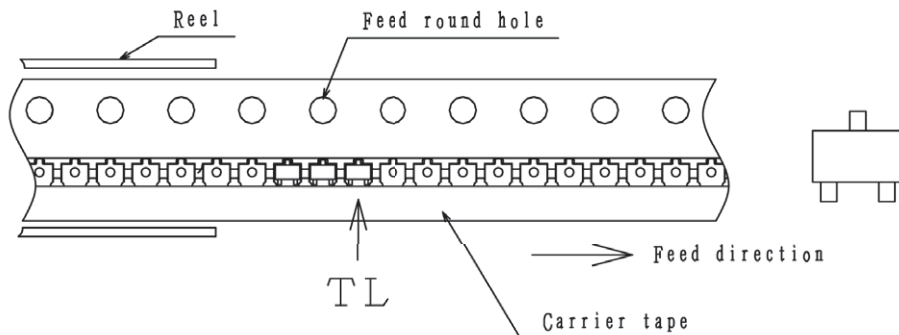
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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



2-2. Device placement direction

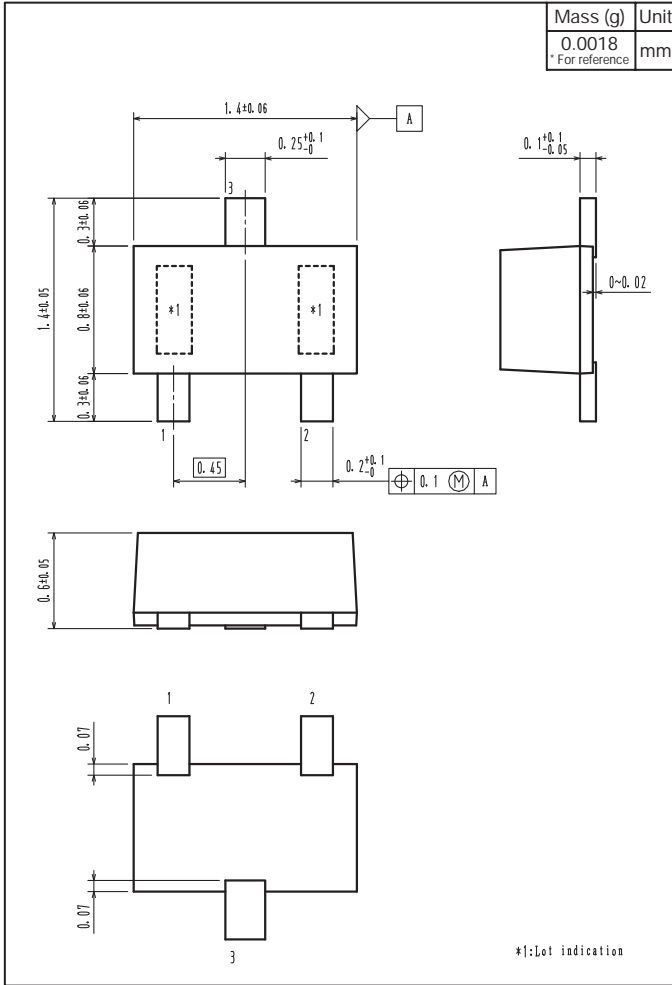


Those with pin 1 index on the feed hole side.....TL

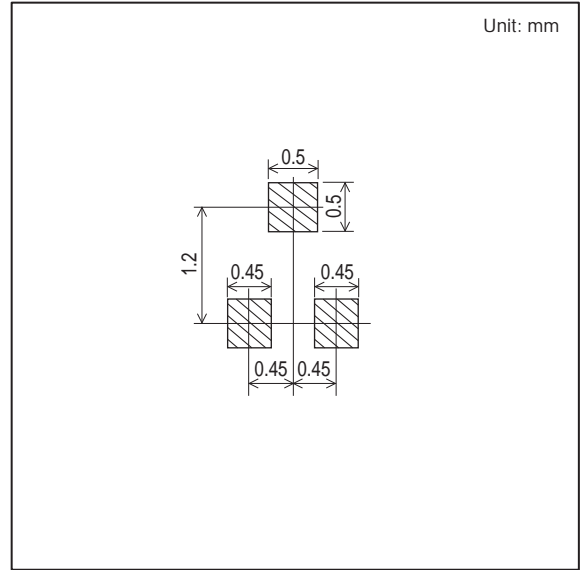
50C02SS

Outline Drawing

50C02SS-TL-E



Land Pattern Example



50C02SS

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