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PCP1203

Bipolar Transistor 30V, 1.5A, Low VCE(sat), NPN Single PCP

Applications

- DC / DC converters, relay drivers, lamp drivers, motor drivers, Inverters, IGBT gate drivers

Features

- Adoption of FBET, MBIT processes
- Low collector-to-emitter saturation voltage
- High allowable power dissipation
- Large current capacity
- High speed switching
- Halogen free compliance

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		40	V
Collector-to-Emitter Voltage	VCEO		30	V
Emitter-to-Base Voltage	VEBO		5	V
Collector Current	IC		1.5	A
Collector Current (Pulse)	ICP		5	A

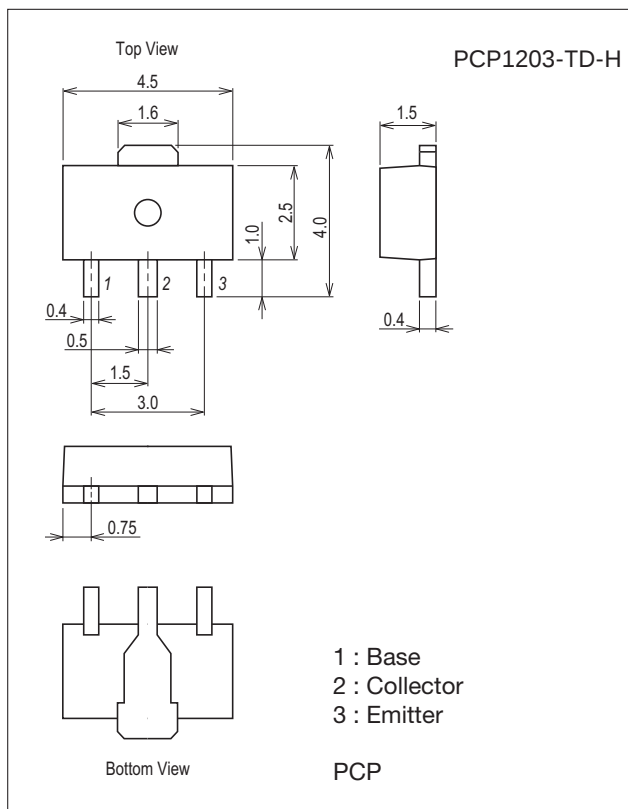
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Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)

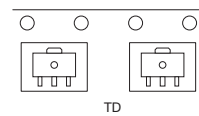
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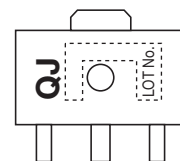
Product & Package Information

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

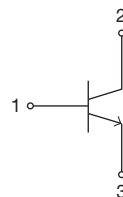
Packing Type: TD



Marking



Electrical Connection



PCP1203

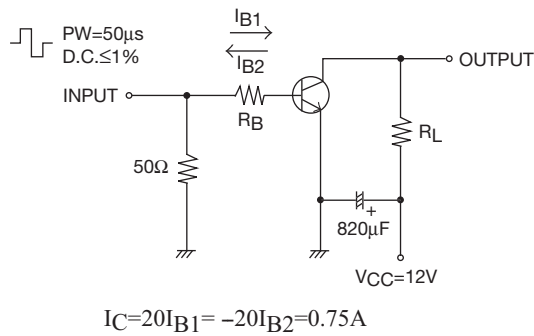
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Parameter	Symbol	Conditions	Ratings	Unit
Base Current	I_B		300	mA
Collector Dissipation	P_C	When mounted on ceramic substrate (450mm ² ×0.8mm) $T_c=25^{\circ}\text{C}$	1.3 3.5	W
Junction Temperature	T_j		150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^{\circ}\text{C}$

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

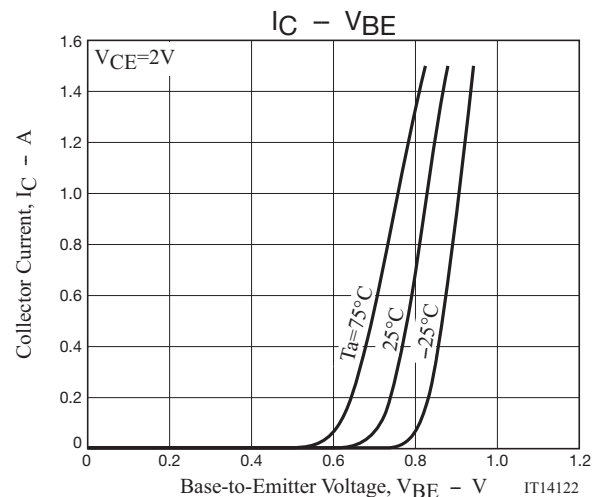
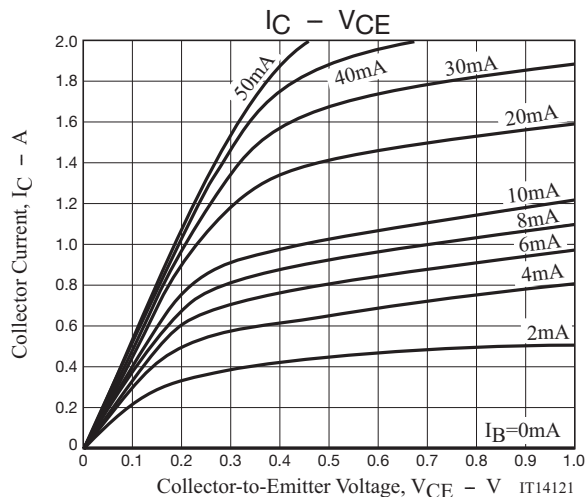
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=30\text{V}, I_E=0\text{A}$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0\text{A}$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=2\text{V}, I_C=100\text{mA}$	200		560	
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=300\text{mA}$		500		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		8		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.75\text{A}, I_B=15\text{mA}$		150	225	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=0.75\text{A}, I_B=15\text{mA}$		0.85	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0\text{A}$	40			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	30			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.		35		ns
Storage Time	t_{stg}			205		ns
Fall Time	t_f			30		ns

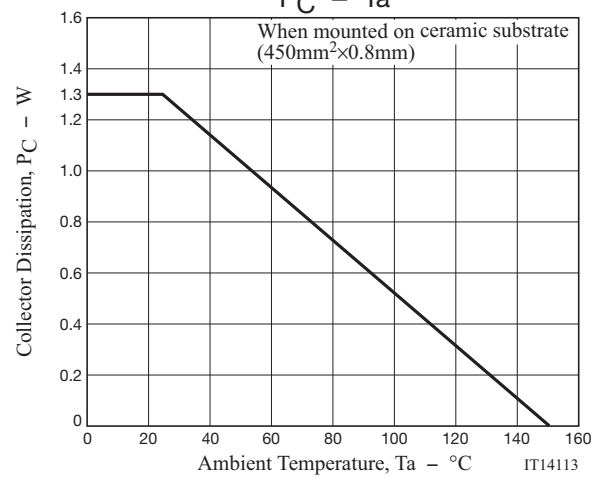
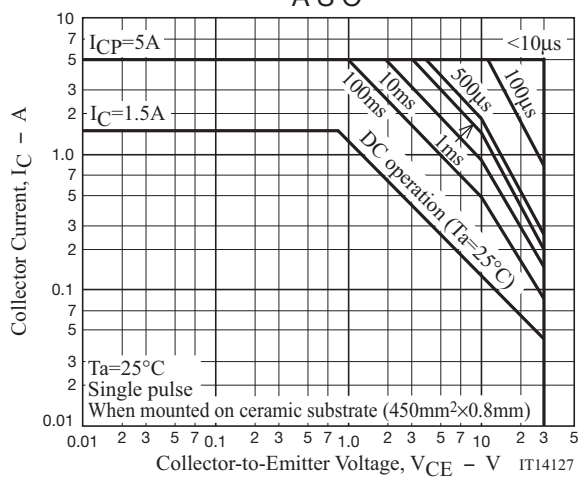
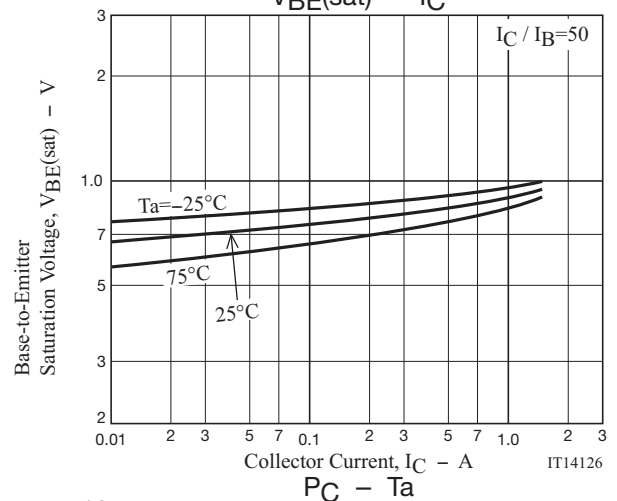
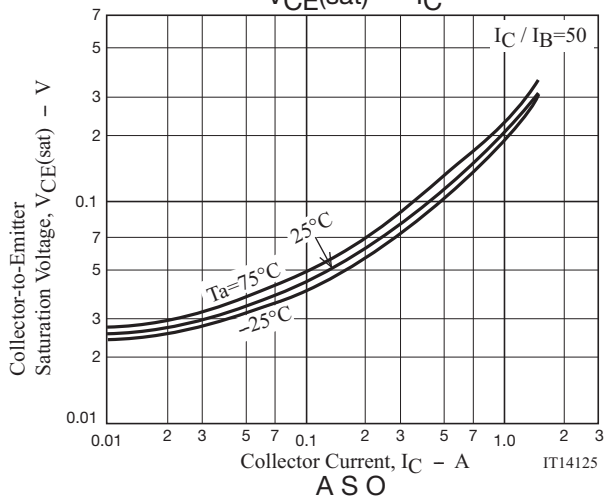
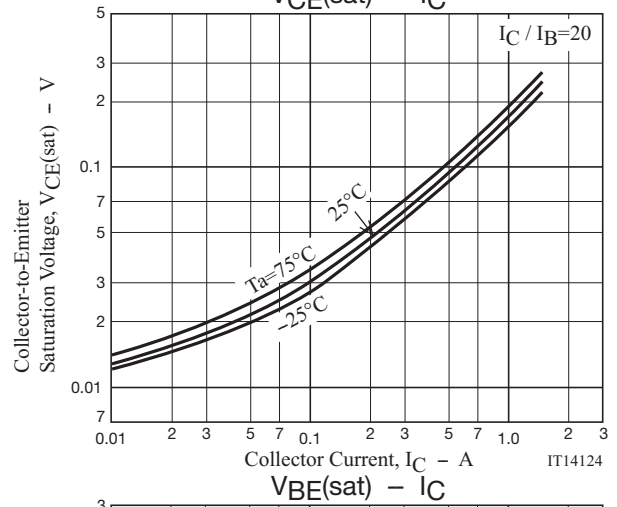
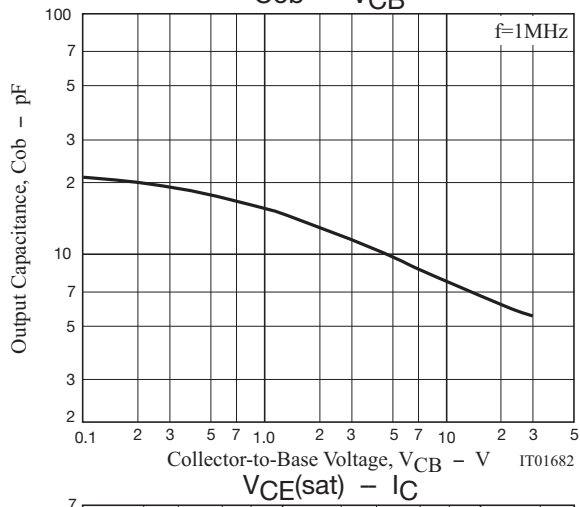
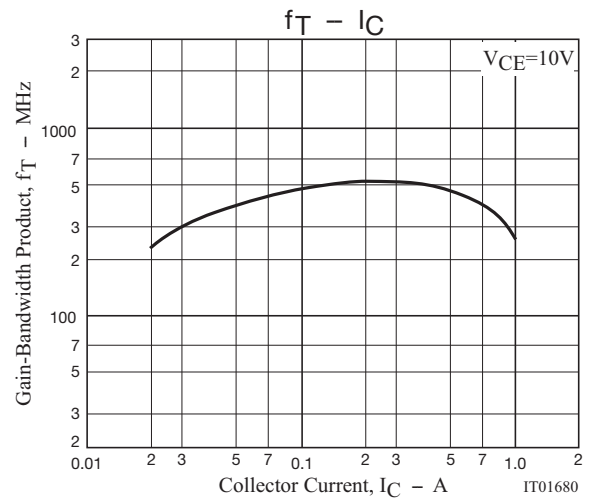
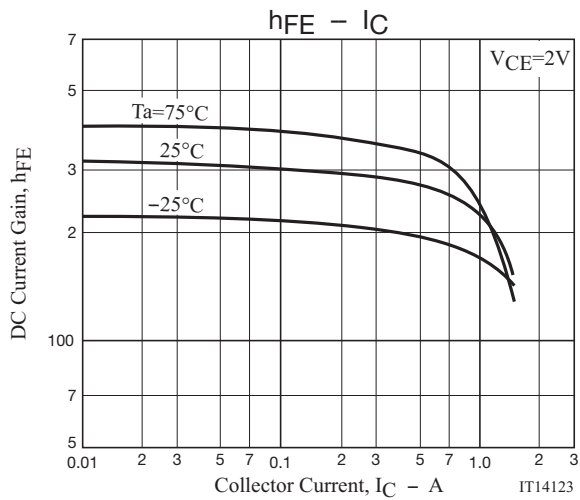
Switching Time Test Circuit

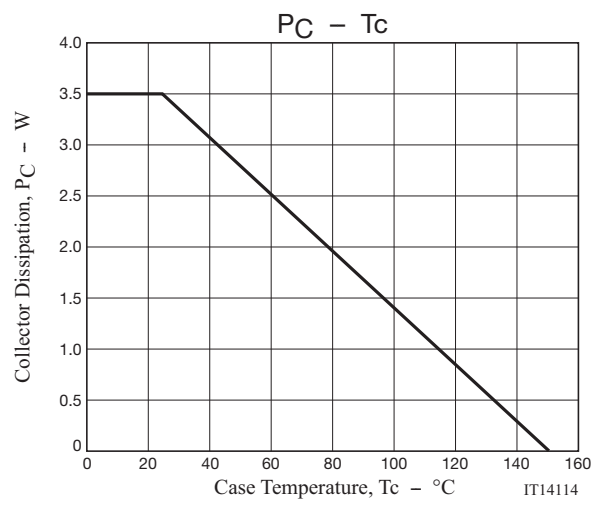


Ordering Information

Device	Package	Shipping	memo
PCP1203-TD-H	PCP	1,000pcs./reel	Pb Free and Halogen Free







Bag Packing Specification

PCP1203-TD-H

1. Packing Format

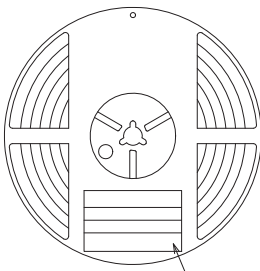
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
PCP	PCP	1,000	4,000	24,000	4 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

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

Type No. →
 LOT No. →
 Quantity →
 Origin →

(P) TYPE	000000000
(1) LOT	00
(Q) QTY	0,000 (1) LEAD FREE #
(Z) SPECIAL	*Z0722005310C* ASSEMBLY:**** (DIFFUSION:****)

TYPE CODE	
TYPE	
QTY	0,000 PCS (1) LEAD FREE #
LOT	
PACKAGE	
SPECIAL	 *Z0722005310C* ASSEMBLY:**** (DIFFUSION:****)

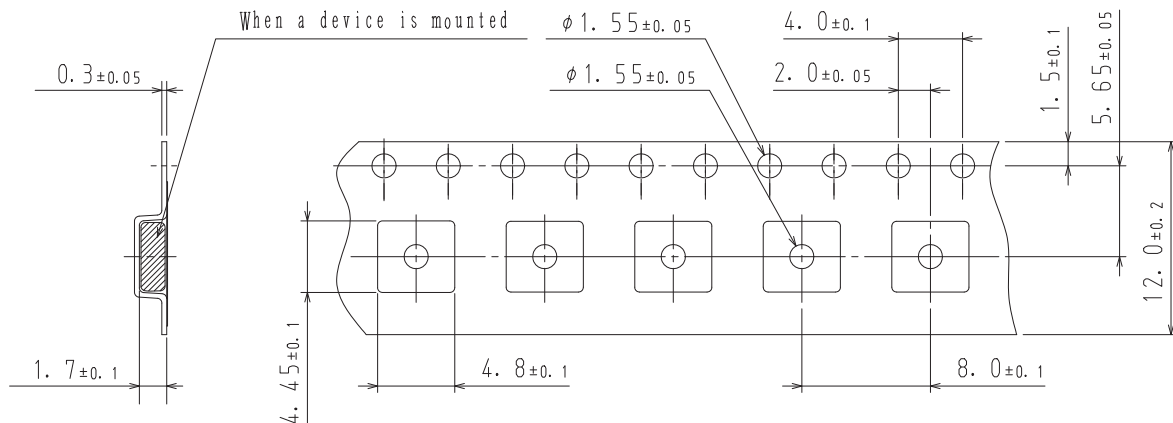
NOTE (1)

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

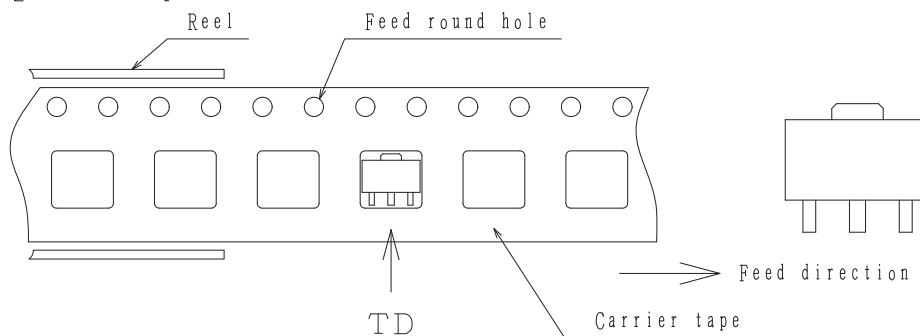
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

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

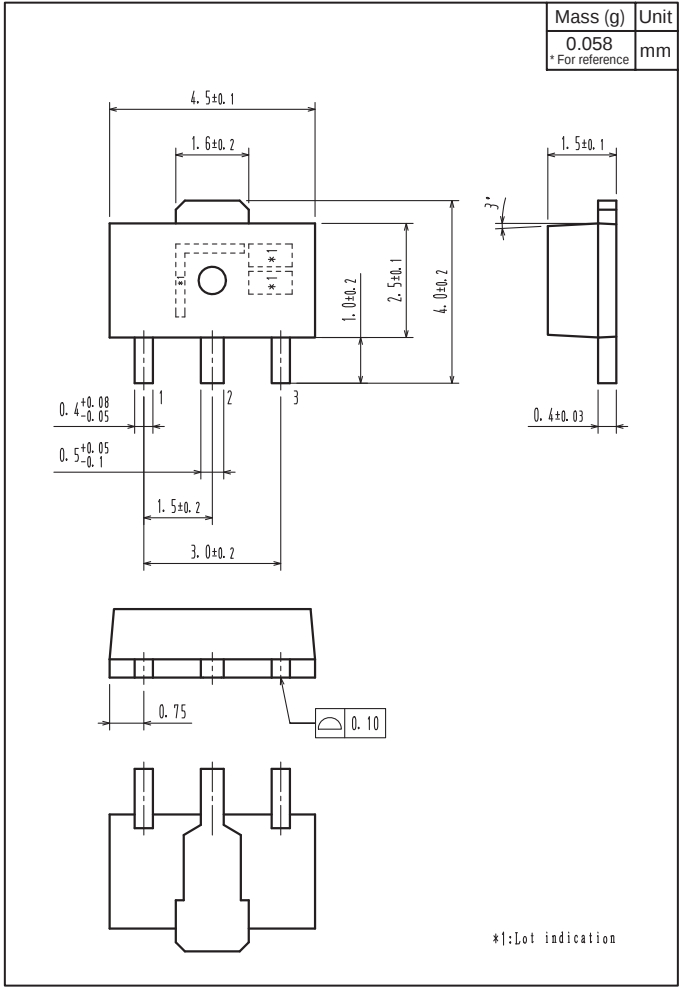


2-2. Device placement direction

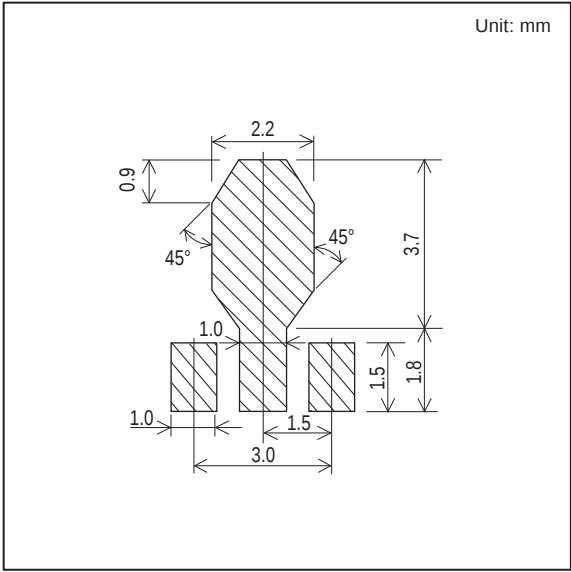


Those with pin 1 index on the feed hole side.....TD

Outline Drawing
PCP1203-TD-H



Land Pattern Example



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