

# SPECIFICATION

DEVICE NAME : BIPOLAR TRANSISTOR  
 TYPE NAME : ET 3 9 3 R  
 SPEC. No. :  
 DATE :

Fuji Electric Co.,Ltd.

This Specification is subject to change without notice.

	DATE	NAME	APPROVED	Fuji Electric Co.,Ltd.	
DRAWN				DWG.NO.	1/8
CHECKED					

Ratings and Characteristics of Fuji Power Transistor

ET393R

1. Outline Drawings T0-3PF
2. Absolute Maximum Ratings (Tj=25°C)

Item	Symbols	Maximum Ratings	Units
Collector-Base Voltage	$V_{CBO}$	150	V
Collector-Emitter Voltage	$V_{CEO}$	100	
Emitter-Base Voltage	$V_{EBO}$	6	
Collector Current (Continuous)	$I_C$	1.0	A
Base Current (Continuous)	$I_B$	1	
Collector Power Dissipation	$P_C$	80	W
Operating Temperature	$T_j$	+150	°C
Storage Temperature	$T_{stg}$	-55 ~ +150	

3. Electrical Characteristics (Tj=25°C)

Item	Symbols	Conditions	Min	Max	Unit
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_{CBO} = 1mA$	150		V
Collector-Emitter Voltage	$V_{CEO(SUS)}$	$I_{CBO} = 10mA$	100		
Emitter-Base Breakdown Voltage	$V_{EBO}$	$I_{EBO} = 1mA$	6		
Collector Cutoff Current	$I_{CBO}$	$V_{CBO} = 150V$		1.0	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EBO} = 6V$		1.0	
DC Current Gain	$h_{FE}$	$I_C = 3A \quad V_{CE} = 4V$	700		
Collector Saturation Voltage	$V_{CE(SAT)}$	$I_C = 1.5A$		1.5	V
Base Saturation Voltage	$V_{BE(SAT)}$	$I_B = 50mA$		2.0	

4. Thermal Characteristics

Item	Symbols	Conditions	Min	Max	Unit
Thermal Resistance	$R_{\theta(j-c)}$	Junction to Case		1.55	°C/W

Fuji Electric Co.,Ltd.

DWG.NO.

2/8

ET393

$V_{CE} = 4V$

---  $T_C = 50^\circ C$

—  $T_C = 25^\circ C$

—  $T_C = -30^\circ C$

50000  
30000

10000

5000  
3000

1000  
500  
300

100

0.03 0.05 0.1 0.3 0.5 1 3 5 10

Collector Current  $I_C$  (A)

DC Current Gain

Fuji Electric Co., Ltd.

DWG. NO.

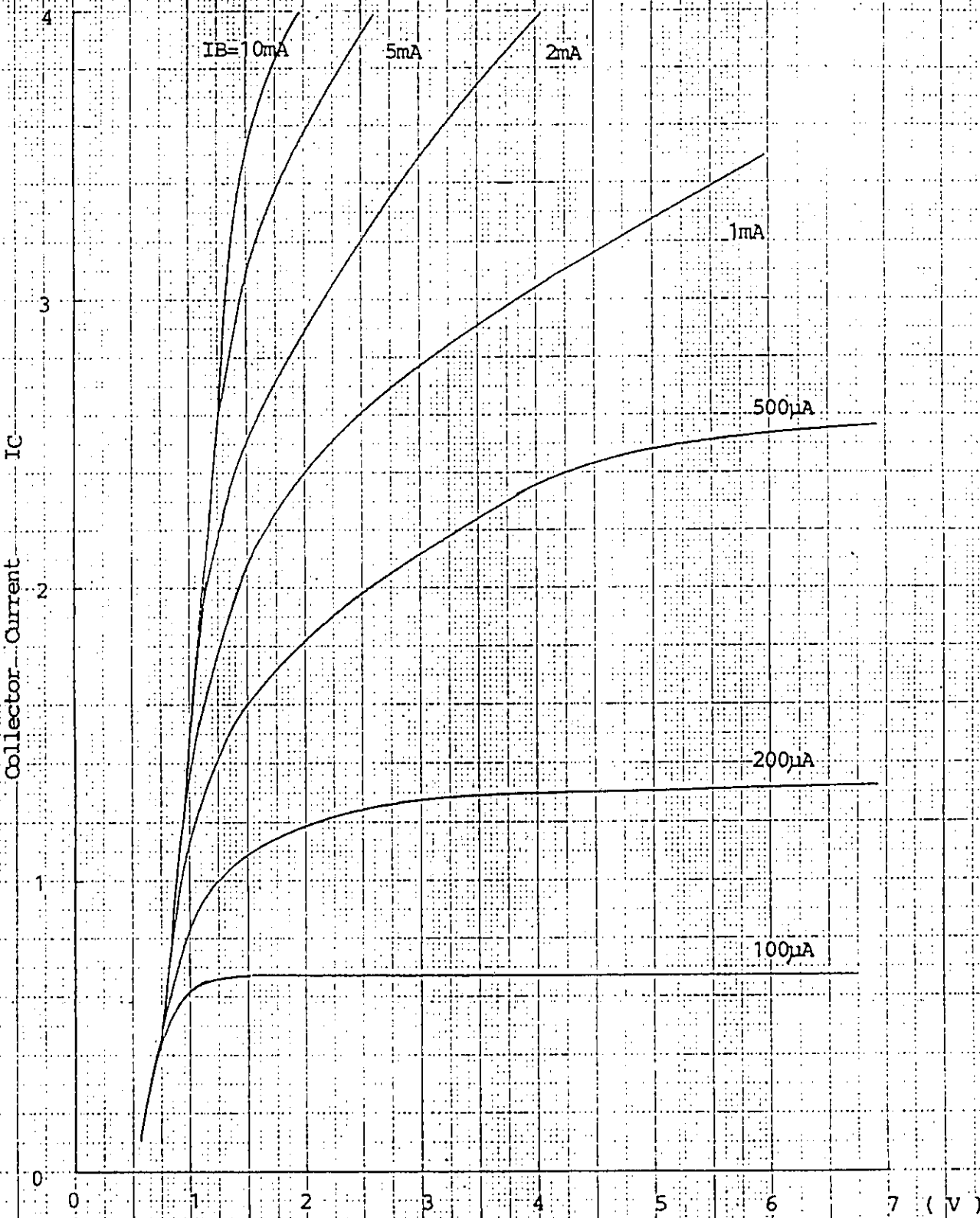
3/8

Y 0257-R-003a

ET393

### Collector Output Characteristics

(A)



Collector Current  $I_C$

Collector Emitter Voltage  $V_{CE}$

Fuji Electric Co., Ltd.

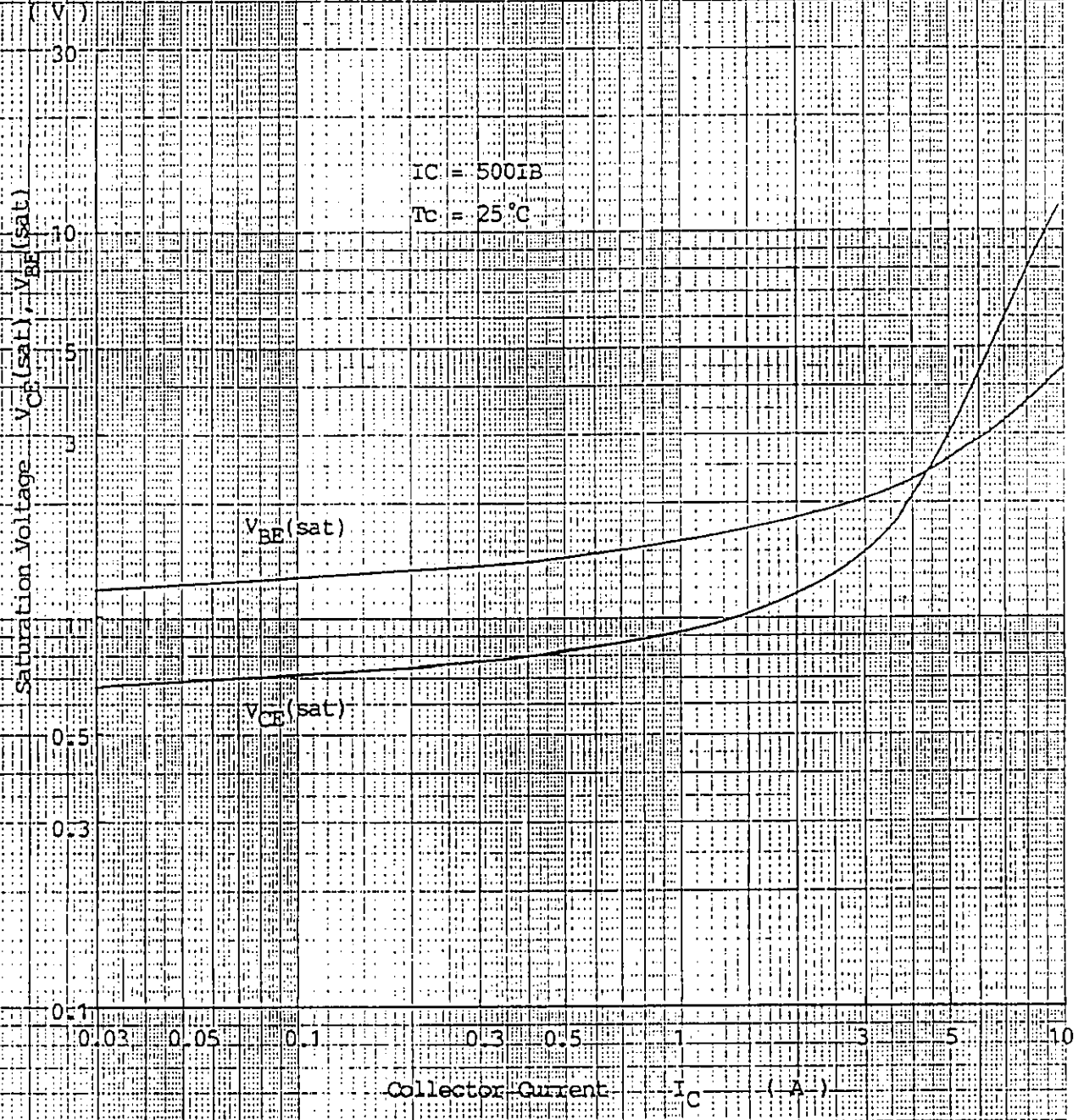
DWG. NO.

4/8

Y 0257-R-003a

ET398

Collector and Base Saturation Voltage



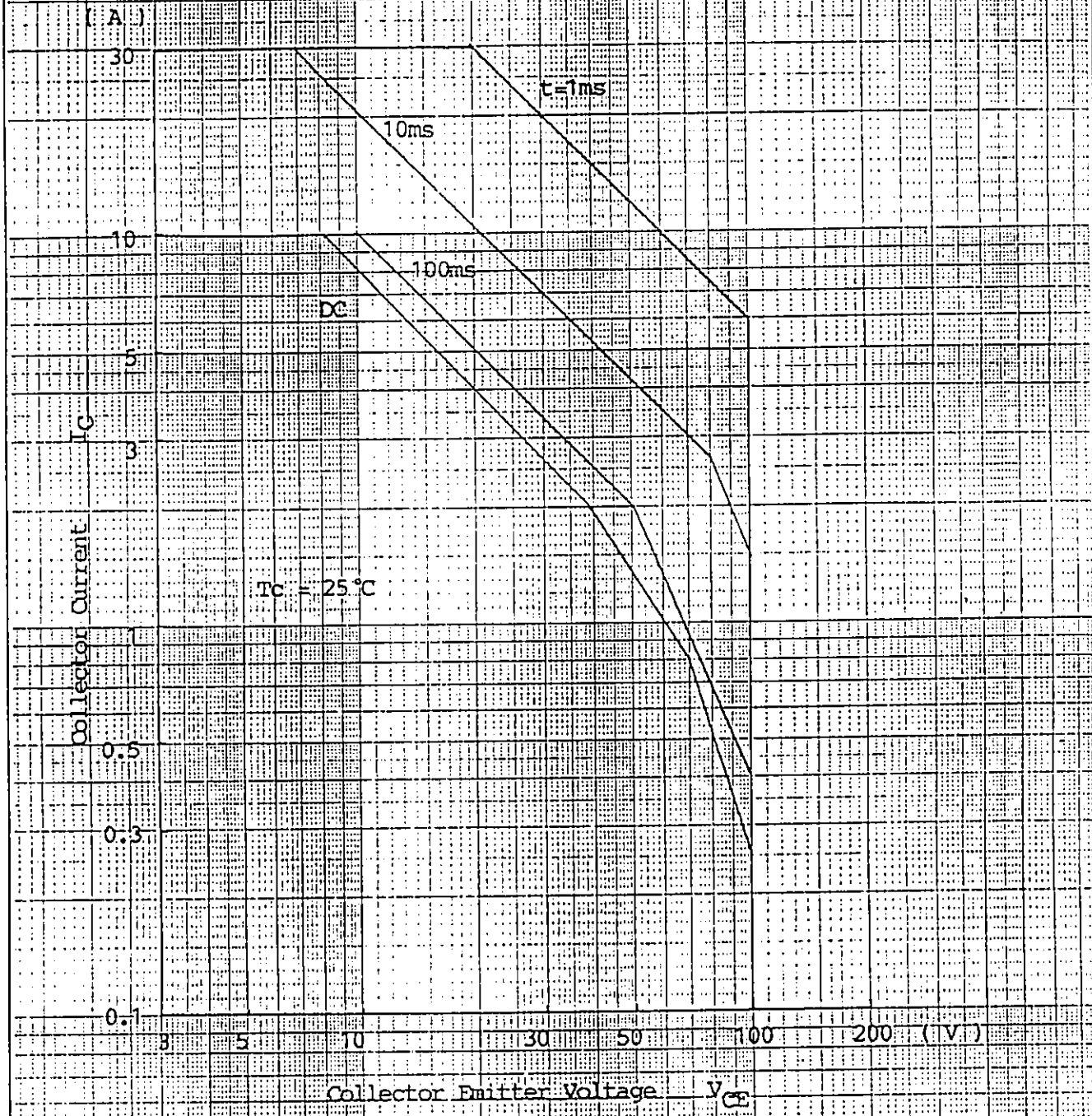
Fuji Electric Co., Ltd.

DWG NO

5/8

Y 0257-R-003a

ET395



Fuji Electric Co., Ltd

DWG NO.

6/8

Y 0257-R-003a

ET393

Transient Thermal Impedance

(C/w)

5.0

2.0

2.0

1.0

0.5

0.2

0.1

0.05

0.02

Rth(j-c)

Thermal Resistance

1000  
500  
200  
100  
50  
20  
10  
5.0  
2.0  
1.0  
0.5  
0.2

Time : T (msec)

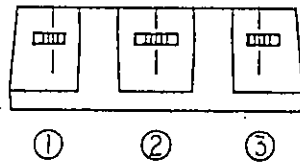
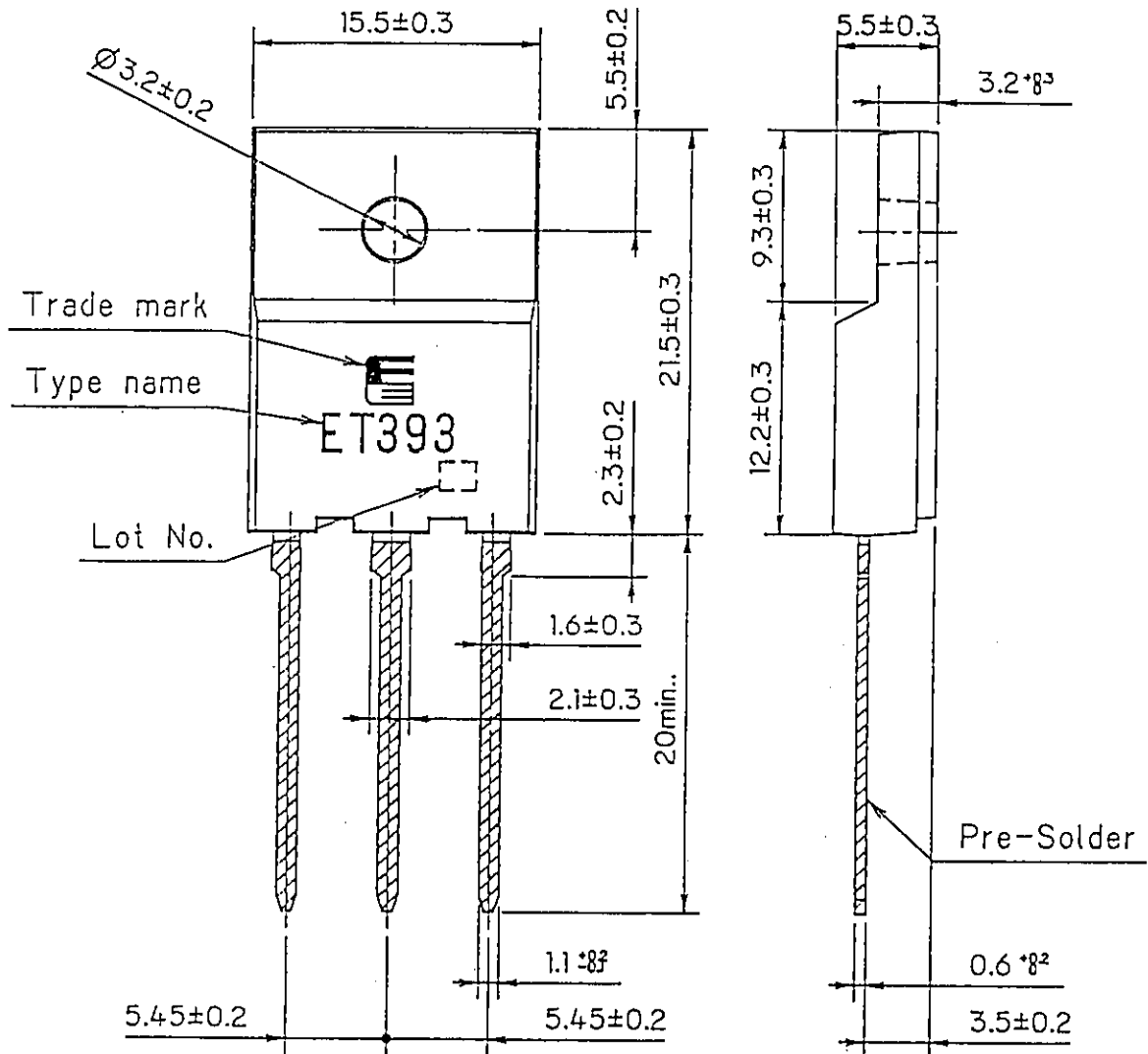
Fuji Electric Co.,Ltd

DWG NO.

7/8

Y 0257-R-003a

FUJI POWER TRANSISTOR  
TYPE : ET393R



CONNECTION

- ① BASE
- ② COLLECTOR
- ③ EMITTER

DIMENSIONS ARE IN MILLIMETERS.

Fuji Electric Co., Ltd.

DWG. NO.

8/8

Y 0257-R-003a



For more information, contact:

**Collmer Semiconductor, Inc.**

P.O. Box 702708

Dallas, TX 75370

972-233-1589

972-233-0481 Fax

<http://www.collmer.com>