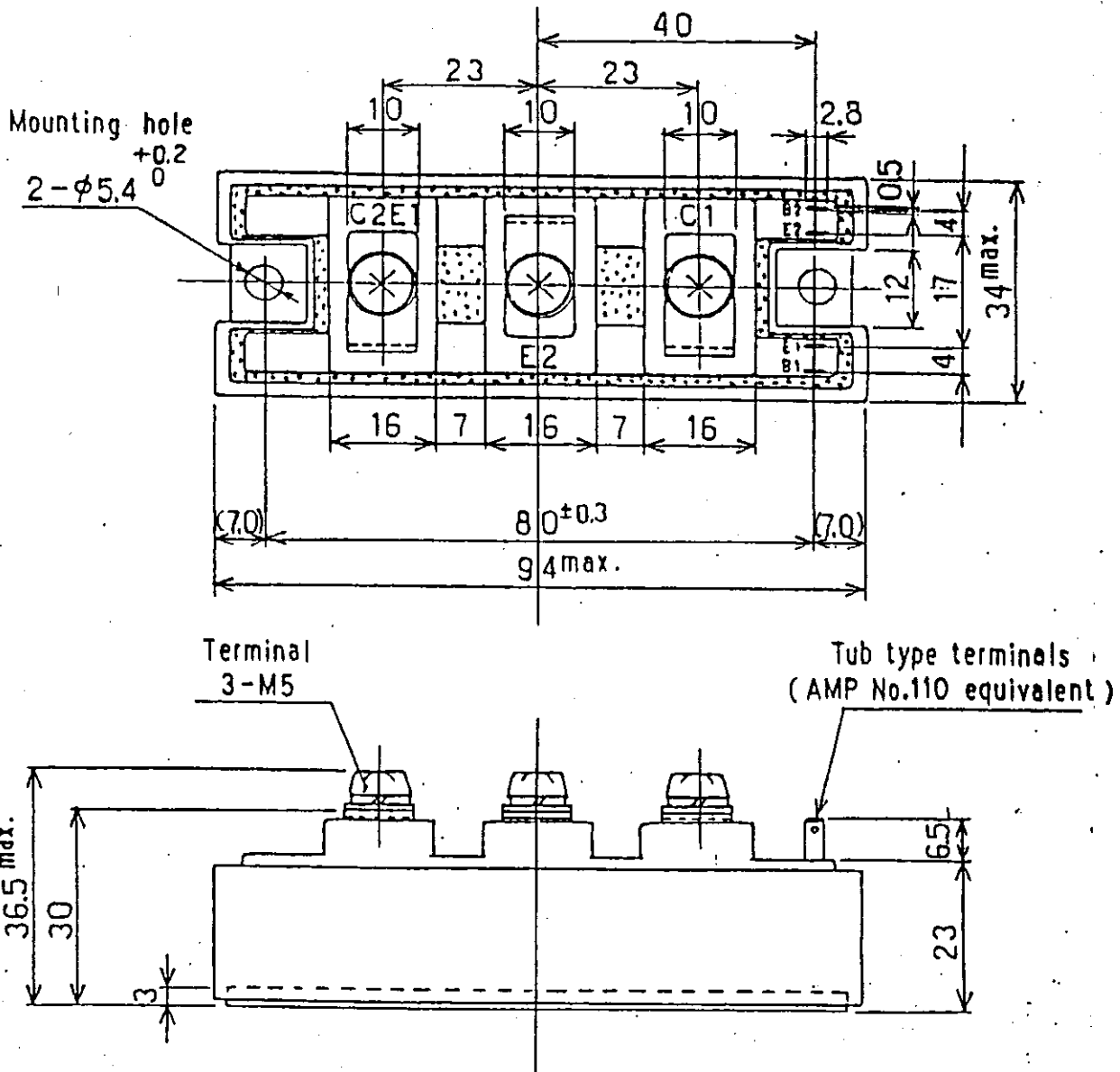


2 D I 5 0 Z - 1 4 0 (TENTATIVE)

1. Outline Drawing

Unit : mm

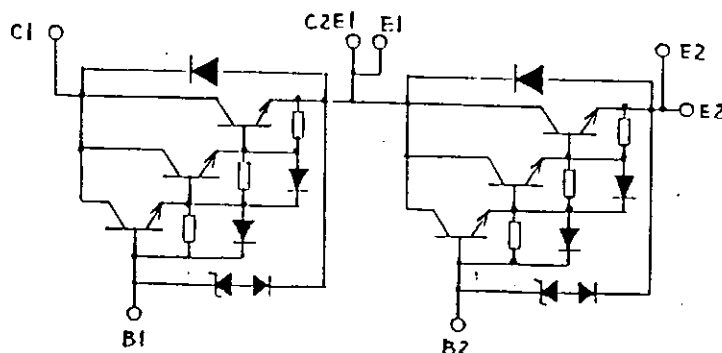
*Isolation Voltage : AC 2500 V 1 minute



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DATE	NAME	APPROVED	Fuji Electric Co., Ltd.	
DRAWN Oct. -31 -87	S. K. S. K.		DWG. NO.	MS5M1273 1/14
CHECKED Nov -5 -87	H. K.			
REVISIONS				

2. Equivalent Circuit



3. Absolute Maximum Ratings (TC=25°C)

Item		Symbol	Maximum Ratings	Unit
Collector-Base Voltage		VCBO	1 4 0 0	V
Collector-Emitter Voltage		VCEO	1 4 0 0	V
Emitter-Base Voltage		VEBO	1 0	V
Collector Current	DC	IC	5 0	A
	1ms	ICP	1 0 0	A
	DC	-IC	5 0	A
Base Current	DC	IB	3	A
	1ms	IBP	6	A
Collector Power Dissipation	One Transistor	PC	4 0 0	W
	Two Transistor		8 0 0	W
Operating Temperature		Tj	+ 1 5 0	°C
Storage Temperature		Tstg	- 4 0 ~ + 1 2 5	°C
Screw Torque	Mounting *1		3 5	kg · cm
	Terminals *1		3 5	
Isolation Voltage		A C 2 5 0 0		V

Note :

*1 Recommendable Value : 25 ~ 35 kg · cm (M5)

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	CHECKED	- -			
				DWG.NO.	MS5M1273 2/14

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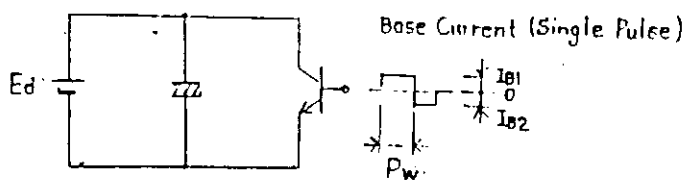
4. Electrical Characteristics (Tj=25℃ unless otherwise specified)

Characteristics	Symbol	Conditions	MIN	MAX	Unit
Collector-Base Voltage	VCBO	ICBO=10mA	1400		V
Collector-Emitter Voltage	VCEO	ICEO=10mA	1400		
Collector-Emitter Voltage	VCEX(SUS)	VBE = -3V	1200		
Emitter-Base Voltage	VEBO	IEBO=200mA	10		
Collector Cutoff Current	ICBO	VCBO=1400V		10	mA
Emitter Cutoff Current	IEBO	VEBO=10V		200	
DC Current Gain	hFE	IC=50A VCE=2.8V Tj=125℃	75		
		IC=50A VCE= 5V	100		
Collector Saturation Voltage	VCE(sat)	IC=50A		2.8	V
Base Saturation Voltage	VBE(sat)	IB=0.7A		3.5	
Switching Time	ton	IC=50A		3.0	μs
	tstg	IB1 =+0.7A		15.0	
	tf	IB2 =-1.0A		2.0	
Emitter-Collector Voltage	VECO	IECO=50A		2.0	V
Reverse Recovery Time	trr	IF=50A		0.8	μs
Short Circuit Capability *2	Ed	IB1 =+0.7A PW=50μs IB2 =-1.0A	750		V

5. Thermal Characteristics

Characteristics	Symbol	Conditions	MIN	MAX	Unit
Thermal Resistance	Rth(j-c)	Power Transistor		0.31	°C/W
		Fast Recovery Diode		1.2	
Contact Thermal Resistance	Rth(c-f)	Mounting torque 35kg·cm with thermal compound	(TYP) 0.06		

*2 Test Circuit



Wiring Length

Collector : ≤ 10 cm

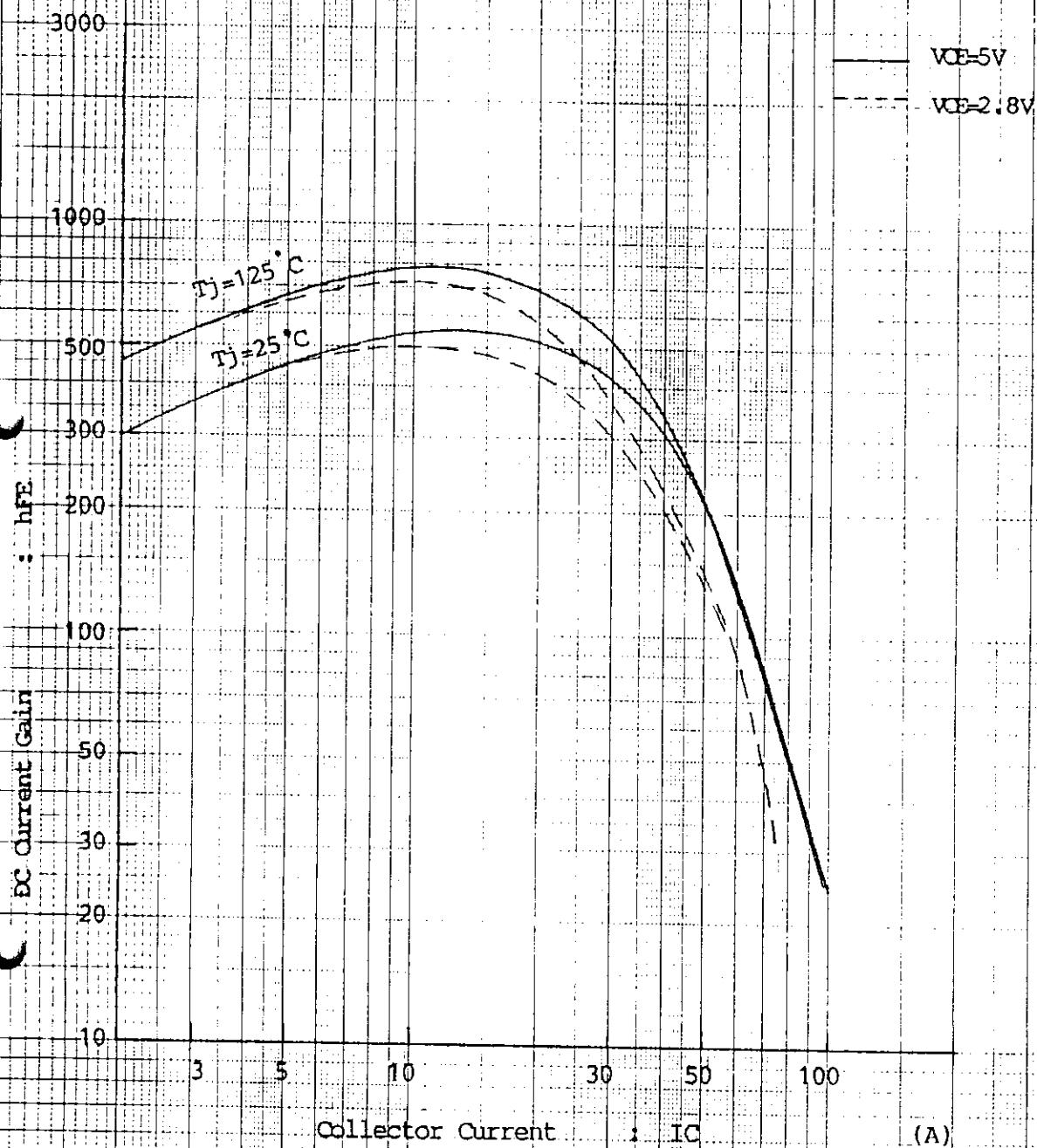
Emitter : ≤ 10 cm

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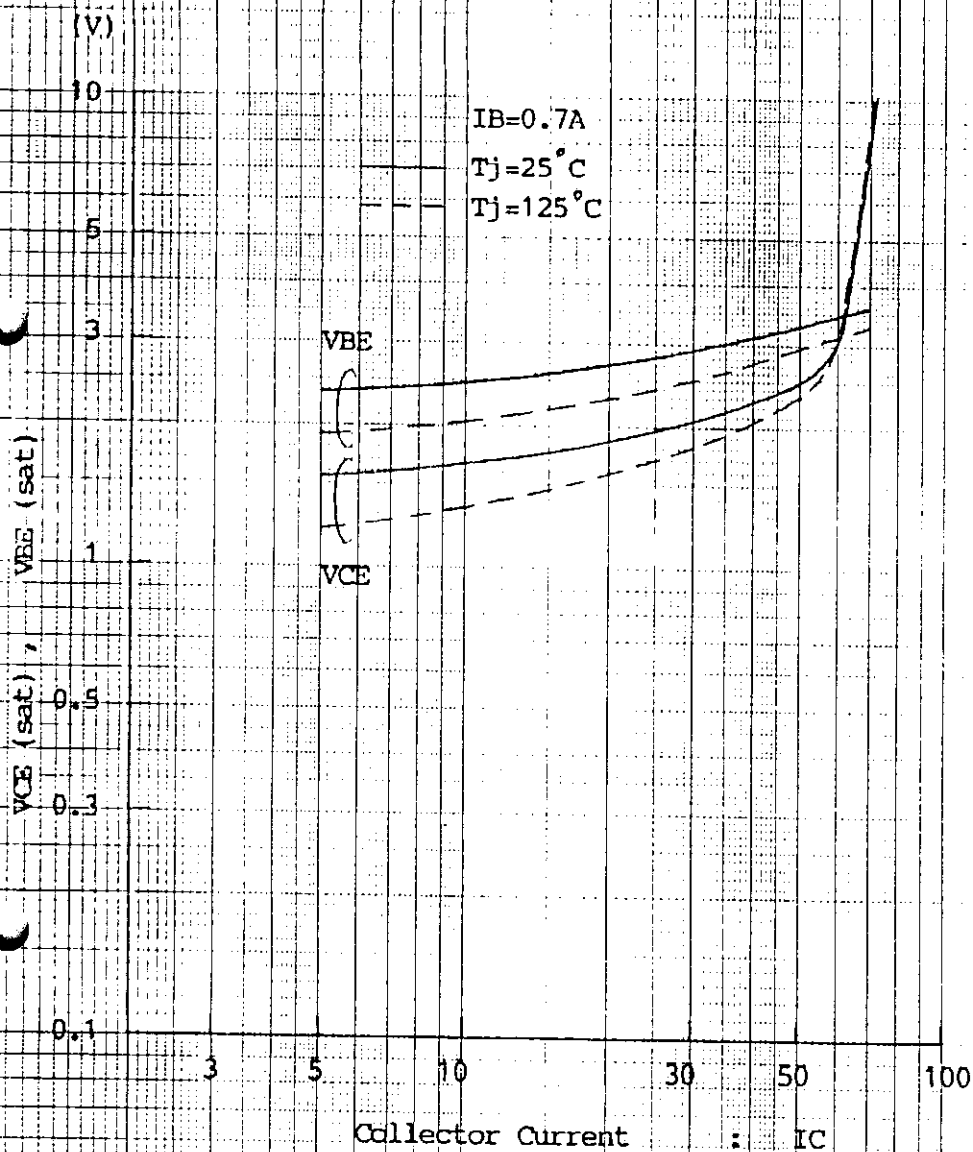
DWG. NO.

MS5M1273

3/14



DC Collector Current Gain Characteristics



(A)

Collector and Base Saturation Voltage

2DI50Z-140

$T_J = 25^\circ\text{C}$
 $T_J = 125^\circ\text{C}$

$I_C = 20\text{A}$ 30A 40A 50A

(V)

10

5

3

$V_{CE}(\text{sat})$

0.5

0.01

0.03

0.05

0.1

0.3

0.5

1.0

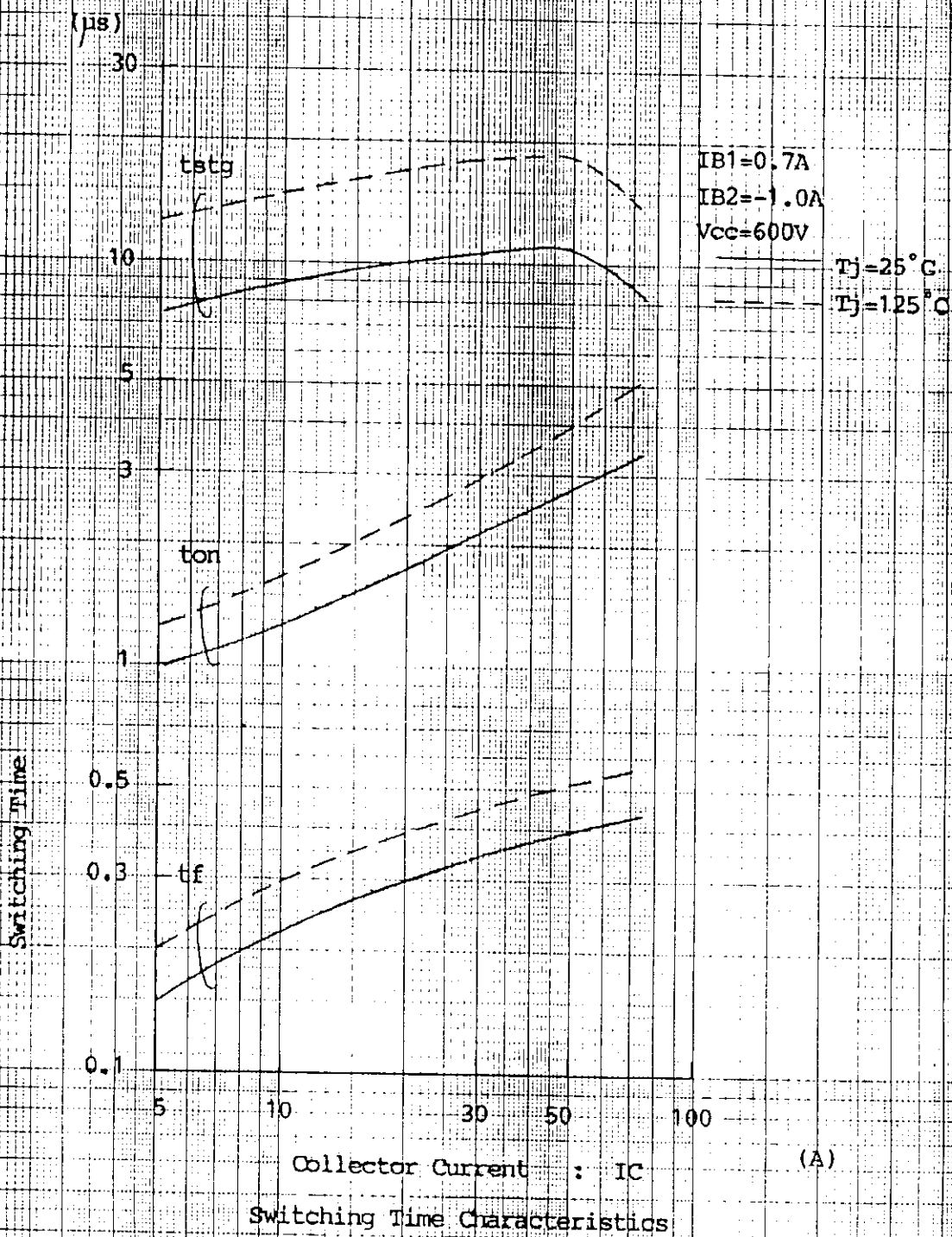
3.0

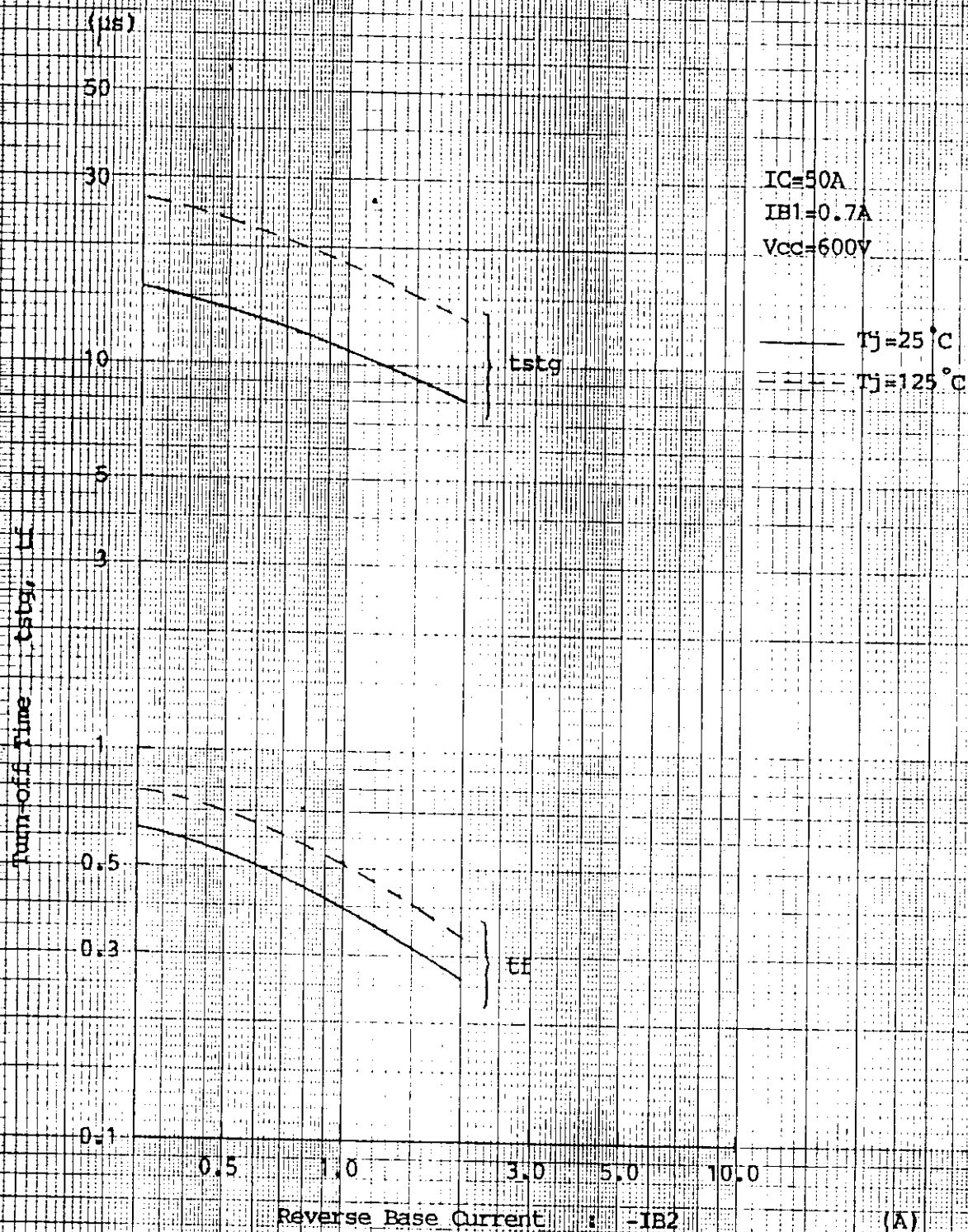
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(A)

Base Current : I_B

Collector-Emitter Saturation Voltage

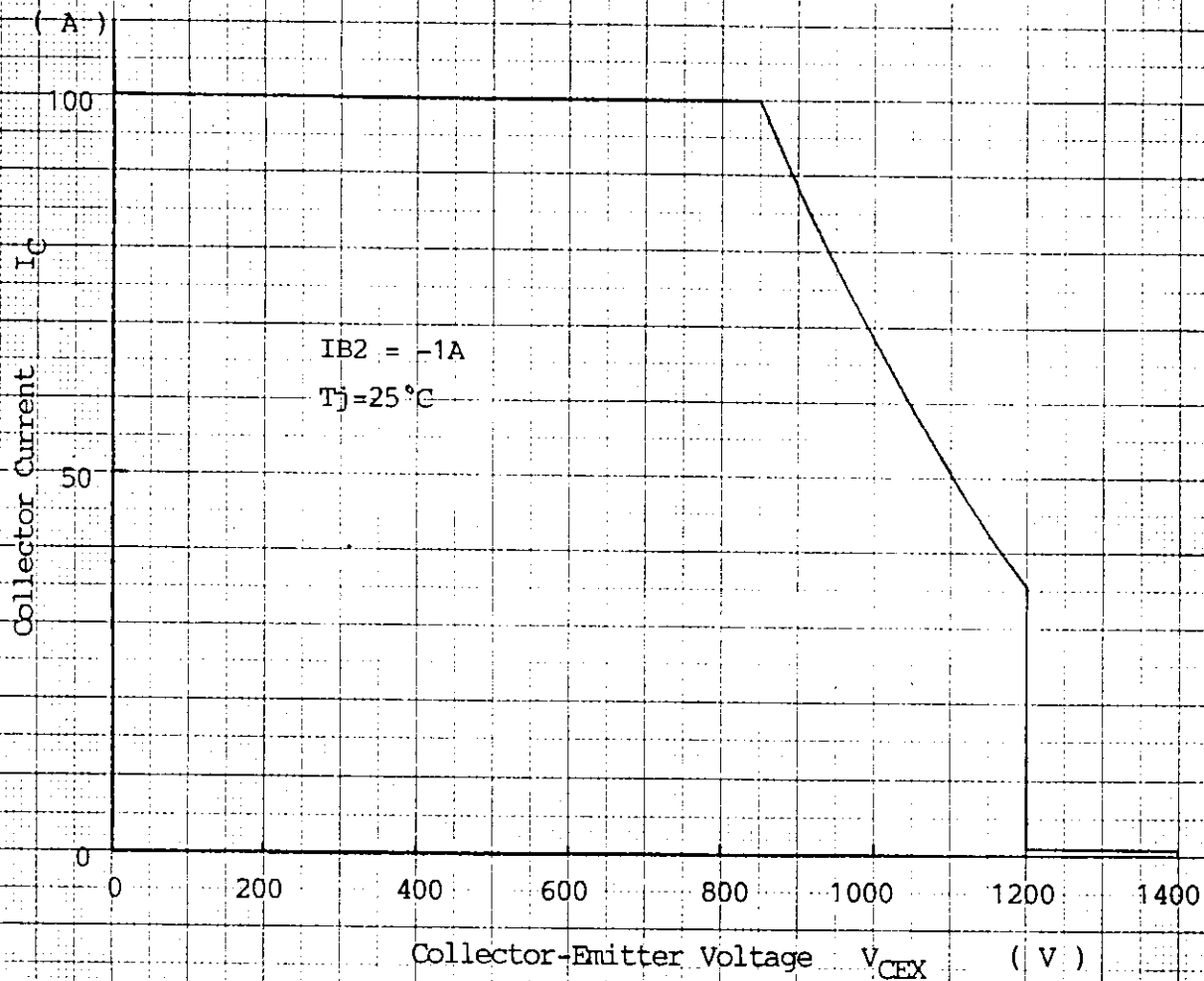




-IB2 vs Turn off Time Characteristics

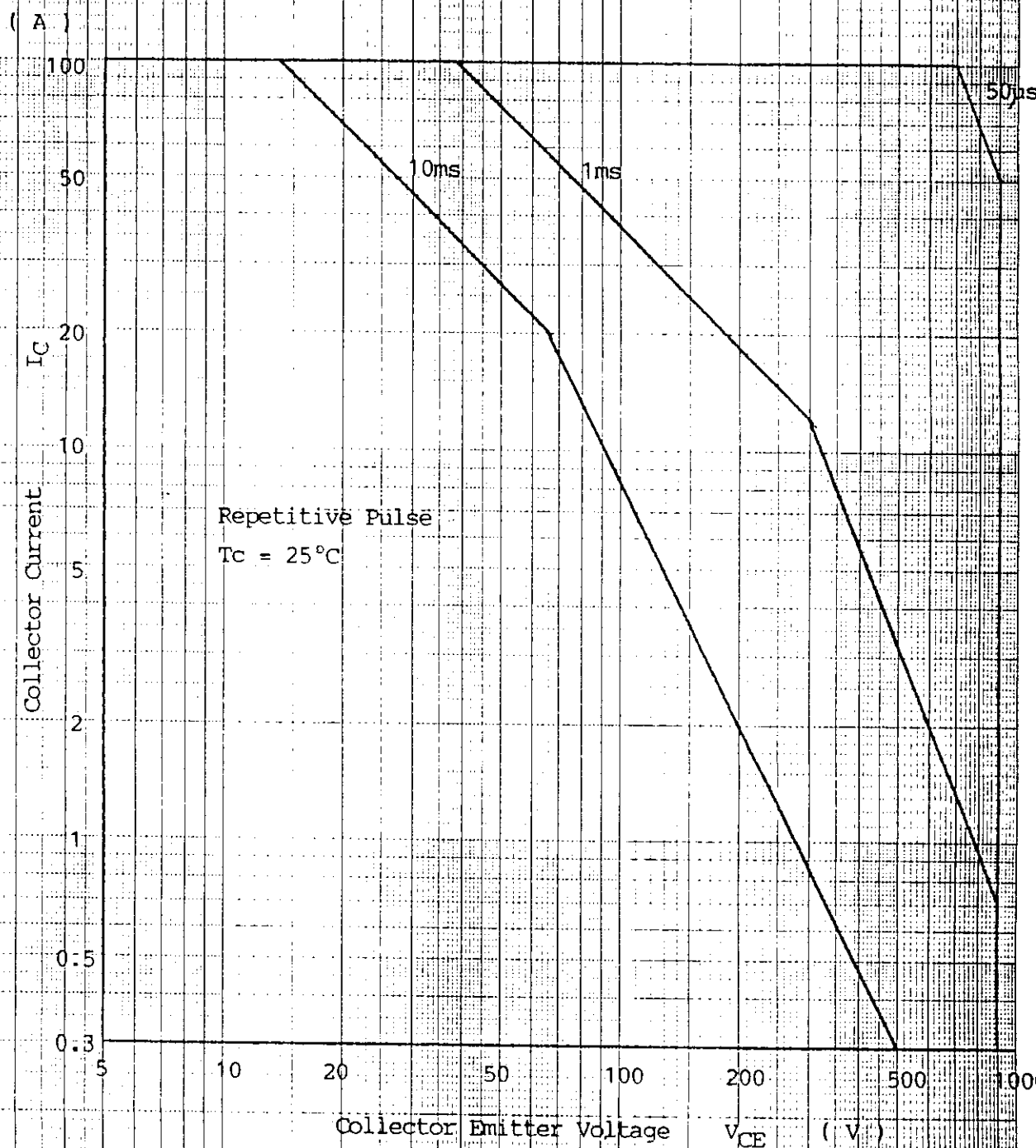
2DI50Z-140

Reverse Biased Safe Operating Area



MS5M1273 9

Forward Bias Safe Operating Area



2DI50Z-140

Transient Thermal Resistance (Transistor)

(°C/W)

0.5

Rth(j-c)

0.1

0.05

Thermal Resistance

0.01

0.005

1x10⁻⁴

5 1x10⁻³

5 10⁻²

5 10⁻¹

100

Time

(sec)

5

10

20

30

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

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340

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860

870

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960

970

980

990

1000

1010

1020

1030

1040

1050

1060

1070

1080

1090

1100

1110

1120

1130

1140

1150

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1190

1200

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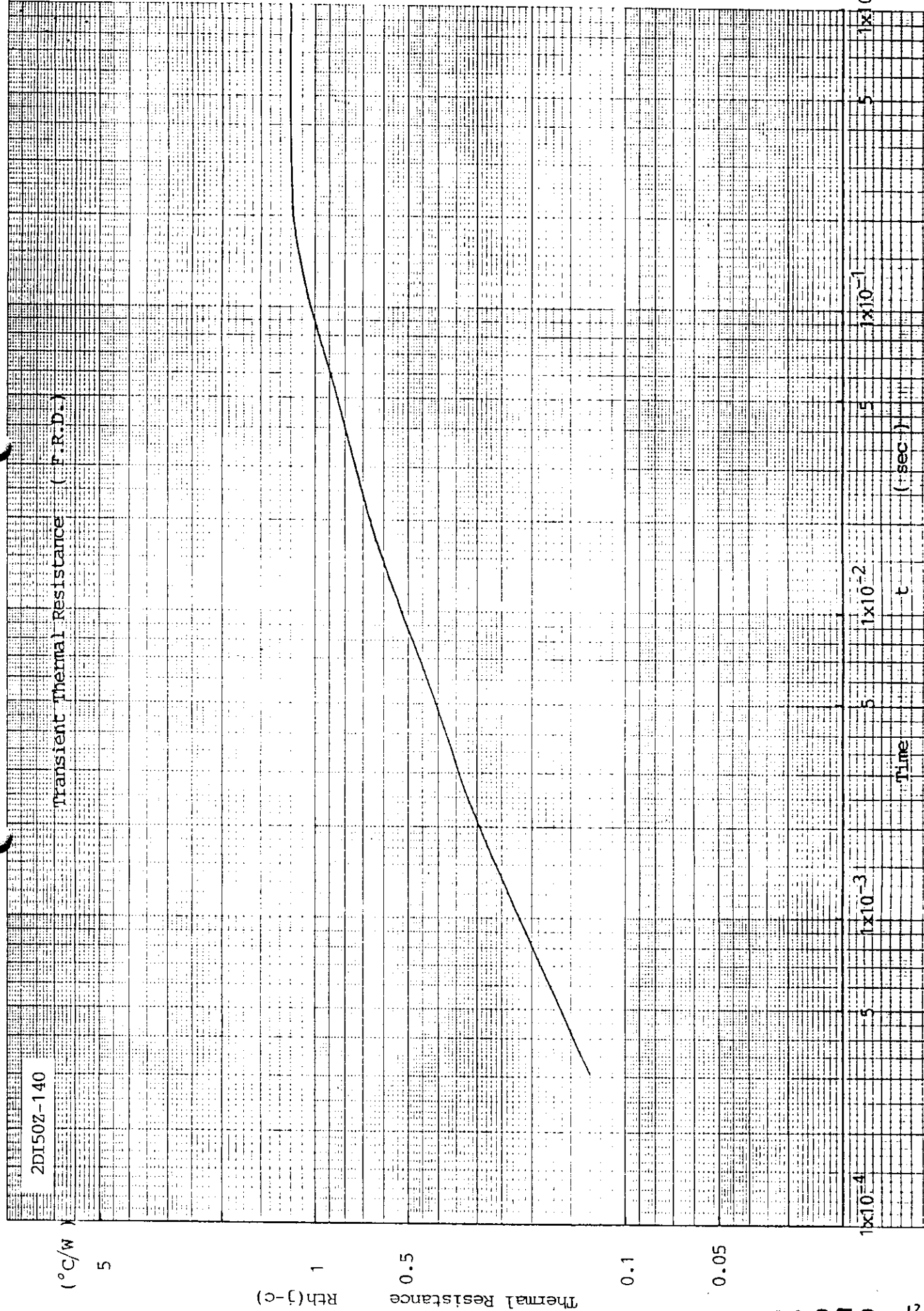
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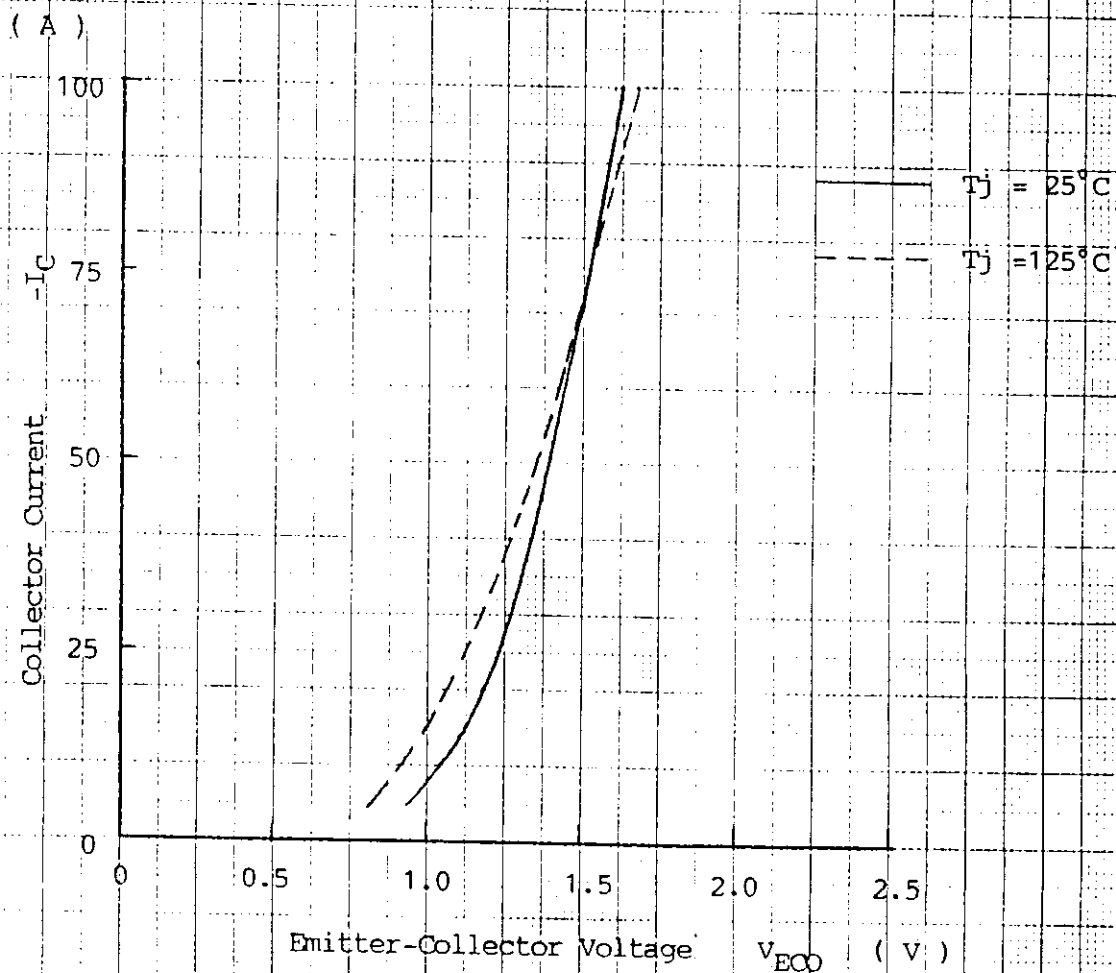
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Forward Characteristics of Build-in Fast Recovery Diode

Power Derating Factor

(%)

