SPECIFICATION

DEVICE NAME : IGBT

TYPE NAME : F5024

SPEC. No. : MS5F4193

DATE : Nov. - 10 - 1997

Fuji Electric Co., Ltd.

This Specification is subject to change without notice.

	DATE	NAME	APPROVED
DRAWN	Nov.-10-'97	S. Takeuchi	
CHECKED	Nov.-10-'97	S. Furukata	

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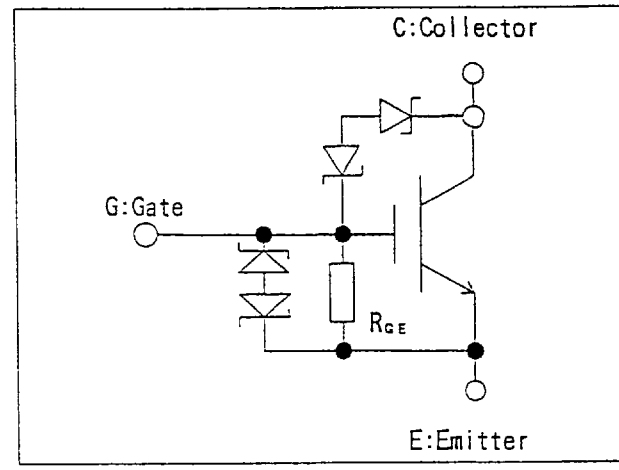
1. Outline Drawing

T O − 2 2 0

2. Equivalent circuit



3. Absolute maximum ratings (Tc=25℃)

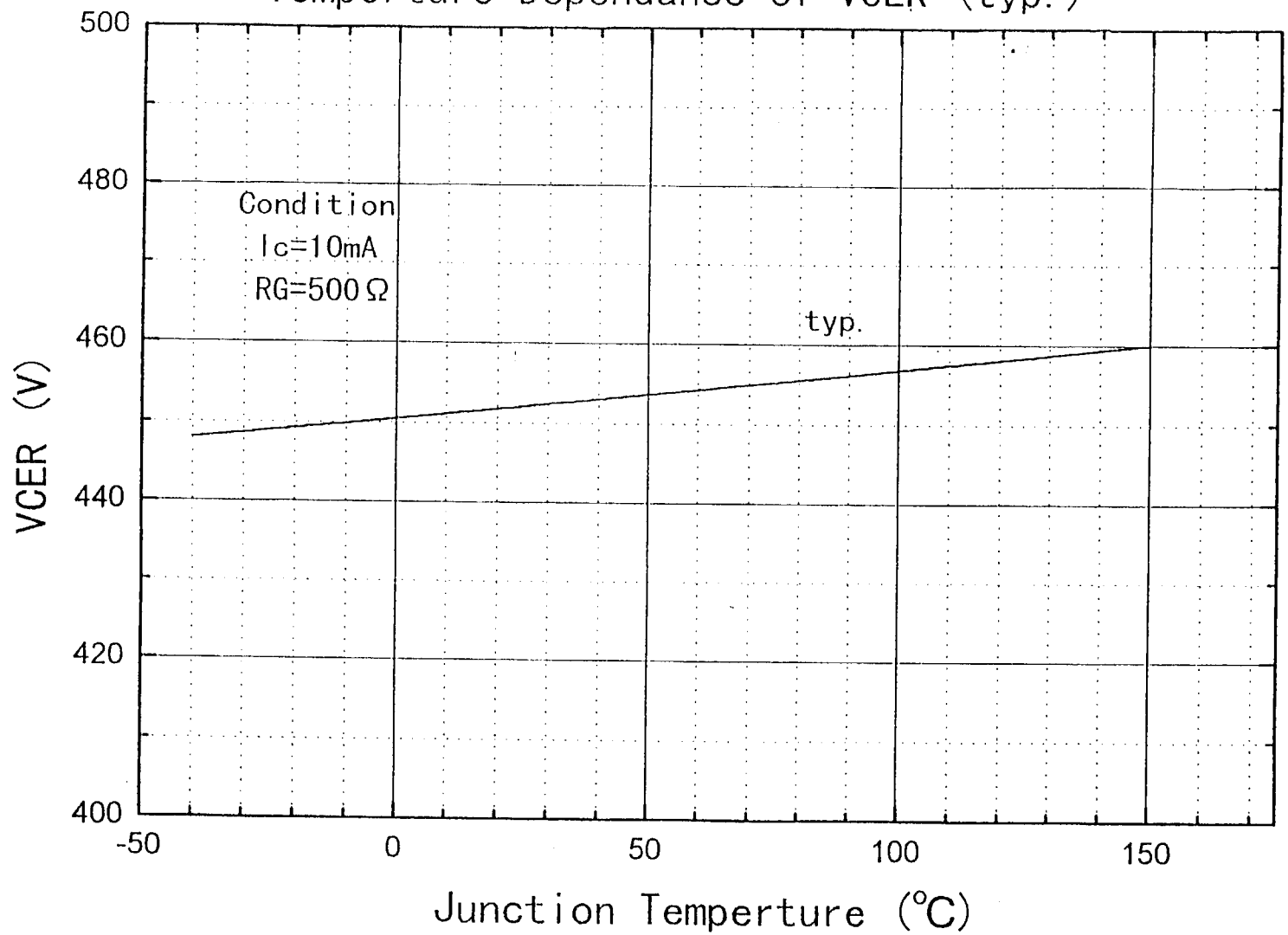
Items		Symbols	Ratings	Units
Collector-Emitter Voltage		V_{CER}	4 1 0	V
Gate-Emitter Voltage		V_{GES}	± 6	V
Collector Curren		I_C	1 0	A
Reverse Collector Current(Pw≦100μs)		$-I_C$	1 2	A
Power Dissipation		P_D	8 0	W
Electrostatic Voltage (150pF, 150Ω)	Gate - Emitter	ESD	2	KV
	Collector - Emitter		2 5	
Operating Temperature		Tj	+1 5 0	℃
Storage Temperature		Tstg	−5 5 ～ +1 5 0	℃

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

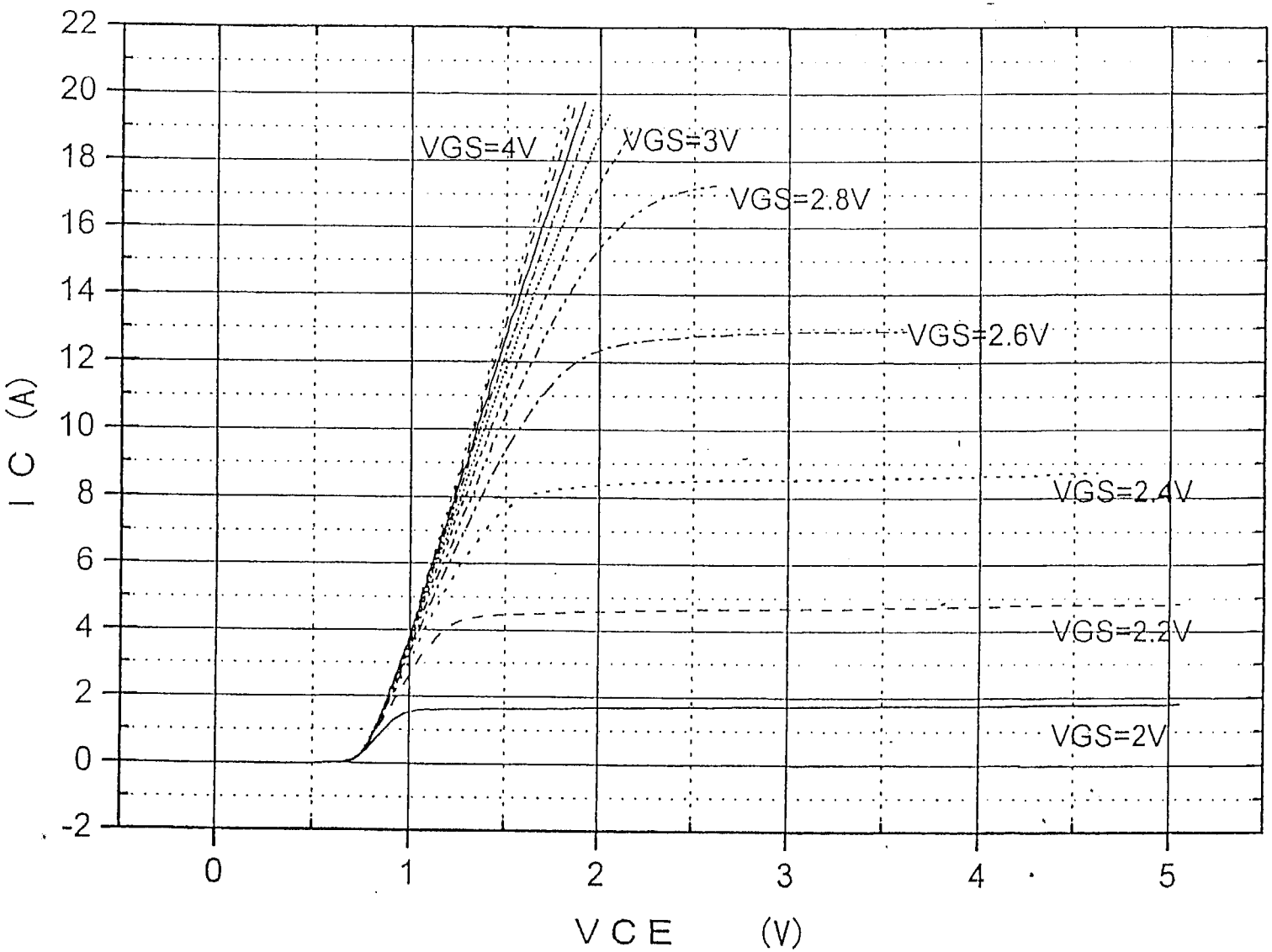
Items	Symbols	Characteristics			Conditions	Unit
		min.	typ.	max.		
Collector-Emitter Voltage	V_{CER}	410		490	Tj=-40～150 ℃ RGE=500 Ω IC=10mA	V
Zero gate voltage Collector Current	I_{CES}			100	Tj= 125 ℃ V_{GE} = 0V V_{CE} =300V	μA
Gate-Emitter Resistance	R_{GE}	10		30	Tj=-40～150 ℃	KΩ
Gater-Emitter Voltage	V_{GES}	± 6		±10	I_G = ±2mA	V
Collector Emitter Reverse Leakage	- I_C			100	Tj=-40～150 ℃ -V_{CE}= 15V	mA
Collector Emitter Reve--rse Breakdown Voltage	- V_{CE}	36		60	-I $_C$ =75mA	V
Gate-Emitter Threshold Voltage	$V_{GE(th)}$	0.7		2.6	Tj=-40～150 ℃ V_{CE} = 36V Ic = 1mA	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		1.3	2.5	Tj= 150 ℃ V_{GE} = 3.2V Ic = 10A	V
Input capacitance	Cies		800		V_{GE} = 0V V_{CE} = 15V f = 1MHz	pF
Output capacitance	Coes		120			
Reverse transfer capacitance	Cres		45			

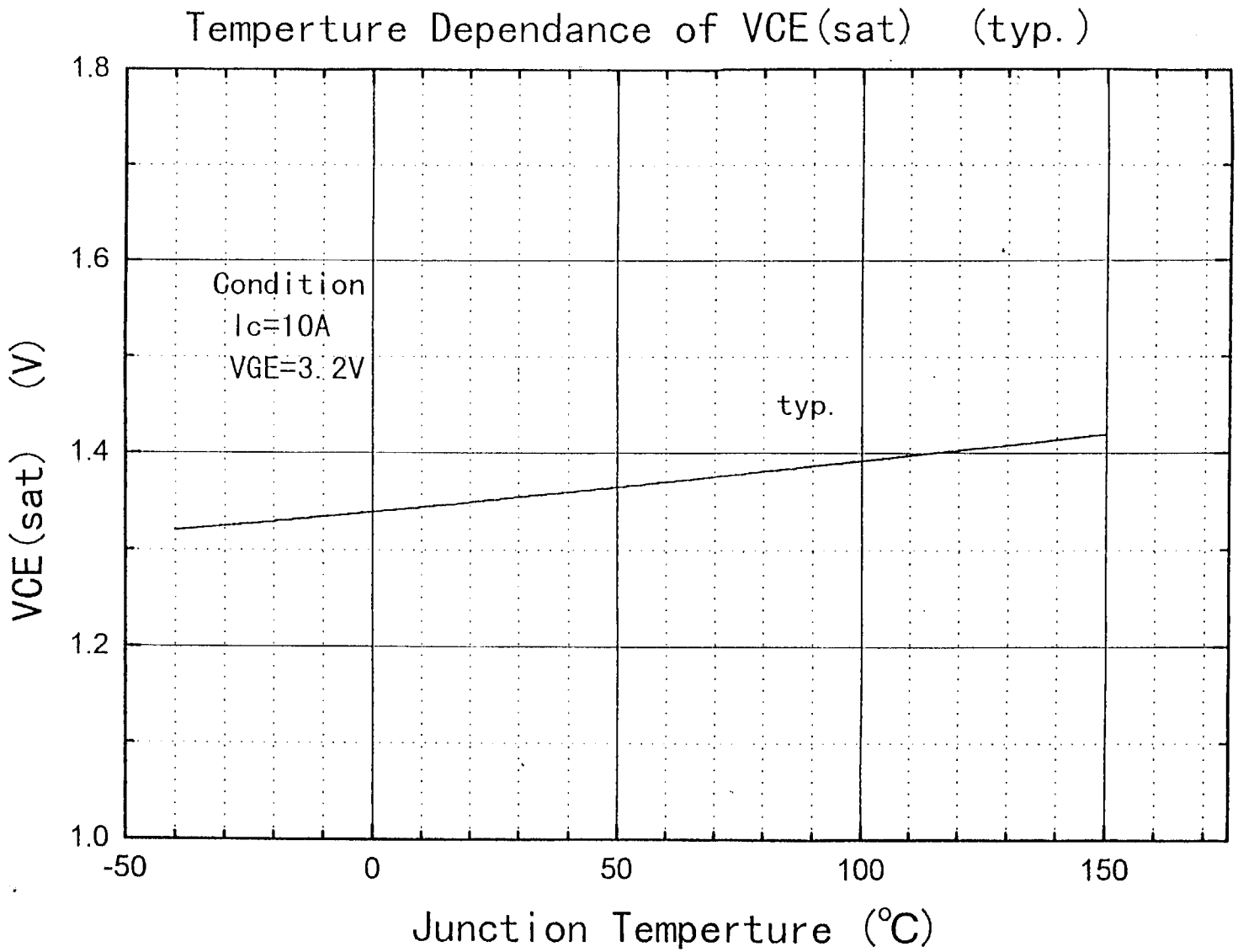
5. Unclamped Inductive Switching Characteristics

Items	Characteristics			Conditions	Unit
	min.	typ.	max.		
Single Pulse Collector Emitter Avalanche Energy	230			Starting Tj= 150℃ L = 5mH	mJ

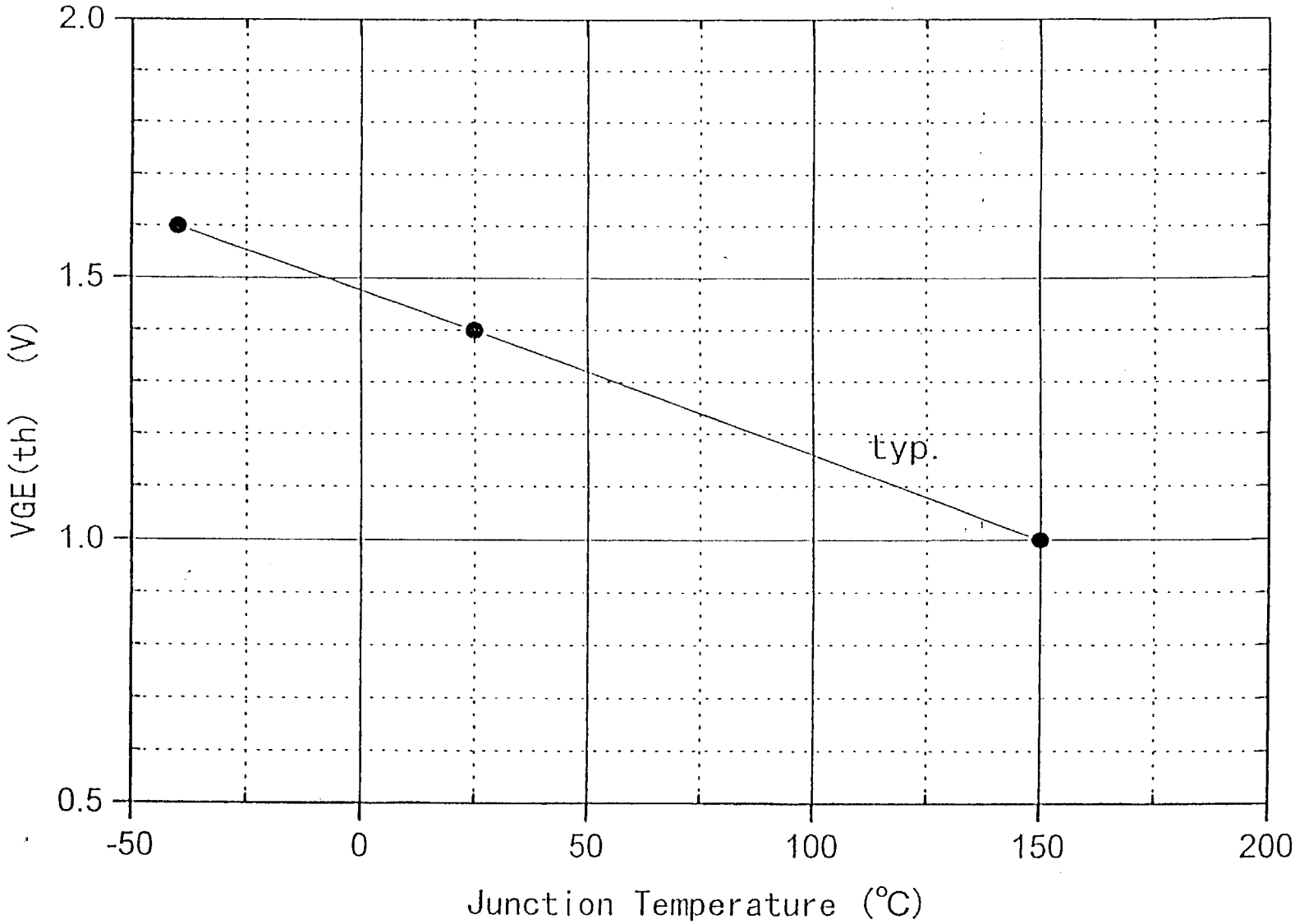


F5024 Output Characteristics (TC=25°C、Typ.)

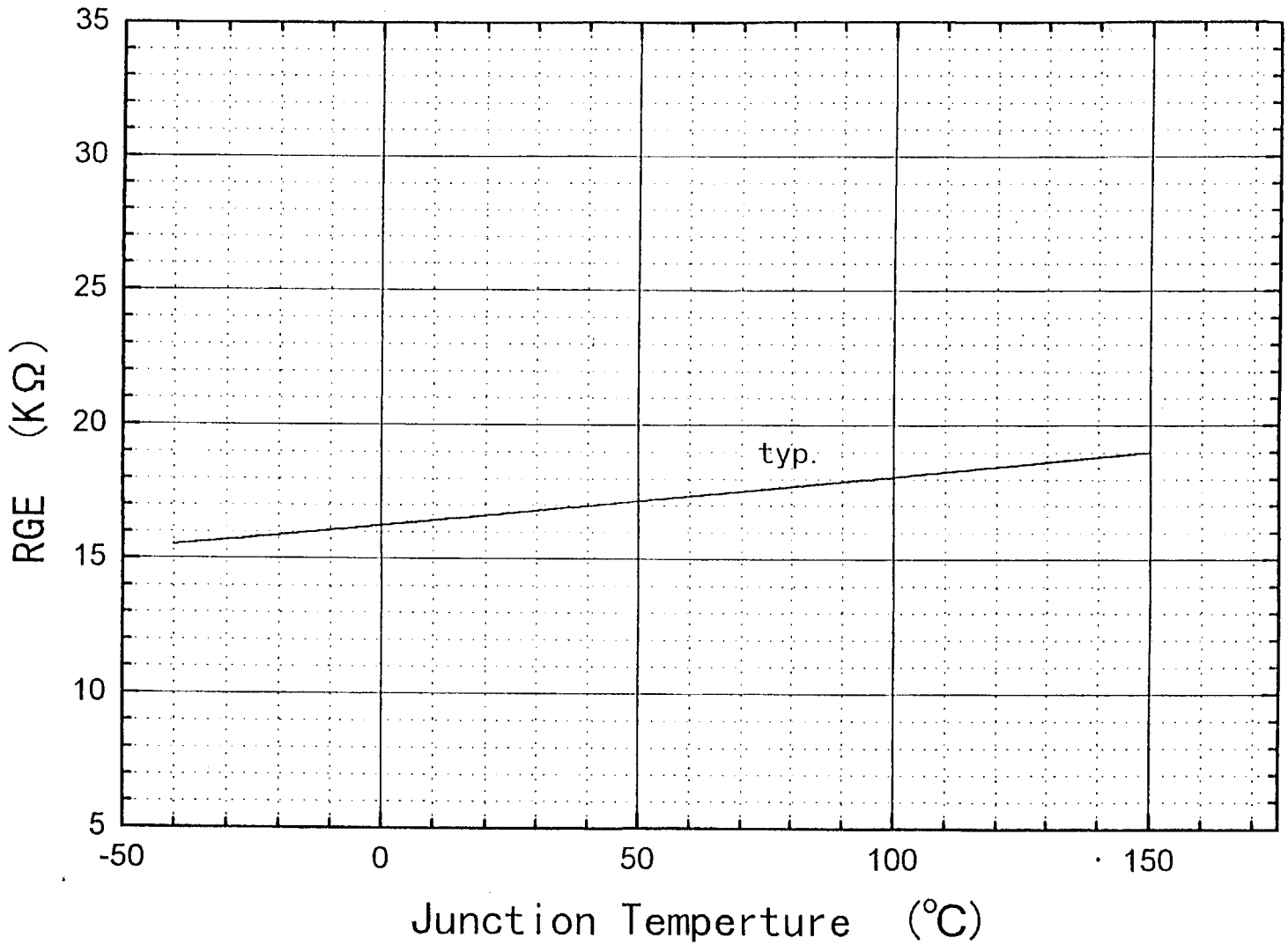




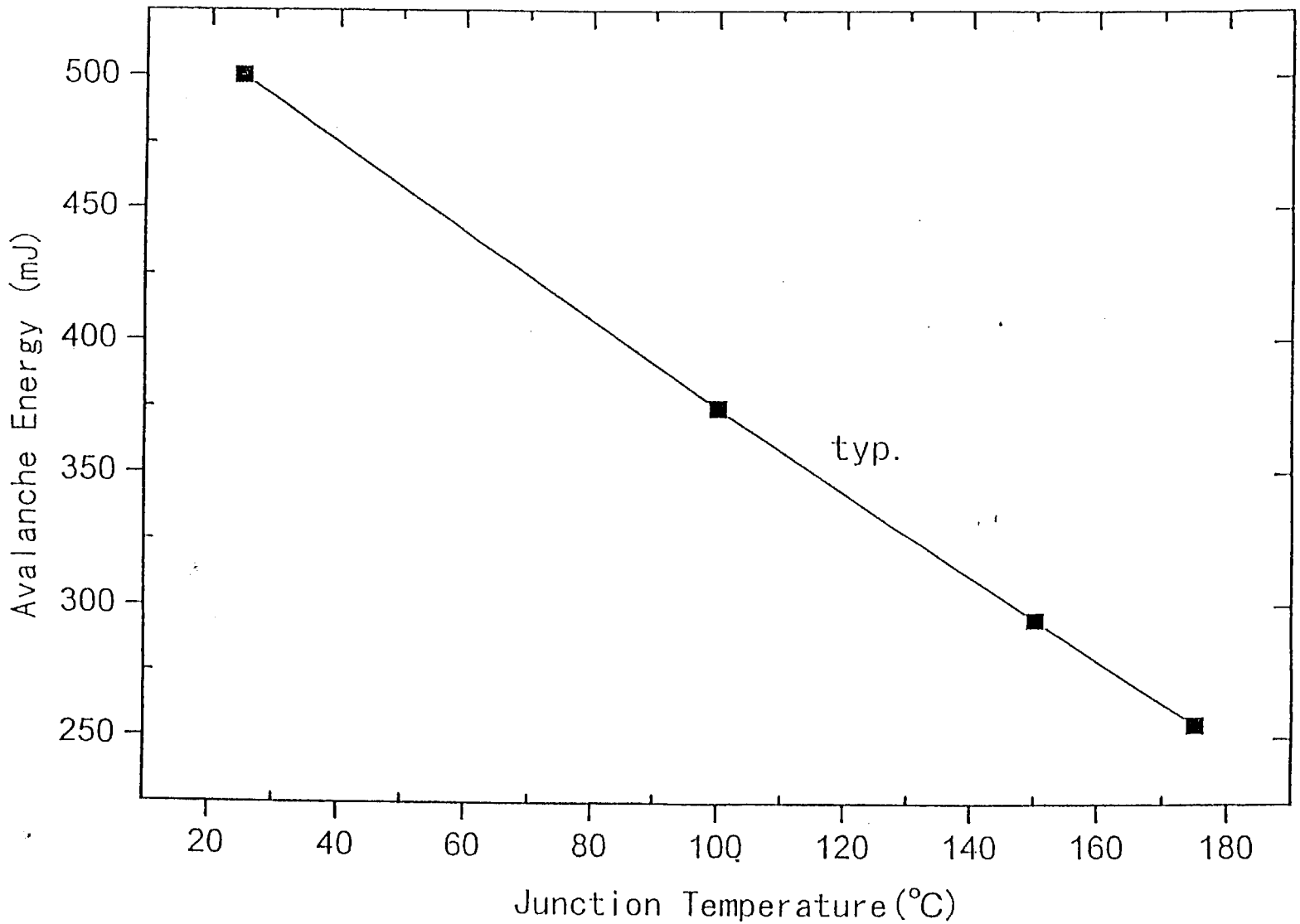
Temperature Dependence of VGE(th)

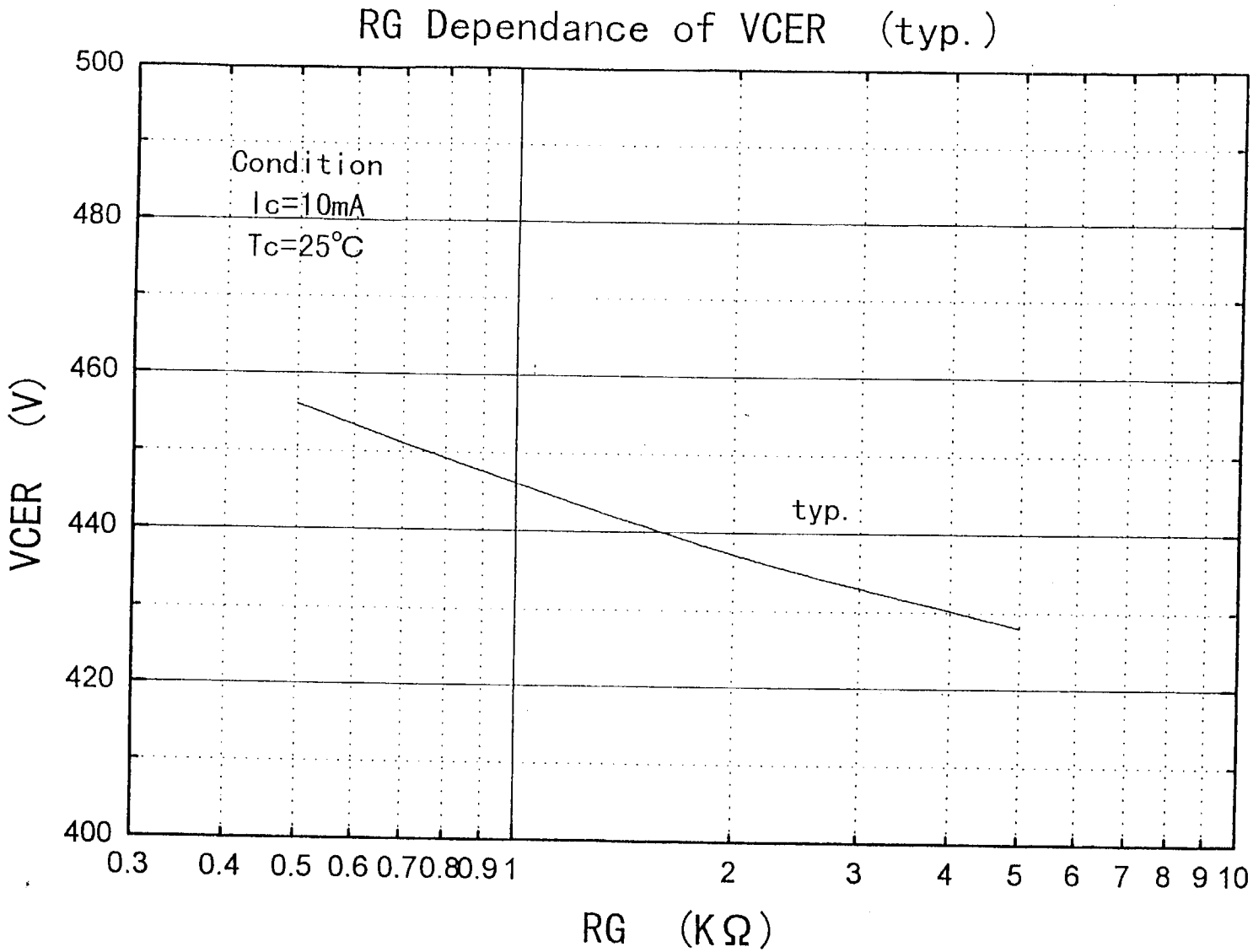


Temperture Dependance of RGE (typ.)

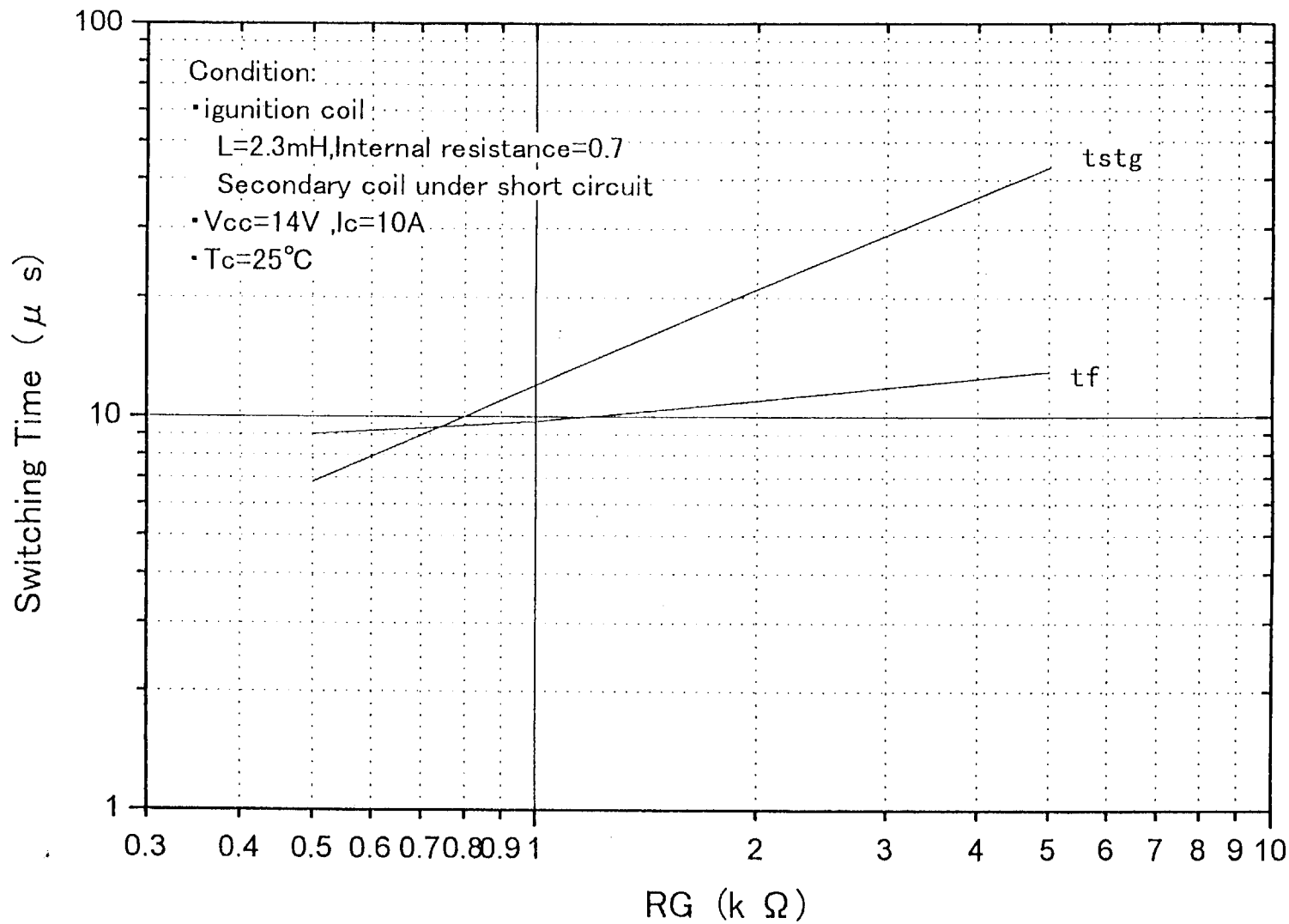


Single Pulse Collector Emitter Avalanche Energy





RGE Dependense of Switching Time (typ.)



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