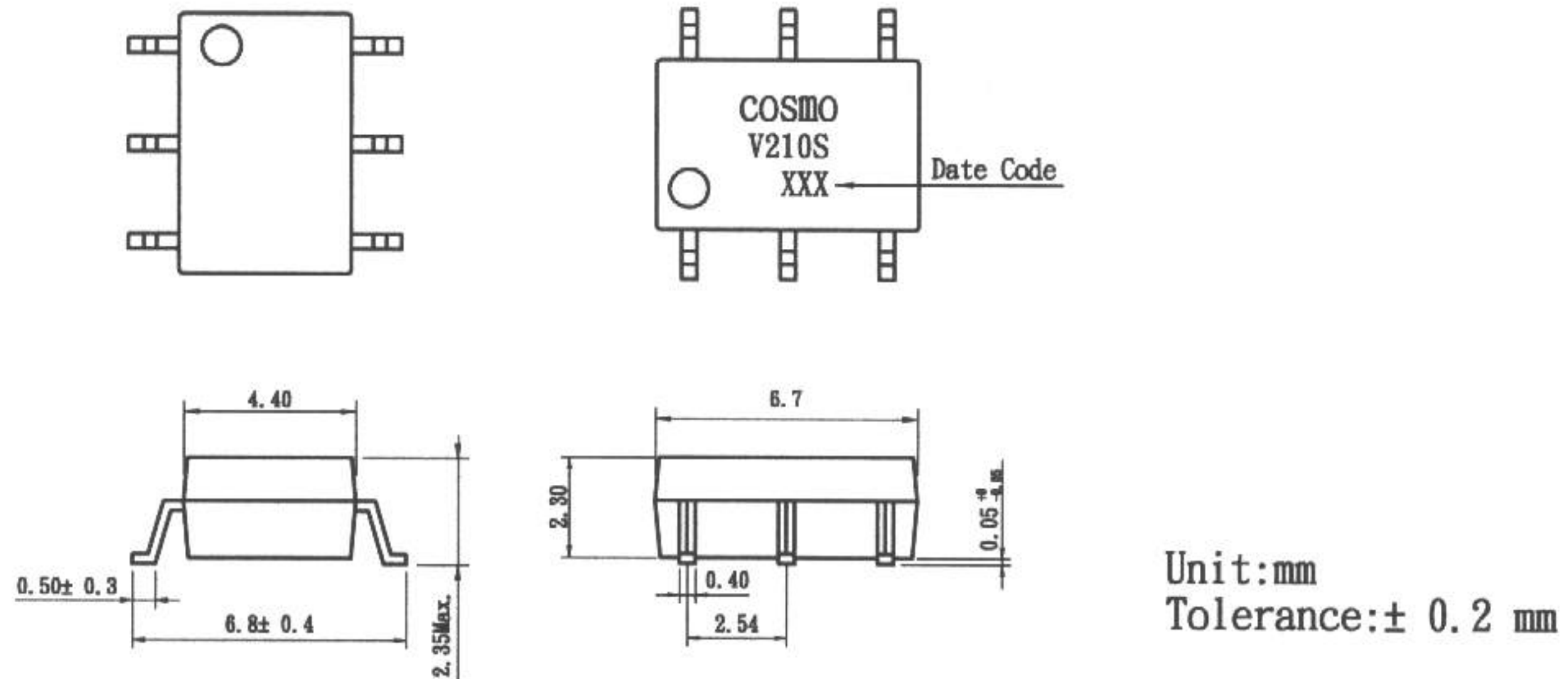


PRODUCT SPECIFICATION

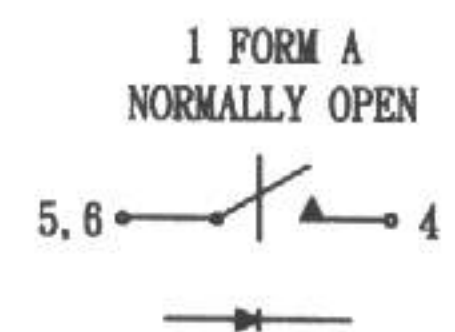
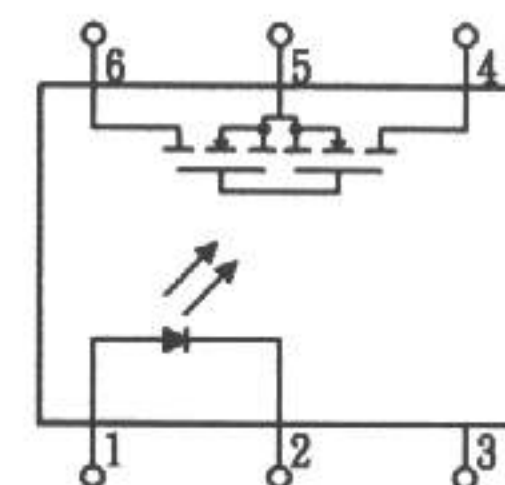
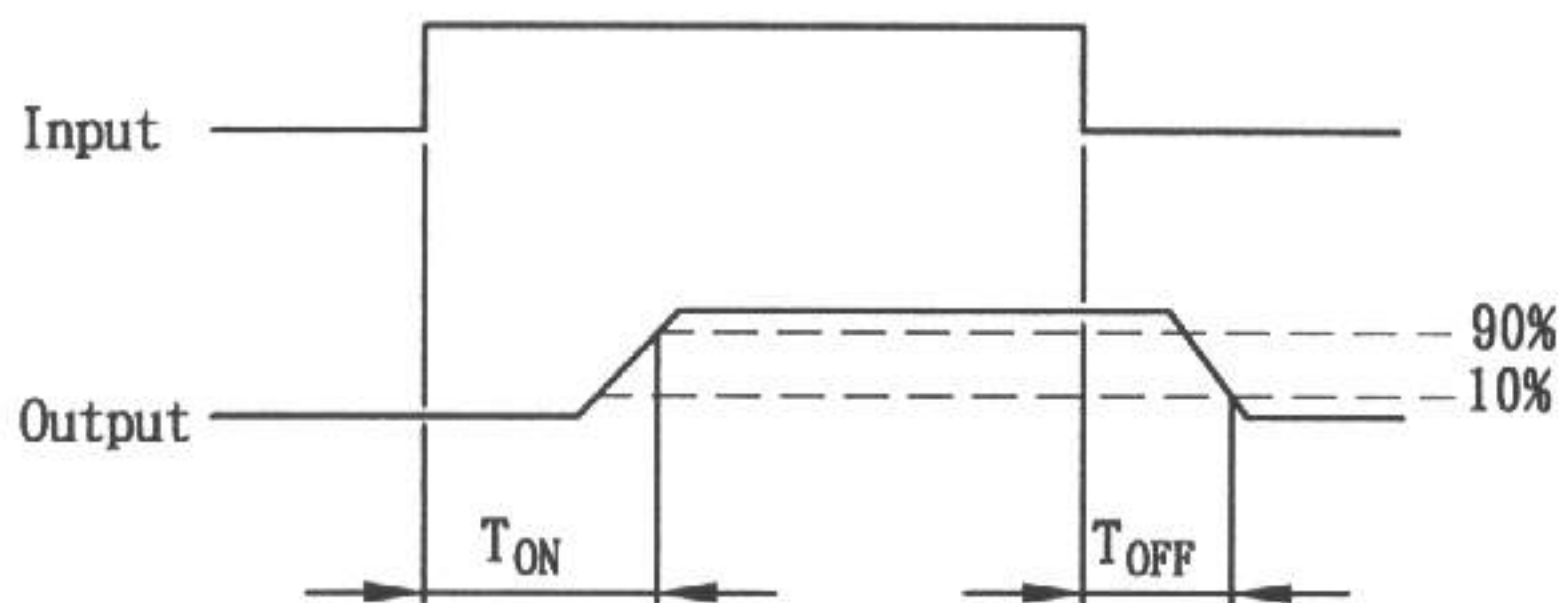
DATE: 10/07/2000

COSMO ELECTRONICS CO., LTD.	PHOTO MOS RELAYS: KAQV210S	NO. 62M10004	VER.
		SHEET 1 OF 7	1

• OUTSIDE DIMENSION :



• Turn on/Turn off time



Absolute Maximum Ratings ($T_A=25^\circ\text{C}$)

Emitter (Input)	
Reverse Voltage	5.0V
Continuous Forward Current	50mA
Peak Forward Current (1s)	1A
Power Dissipation	100mW
Derate Linearly from 25°C	1.3mW/ $^\circ\text{C}$
Detector (Output)	
Output Breakdown Voltage	± 350V
Continuous Load Current	± 130mA
Power Dissipation	500mW
General Characteristics	
Isolation Test Voltage	1500VAC _{RMS}
Isolation Resistance	
$V_{10}=500\text{V}, T_A=25^\circ\text{C}$	$\geq 10^{10}\Omega$
Total Power Dissipation	550mW

Derate Linearly from 25°C	2.5mW/ $^\circ\text{C}$
Storage Temperature Range	-40 to +150 $^\circ\text{C}$
Operating Temperature Range	-40 to +85 $^\circ\text{C}$
Junction Temperature	100 $^\circ\text{C}$
Soldering Temperature, 2mm from case, 10 sec.	260 $^\circ\text{C}$

ISSUE	CHECK	APPROVED
<i>Jerry Yu 10-07-00</i>	<i>Vincent Chuang 10-07-00</i>	<i>Stan Hsu 10-07-00</i>

PRODUCT SPECIFICATION

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Characteristics

(T_A=25° C)

Description	Symbol	Min.	Typ.	Max.	Unit	Test Condition	
Emitter (Input)							
Forward Voltage	V _F		1.2	1.5	V	I _F = 10mA	
Operation Input Current	I _{FON}			5	mA	V _L = ± 20V, I _L = 100mA, t = 10 ms	
Recovery Input Current	I _{FOFF}	0.2			mA	V _L = ± 20V, I _L = <5μA	
Detector (Output)							
Output Breakdown Voltage	V _B	350			V	I _B = 50μA	
Output Off-State Leakage	I _{T(OFF)}		0.2	1	μA	V _T = 100V, I _F = 0mA	
I/O Capacitance	C _{ISO}		6		pF	I _F = 0, f = 1MHz	
ON Resistance	Connection	A		20	30	Ω	I _L = 100mA, I _F = 10mA
		B		10	15		
		C		5	7.5		
Turn-on Time	T _{ON}		0.3	1.0	ms	I _F = 10mA, V _L = ± 20V	
Turn-off Time	T _{OFF}		0.7	1.5	ms	t = 10ms, I _L = ± 100mA	

Mos Relay Schematic and Wiring Diagrams

Type	Schematic	Output configuration	Load	Con-nection	Wiring diagram
KAQV210S		1a	AC/DC	A	
			DC	B	
DC	C				

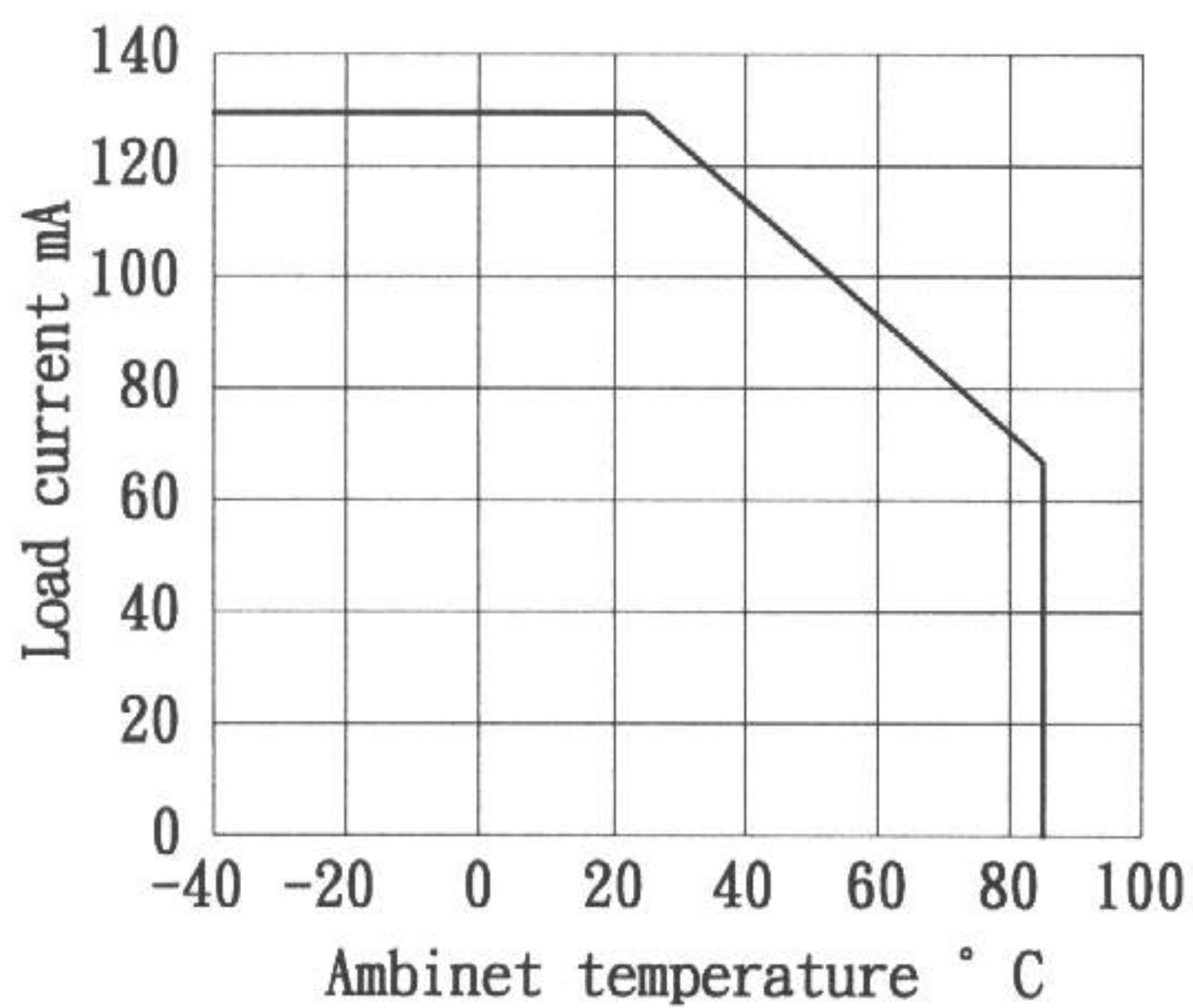
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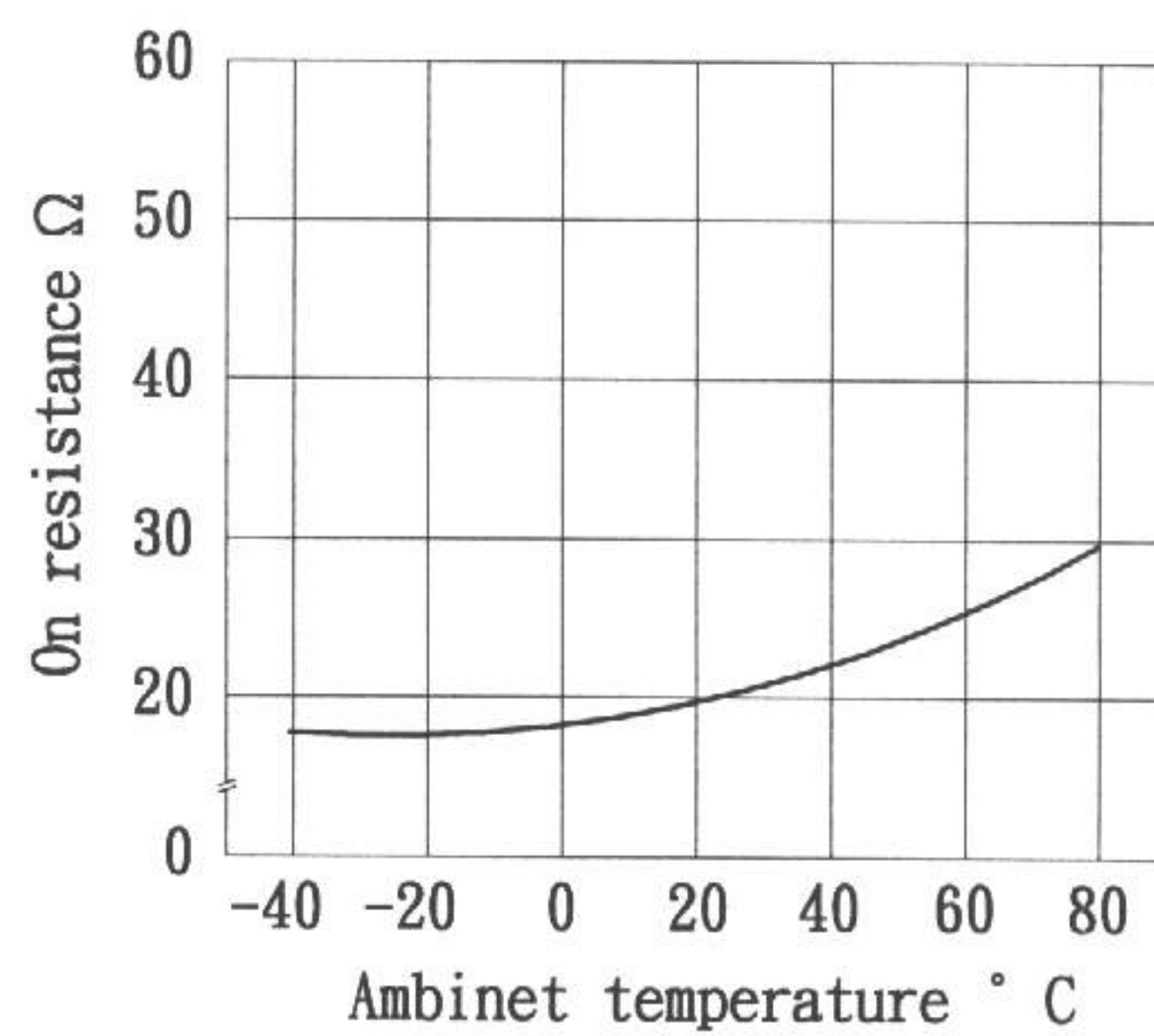
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		SHEET 3 OF 7	1

DATA CURVE

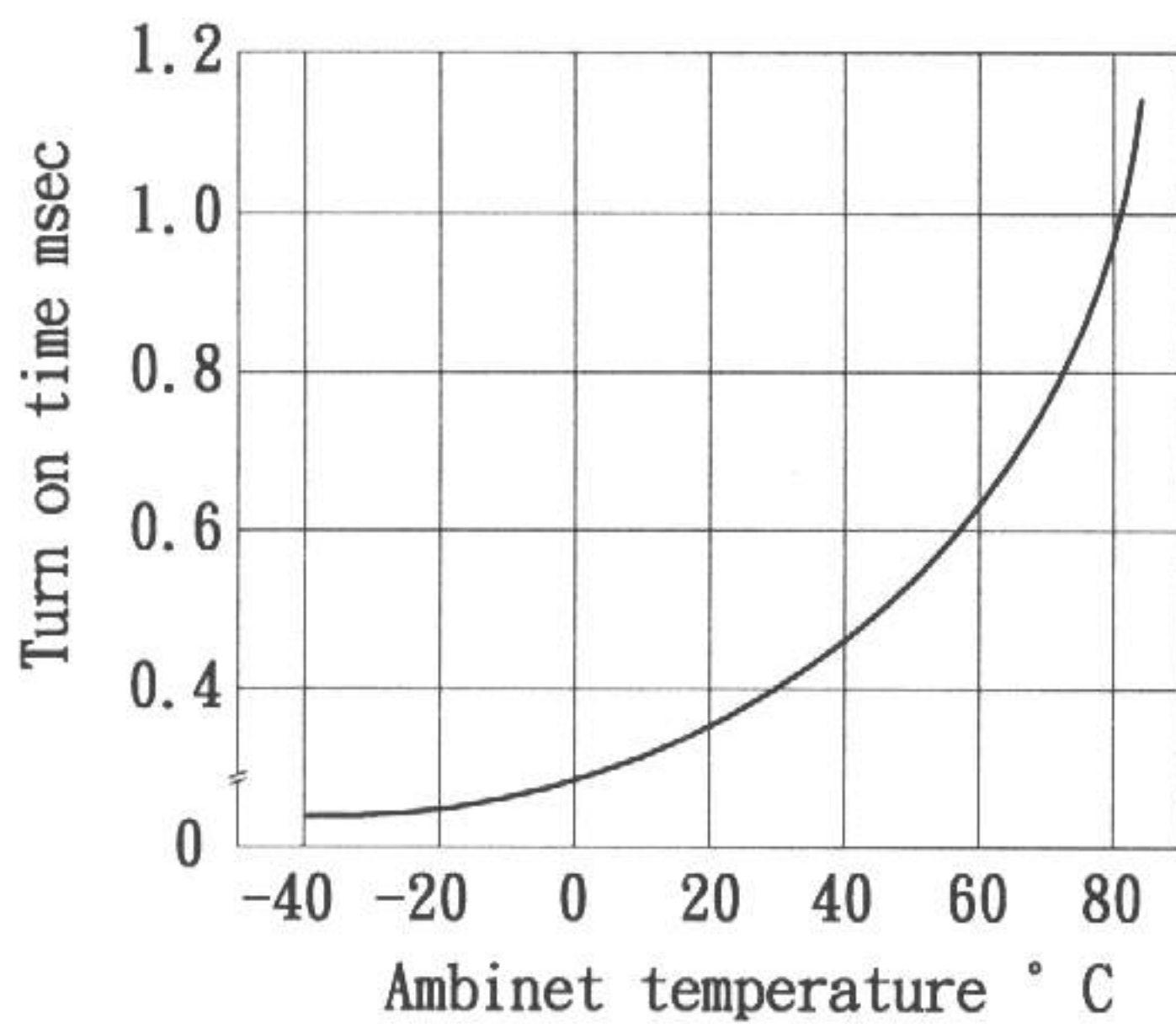
Load current vs. ambient temperature
 Allowable ambient temperature:
 -40°C to +85°C



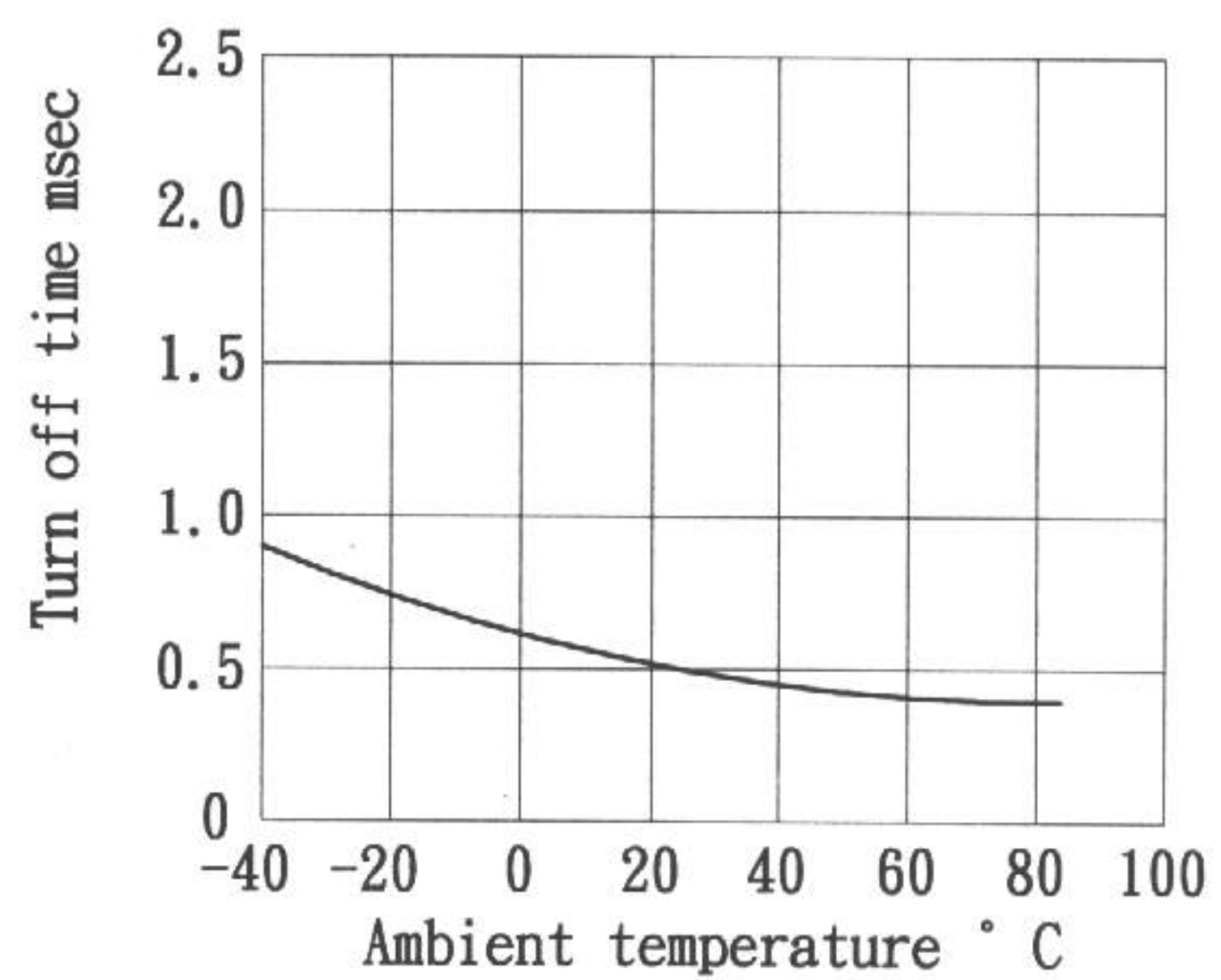
On resistance vs. ambient temperature
 Across terminals 4 and 6 pin
 LED current: 5mA
 Continuous load current: 130 mA(DC)



Turn on time vs. ambient temperature
 Load voltage 350 V(DC)
 LED current :5mA
 Continuous load current: 130mA(DC)



Turn off time vs. ambient temperature
 LED current: 5mA; Load voltage: 350V(DC)
 Continuous load current: 130mA(DC)

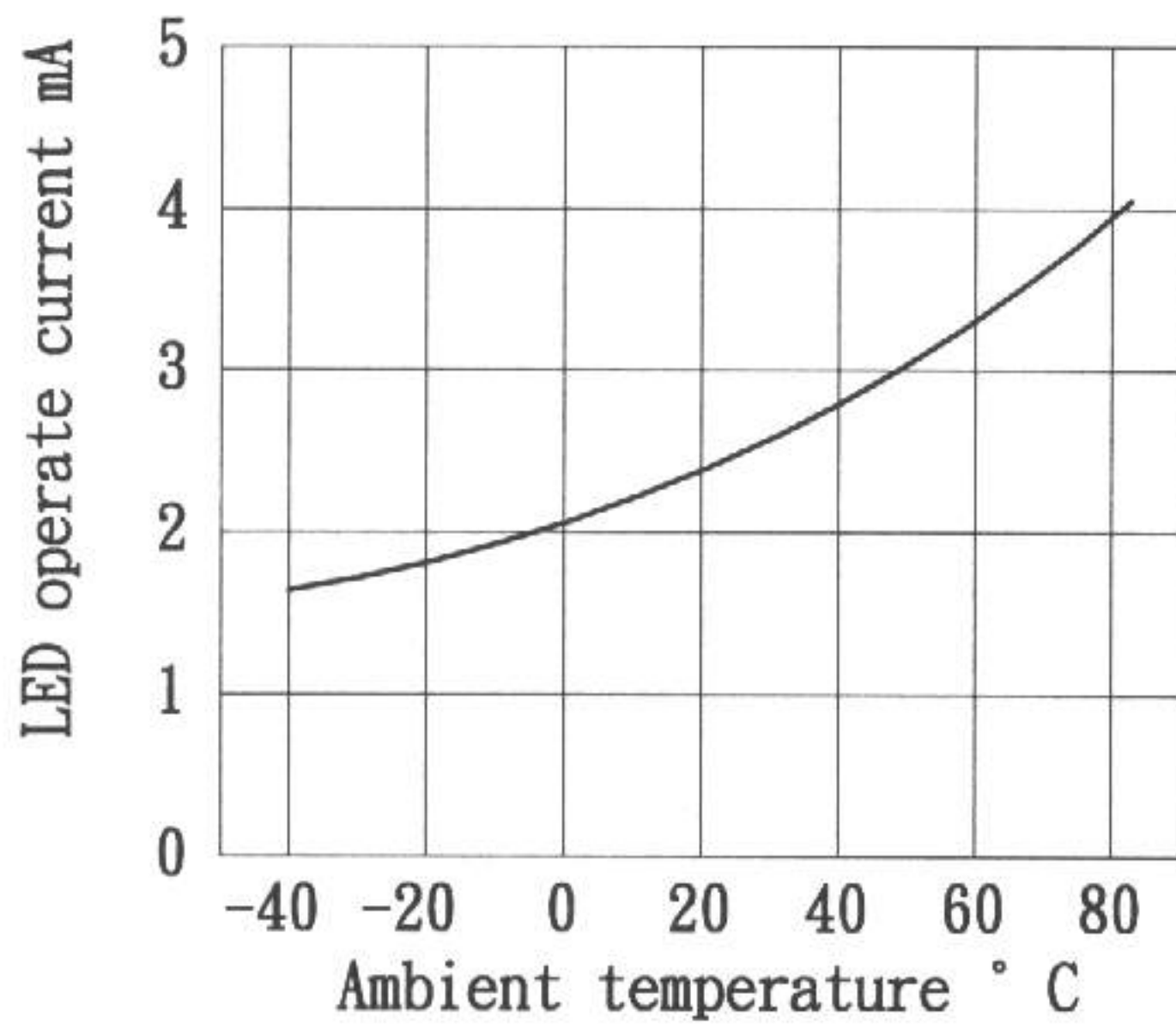


PRODUCT SPECIFICATION

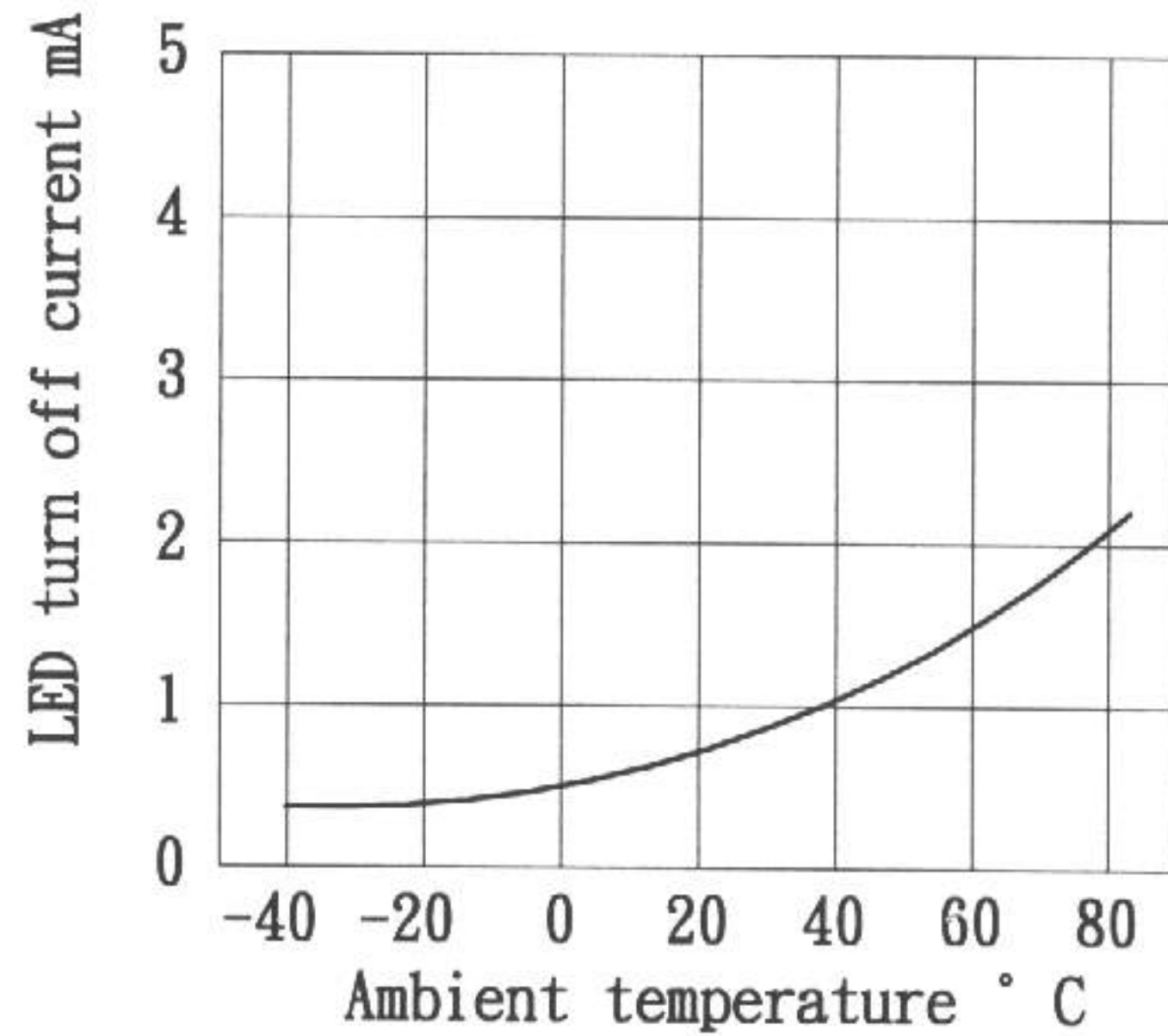
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		SHEET 4 OF 7	1

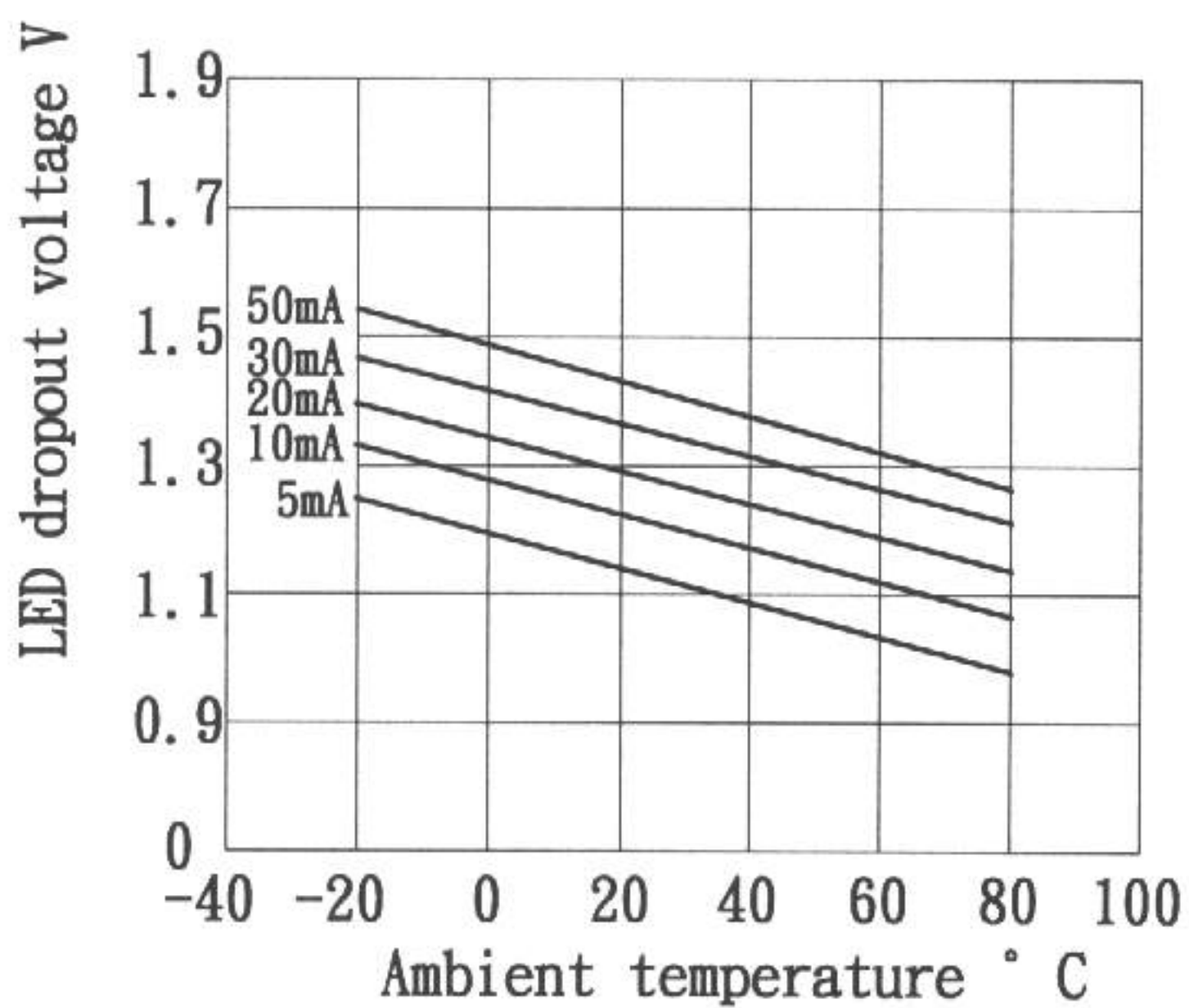
LED operate vs. ambient temperature
 Load voltage: 350V(DC)
 Continuous load current: 130mA(DC)



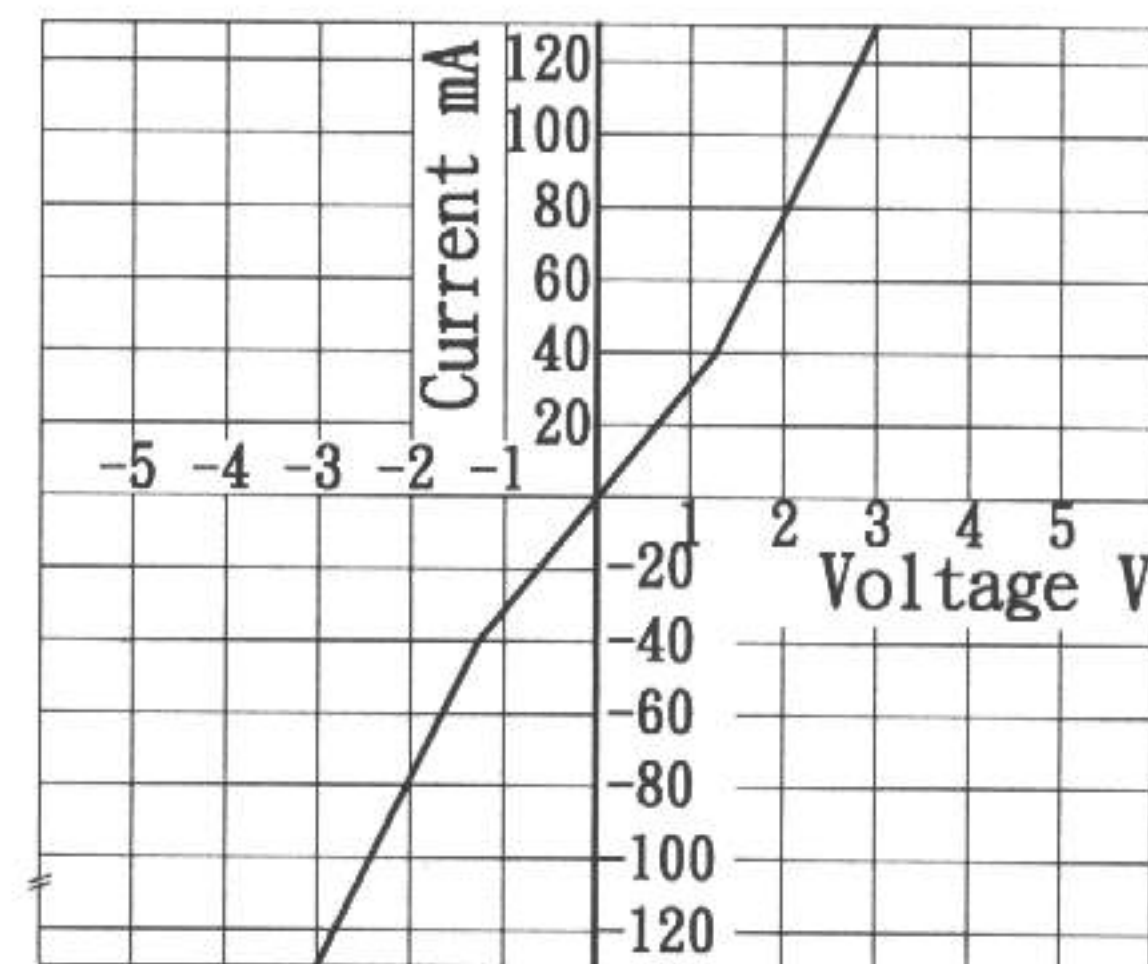
LED turn off current vs. ambient temperature
 Load voltage: 350V(DC)
 Continuous load current: 130mA(DC)



LED dropout voltage vs. ambient temperature
 LED current: 5 to 50mA



Voltage vs. current characteristics of output at MOS FET portion
 Measured portion: across terminals 4 and 6 pin
 Ambient temperature: 25°C

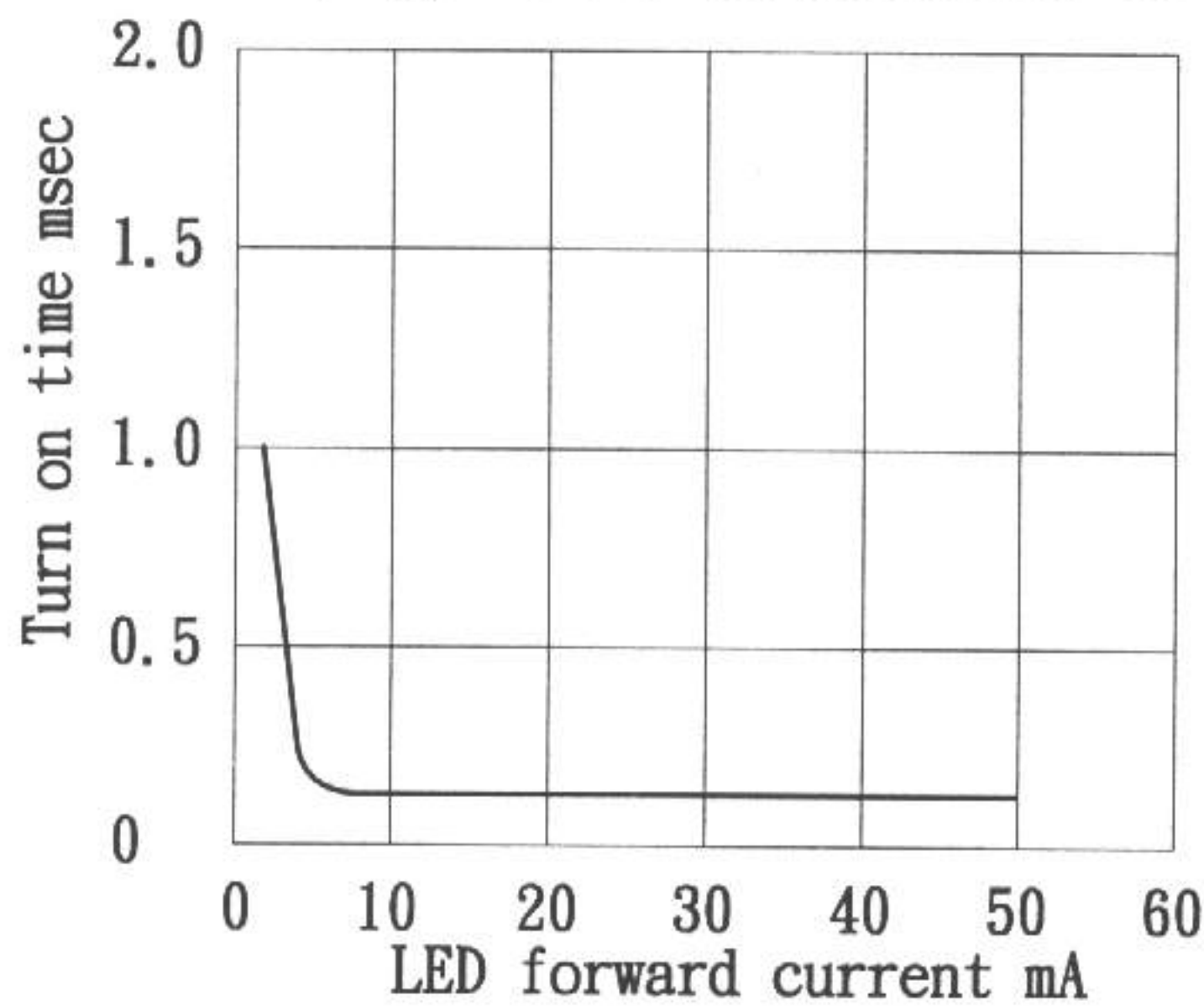


PRODUCT SPECIFICATION

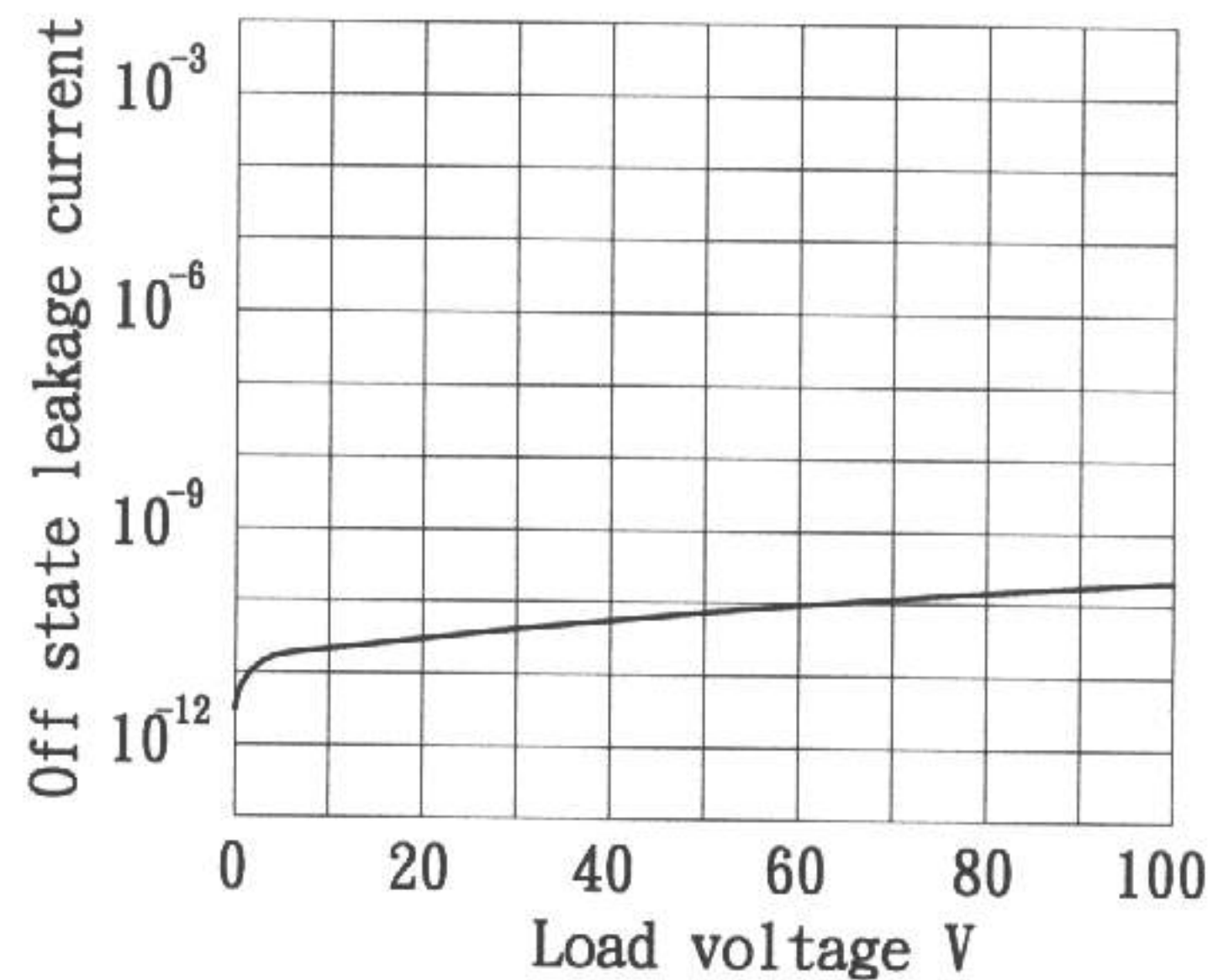
DATE: 10/07/2000

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		SHEET 5 OF 7	1

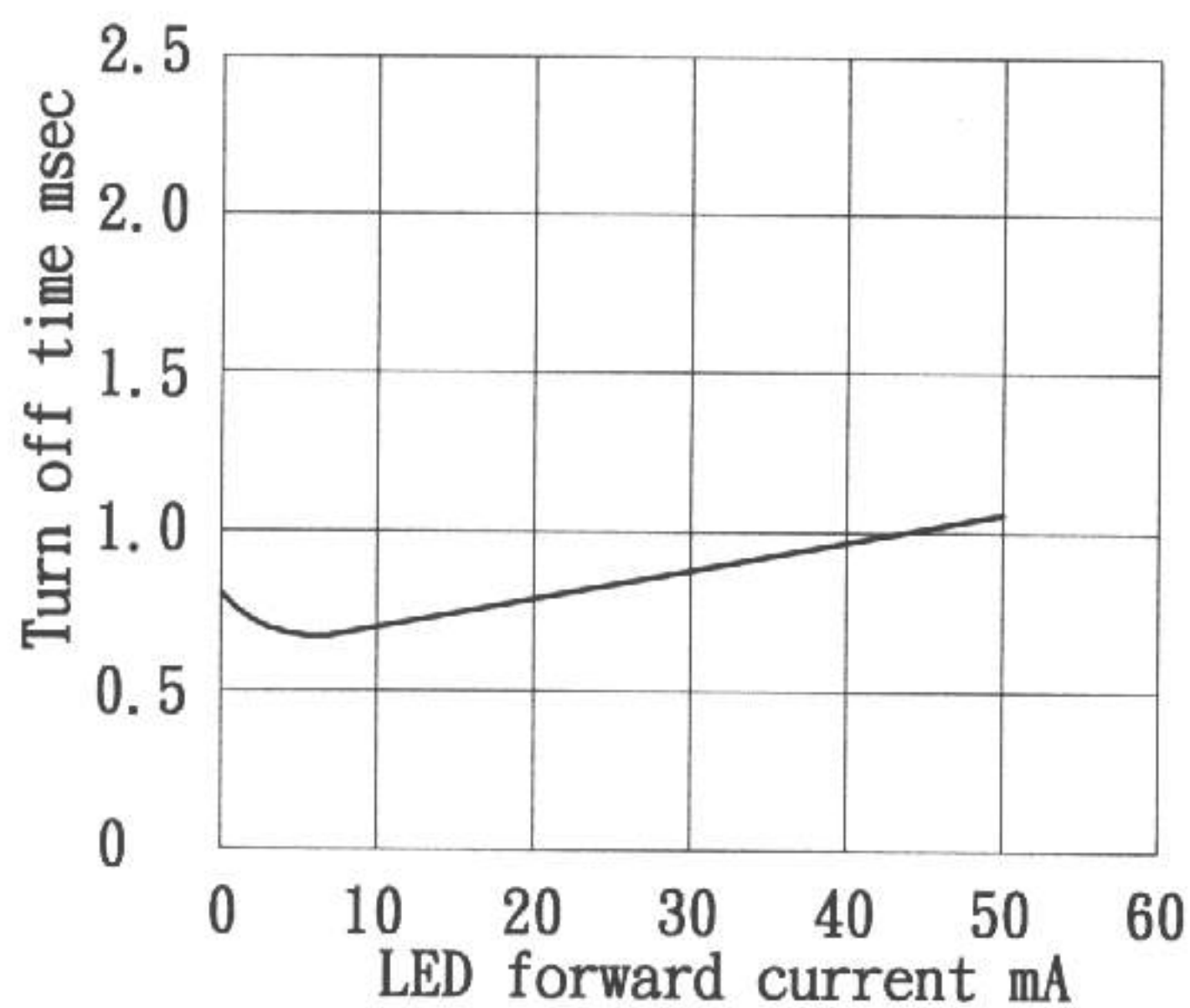
LED forward current vs. turn on time
 Across terminals 4 and 6pin; Load voltage: 350V(DC); Continuous load current: 130mA(DC); Ambient temperature: 25° C



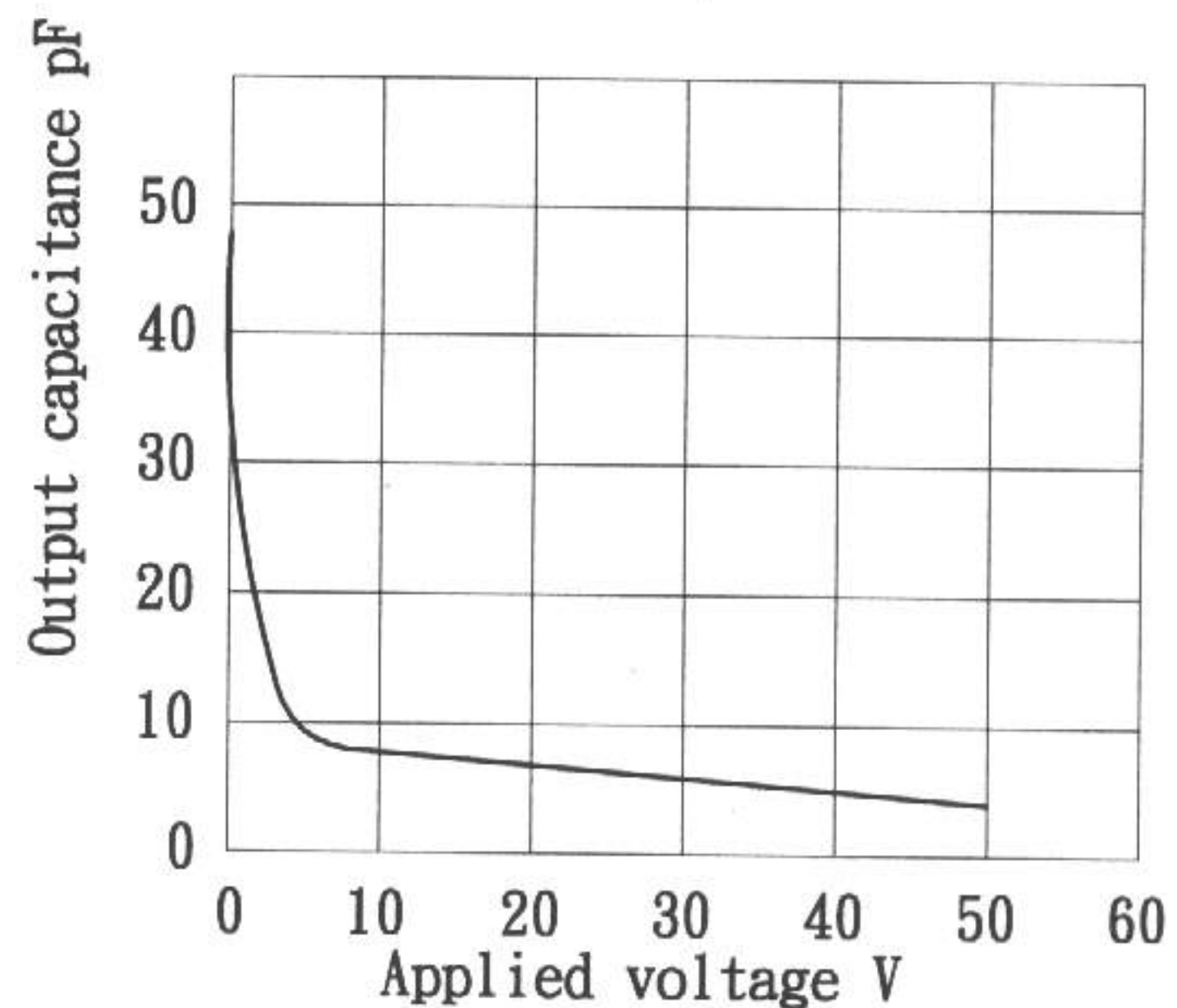
Off state leakage current
 Across terminals 4 and 6pin
 Ambient temperature: 25° C



LED forward current vs. turn off time
 Across terminals 4 and 6pin; Load voltage: 350V(DC); Continuous load current: 130 mA(DC); Ambient temperature: 25° C



Applied voltage vs. output capacitance
 Across terminals 4 and 6pin
 Frequency: 1MHz; Ambient temperature: 25° C



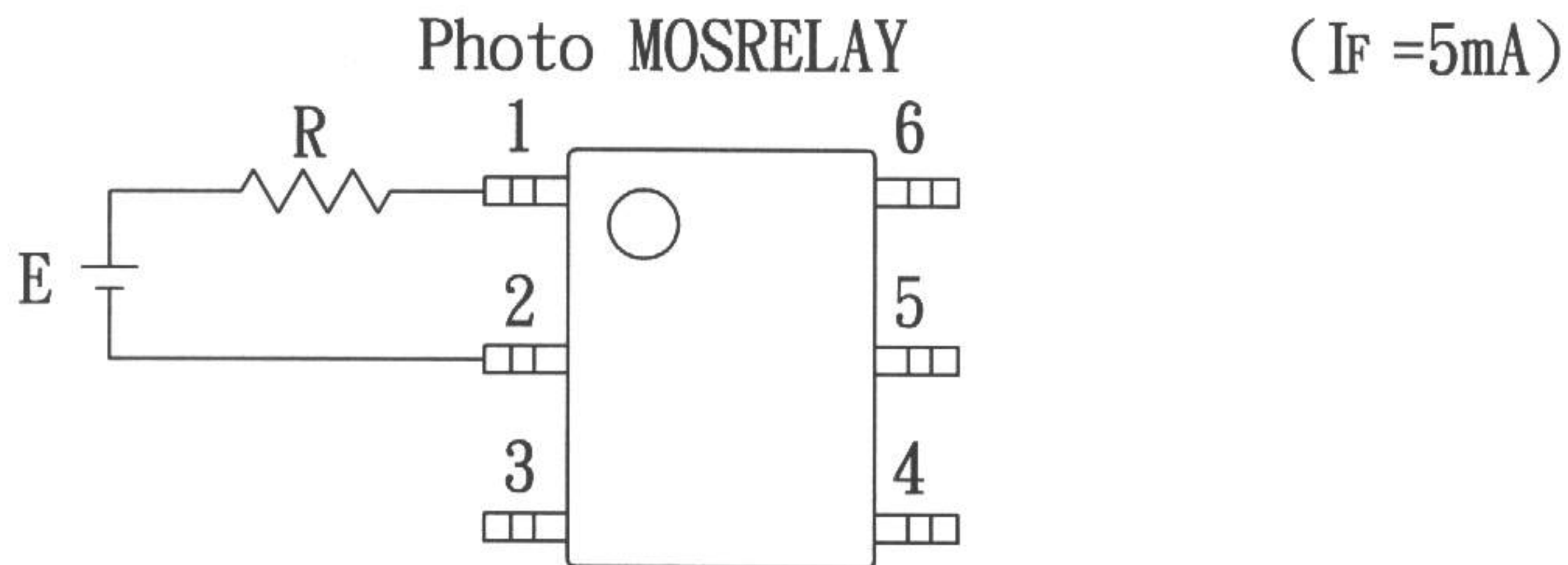
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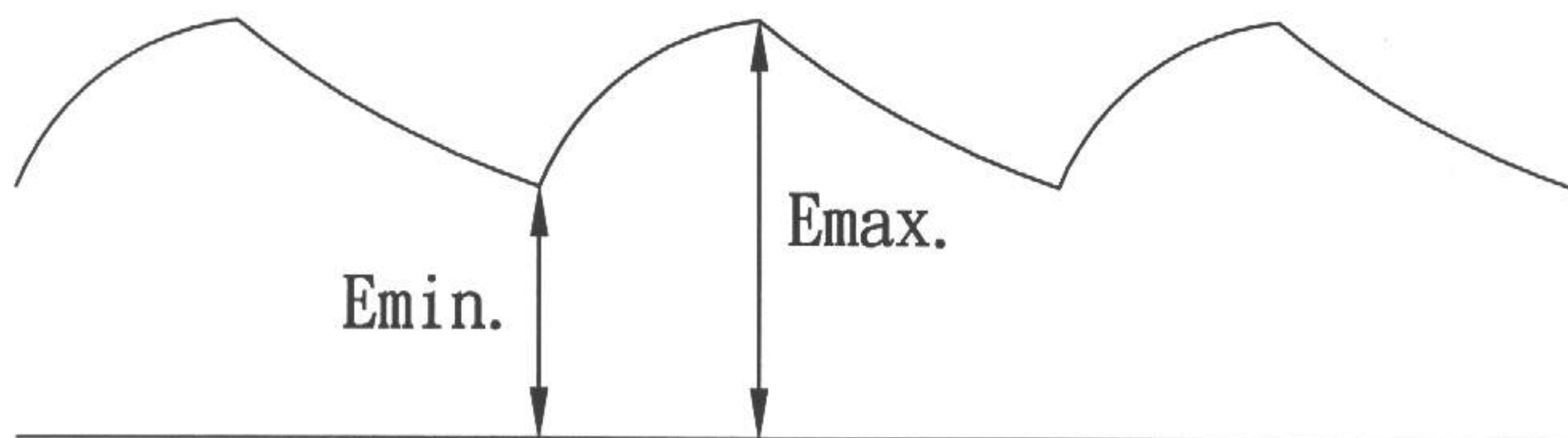
USING METHODS

Examples of resistance value to control LED forward current I_F



E	R
3.3V	Approx. 330 ohm
5V	Approx. 640 ohm
12V	Approx. 1.9K ohm
15V	Approx. 2.5K ohm
24V	Approx. 4.1K ohm

- (1) LED forward current must be more than 5mA, at E min.
- (2) LED forward current must be less than 50mA, at E max.



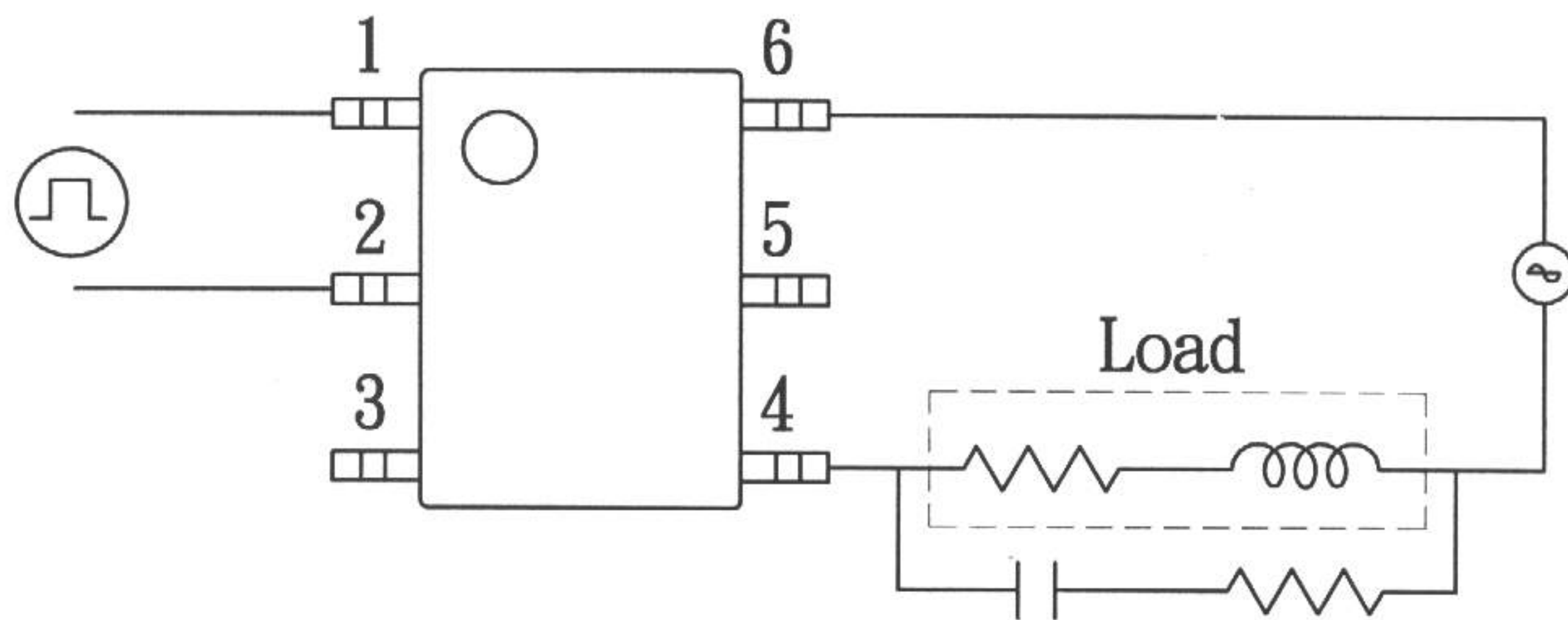
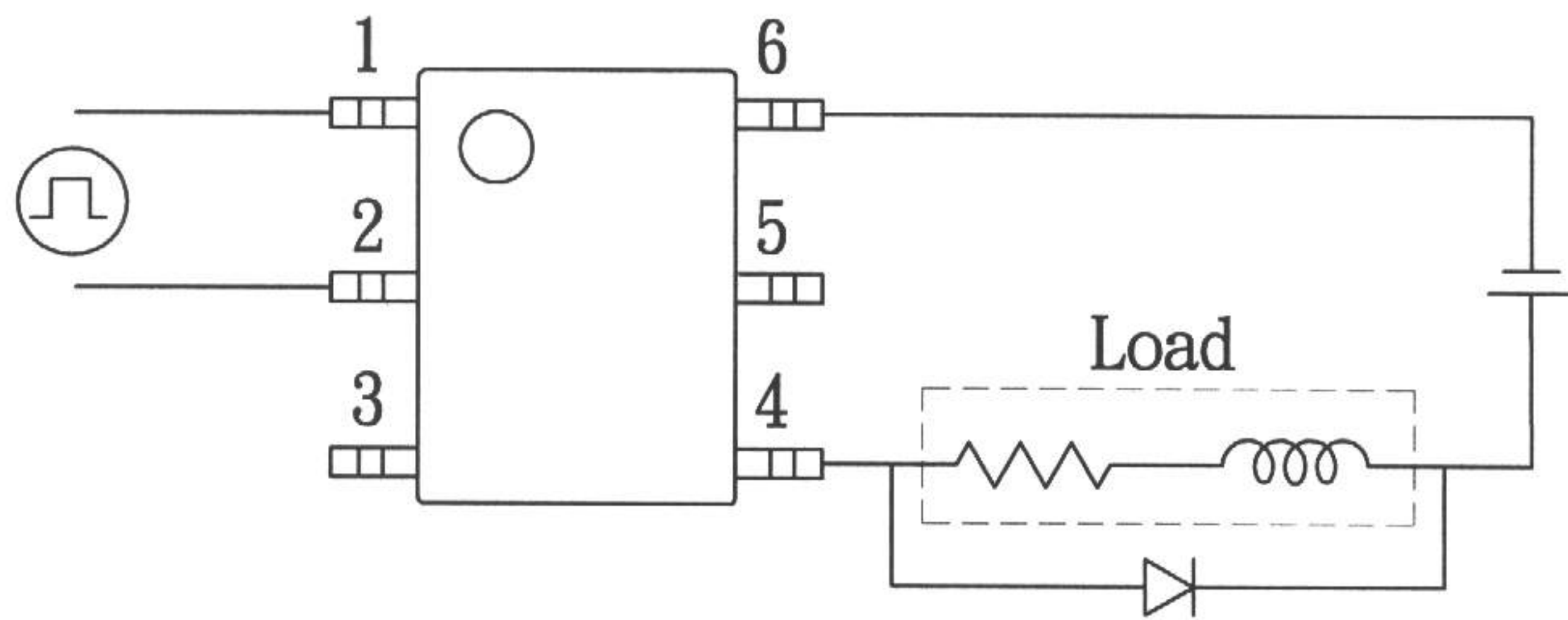
PRODUCT SPECIFICATION

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USING METHODS

Regulate the spike voltage generated on the inductive load as follows



R-C Snubber