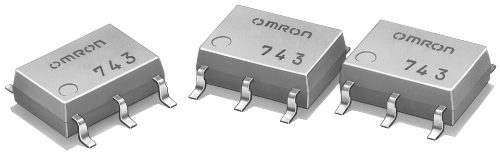
MOS FET Relays
G3VM-353H/H1

Analog-switching MOS FET Relay with SPST-NC (Single-pole, Single-throw, Normally Closed) Contacts. General-purpose Series Added.

- New models in 350 load voltage with SPST-NC contacts and a 6-pin SOP package. General-purpose (high On-Resistance) series added.
- Continuous load current of 120 mA.
- Dielectric strength of 1,500 Vrms between I/O.
- RoHS Compliant.



NEW

Note: The actual product is marked differently from the image shown here.

■ Application Examples

- Broadband systems
- Measurement devices and Data loggers
- Amusement machines

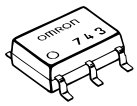
■ List of Models

Contact form	Terminals	Load voltage (peak value)	Model	Number per stick	Number per tape
SPST-NC	Surface-mounting terminals	350 VAC	**G3VM-353H**	75	---
			G3VM-353H1		
			G3VM-353H(TR)	---	2,500
			G3VM-353H1(TR)		

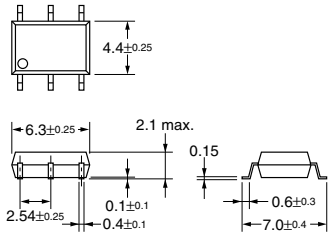
■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

G3VM-353H/H1



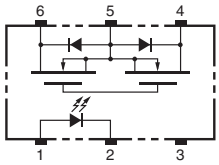
Note: The actual product is marked differently from the image shown here.



Weight: 0.13 g

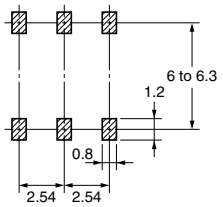
■ Terminal Arrangement/Internal Connections (Top View)

G3VM-353H/H1



■ Actual Mounting Pad Dimensions (Recommended Value, Top View)

G3VM-353H/H1



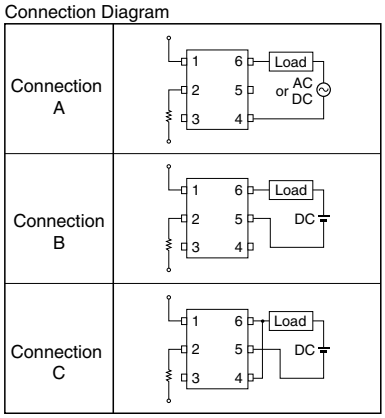
■ Absolute Maximum Ratings (Ta = 25°C)

Item			Symbol	Rating	Unit	Measurement conditions
Input	LED forward current		I_F	50	mA	
	Repetitive peak LED forward current		I_{FP}	1	A	100 μs pulses, 100 pps
	LED forward current reduction rate		ΔI_F/°C	–0.5	mA/°C	$T_a \geq 25$°C
	LED reverse voltage		V_R	5	V	
	Connection temperature		T_j	125	°C	
Output	Load voltage (AC peak/DC)		V_{OFF}	350	V	
	Continuous load current	Connection A	I_O	120 (90)	mA	
		Connection B		120 (90)		
		Connection C		240 (180)		
	ON current reduction rate	Connection A	ΔI_{ON}/°C	–1.2 (-0.9)	mA/°C	$T_a \geq 25$°C
		Connection B		–1.2 (-0.9)		
		Connection C		–2.4 (-1.8)		
	Connection temperature		T_j	125	°C	
Dielectric strength between input and output (See note 1.)			V_{I-O}	1,500	V_{rms}	AC for 1 min
Operating temperature			T_a	–40 to +85	°C	With no icing or condensation
Storage temperature			T_{stg}	–55 to +125	°C	With no icing or condensation
Soldering temperature (10 s)			---	260	°C	10 s

Values inside parentheses ( ) are for G3VM-353H1

Note: **1.** The dielectric strength between the input and output was checked by applying voltage between all pins as a group on the LED side and all pins as a group on the light-receiving side.

Connection Diagram

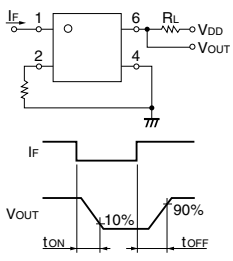


■ Electrical Characteristics (Ta = 25°C)

Item			Symbol	Minimum	Typical	Maximum	Unit	Measurement conditions
Input	LED forward voltage		V_F	1.0	1.15	1.3	V	I_F = 10 mA
	Reverse current		I_R	---	---	10	μA	V_R = 5 V
	Capacity between terminals		C_T	---	30	---	pF	V = 0, f = 1 MHz
	Trigger LED forward current		I_{FT}	---	1.0	3.0	mA	I_{OFF} = 10 μA
Output	Maximum resistance with output ON	Connection A	R_{ON}	---	15 (27)	25 (50)	Ω	I_O = 120 mA
		Connection B		---	8 (20)	14 (43)	Ω	I_O = 120 mA
		Connection C		---	4 (10)	---	Ω	I_O = 240 mA
	Current leakage when the relay is open		I_{LEAK}	---	0.0105 (0.003)	1.0	μA	V_{OFF} = 350 V, I_F = 5 mA
	Capacity between terminals A Connection		C_{OFF}	---	65 (30)	---	pF	V = 0, f = 1(100) MHz, I_F = 5 mA
Capacity between I/O terminals			C_{I-O}	---	0.8	---	pF	f = 1 MHz, V_s = 0 V
Insulation resistance			R_{I-O}	1,000	---	---	MΩ	V_{I-O} = 500 VDC, $R_{oH} \leq 60\%$
Turn-ON time			t_{ON}	---	0.15 (0.25)	1.0 (0.5)	ms	I_F = 5 mA, R_L = 200 Ω, V_{DD} = 20 V (See note 2.)
Turn-OFF time			t_{OFF}	---	0.7 (0.5)	3.0 (1)	ms	

Values inside parentheses ( ) are for G3VM-353H1

Note: **2.** Turn-ON and Turn-OFF Times



■ Recommended Operating Conditions

Use the G3VM under the following conditions so that the Relay will operate properly.

Item	Symbol	Minimum	Typical	Maximum	Unit
Load voltage (AC peak/DC)	V_{DD}	---	---	280	V
Operating LED forward current	I_F	5	---	25	mA
Continuous load current (AC peak/DC)	I_O	---	---	120 (90)	mA
Operating temperature	T_a	– 20	---	65	°C

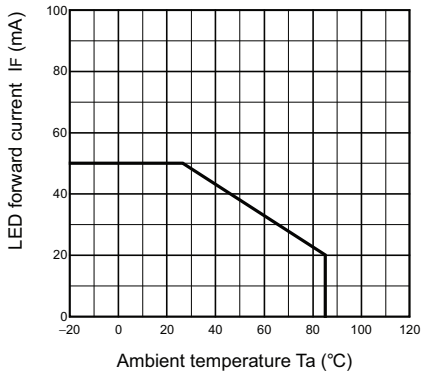
Values inside parentheses ( ) are for G3VM-353H1

■ Engineering Data

G3VM-353H

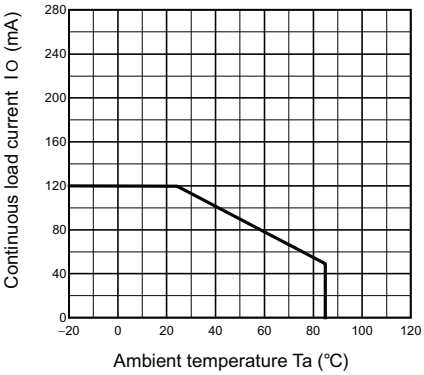
LED forward current vs. Ambient temperature

IF - Ta



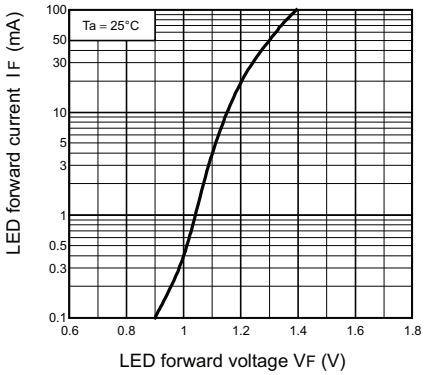
Continuous load current vs. Ambient temperature

IO - Ta



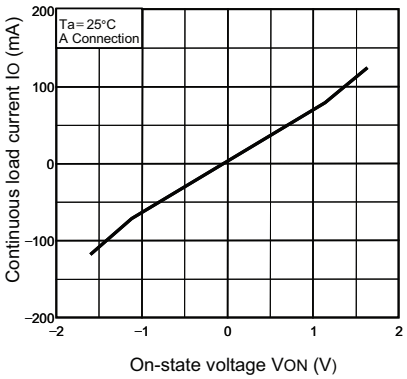
LED forward current vs. LED forward voltage

IF - VF



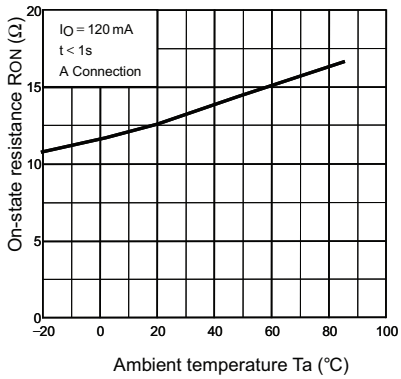
Continuous load current vs. On-state voltage

IO - VON



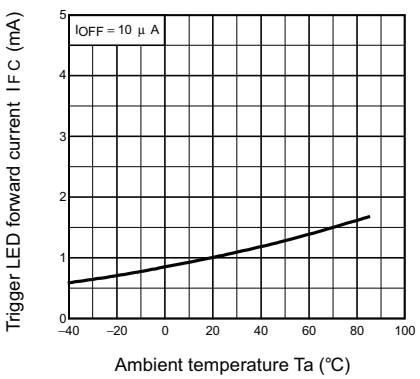
On-state resistance vs. Ambient temperature

RON - Ta



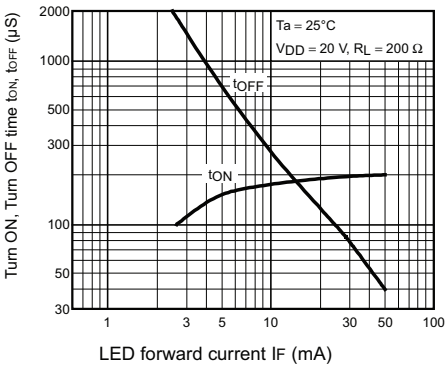
Trigger LED forward current vs. Ambient temperature

IFC - Ta



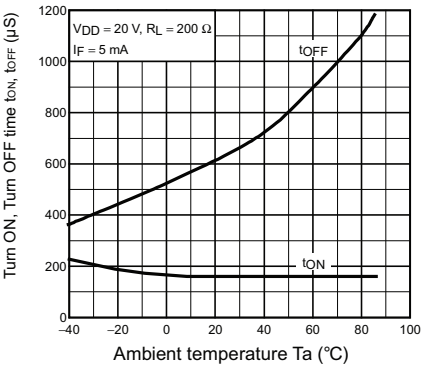
Turn ON, Turn OFF time vs. LED forward current

tON, tOFF - IF



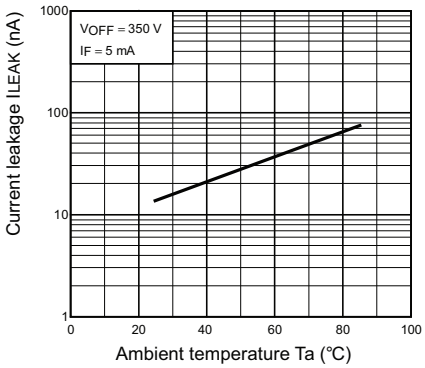
Turn ON, Turn OFF time vs. Ambient temperature

tON, tOFF - Ta



Current leakage vs. Ambient temperature

I LEAK - Ta

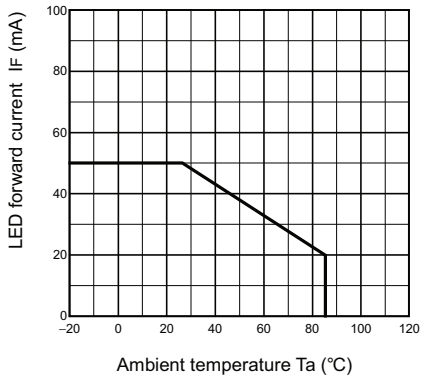


■ Engineering Data

G3VM-353H1

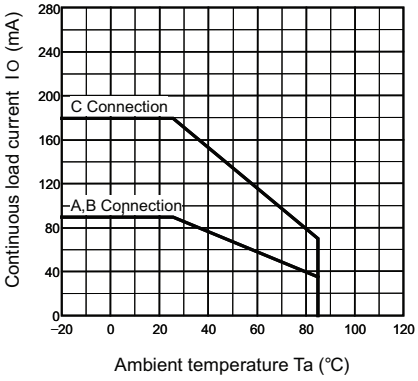
LED forward current vs. Ambient temperature

IF - Ta



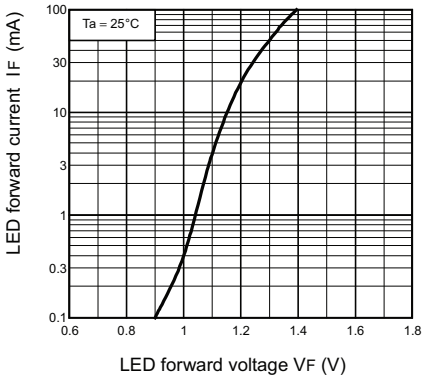
Continuous load current vs. Ambient temperature

IO - Ta



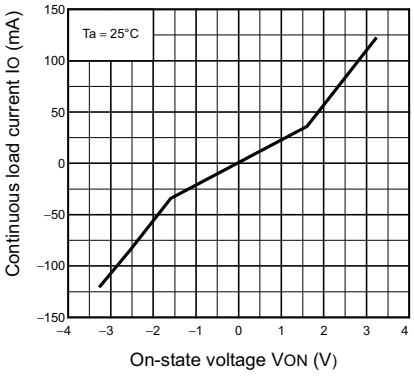
LED forward current vs. LED forward voltage

IF - VF



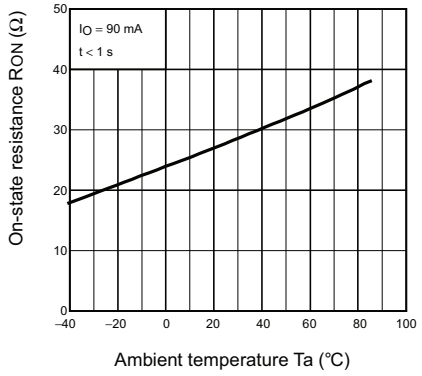
Continuous load current vs. On-state voltage

IO - VON



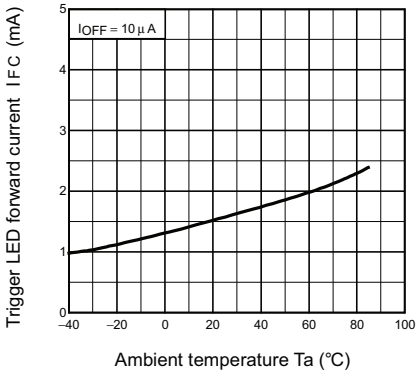
On-state resistance vs. Ambient temperature

RON - Ta



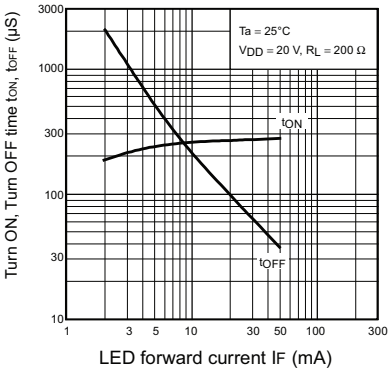
Trigger LED forward current vs. Ambient temperature

IFC - Ta



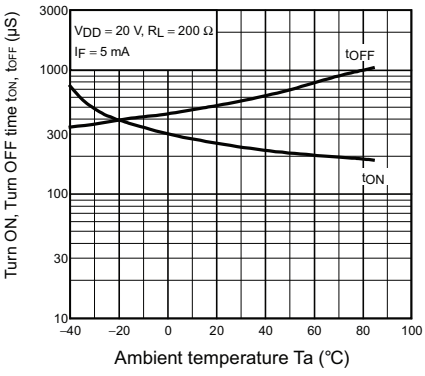
Turn ON, Turn OFF time vs. LED forward current

tON, tOFF - IF



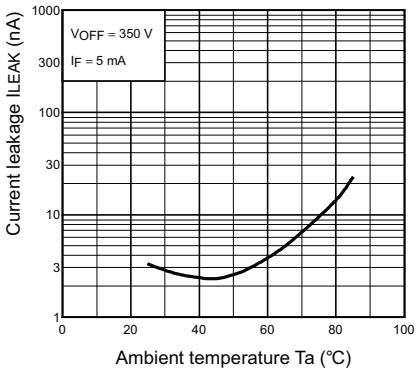
Turn ON, Turn OFF time vs. Ambient temperature

tON, tOFF - Ta

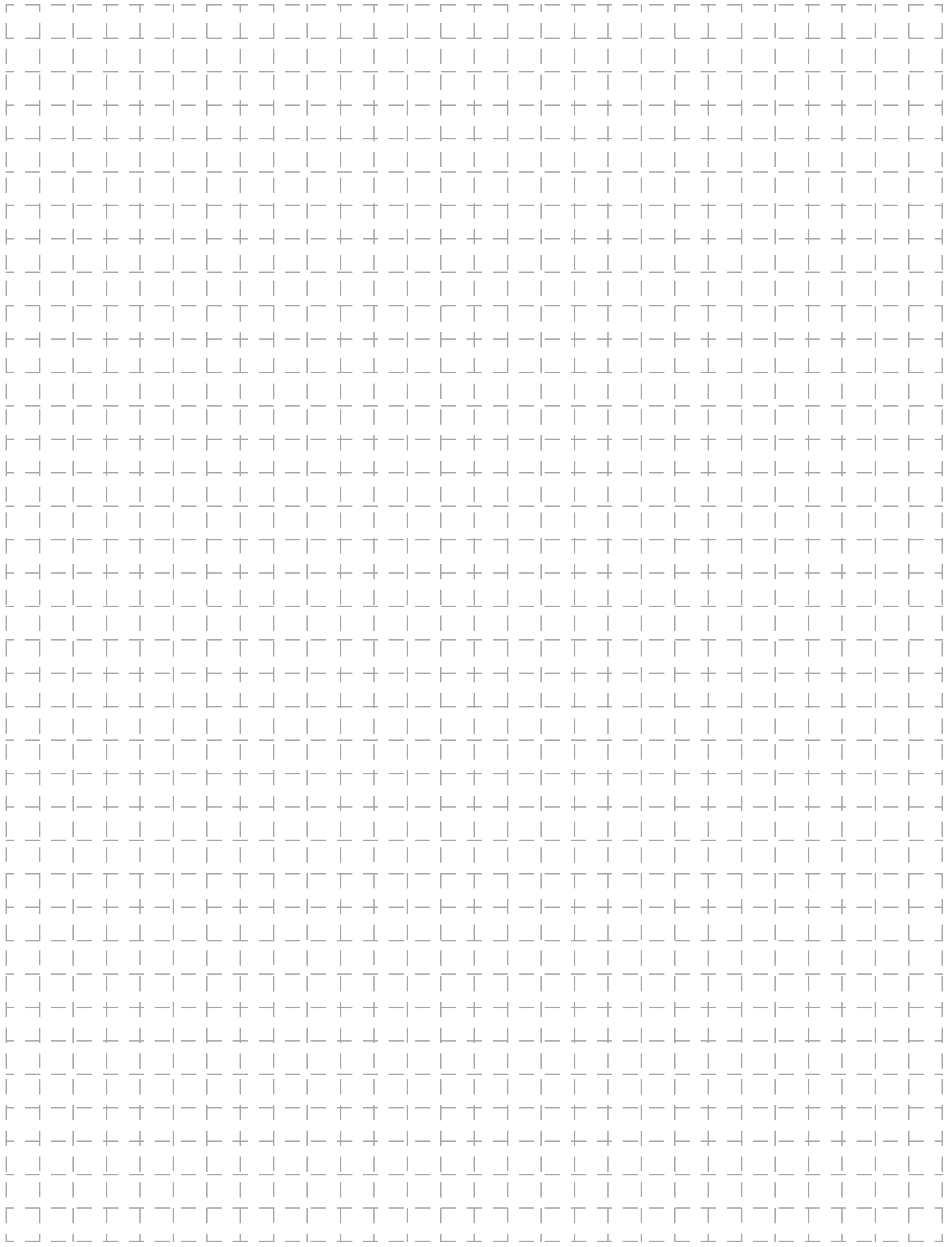


Current leakage vs. Ambient temperature

I LEAK - Ta



MEMO



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

OMRON ELECTRONIC COMPONENTS LLC
55 E. Commerce Drive, Suite B
Schaumburg, IL 60173
847-882-2288

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