

## FEATURES

### 1. High capacity type power photoMOS relay.

Can switch a wide range of currents and voltages. Can control various types of loads, from very small loads to a max. 6A AC/DC current for sequencers, motors, and lamps.

### 2. Low on-resistance and high sensitivity.

Low on-resistance of less than typ.  $0.036\Omega$  (AQZ262). High sensitivity LED operate current of typ. 1 mA.

### 3. AC/DC dual use

Bi-directional control is possible. There is no need to differentiate depending on the load as was necessary with the conventional SSR.

### 4. 4-pin SIL type

(L) 43.0 mm  $\times$  (W) 9.0 mm  $\times$  (H) 32.0 mm  
(L) 1.693 inch  $\times$  (W) .354 inch  $\times$  (H) 1.260 inch.

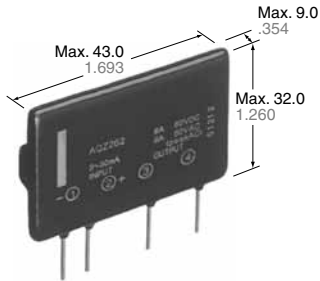
### 5. Low-level off state leakage current of max. 10 $\mu$ A

### 6. Controls low-level analog signals

The triac, photocoupler, or SSR cannot be used to control signals of less than several hundred mV. The high capacity type power PhotoMOS relay feature extremely low closed-circuit offset voltage to enable control of low-level analog signals without distortion.

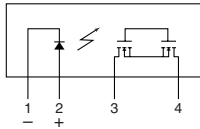
## TYPICAL APPLICATIONS

- Mercury relay replacement
- Compact motors, lamps, heaters
- OA equipment



(Height includes)  
standoff

mm inch



Compliance with RoHS Directive

## TYPES

	Output rating*		Package	Part No.	Packing quantity	
	Load voltage	Load current			Inner carton	Outer carton
AC/DC dual use	60 V	6.0 A	SIL4-pin	AQZ262	20 pcs	200 pcs
	400 V	1.0 A		AQZ264		

\* Indicate the peak AC and DC values.

## RATING

### 1. Absolute maximum ratings (Ambient temperature: 25°C 77°F)

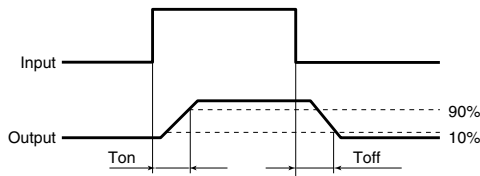
Item		Symbol	AQZ262	AQZ264	Remarks
Input	LED forward current	$I_F$	50 mA		
	LED reverse voltage	$V_R$	5 V		
	Peak forward current	$I_{FP}$	1 A		$f = 100\text{Hz}$ , Duty factor = 0.1%
	Power dissipation	$P_{in}$	75 mW		
Output	Load voltage (peak AC)	$V_L$	60 V	400 V	
	Continuous load current	$I_L$	6.0 A	1.0 A	Peak AC, DC
	Peak load current	$I_{peak}$	10.0 A	3.0 A	100 ms (1shot), $V_L = \text{DC}$
	Power dissipation	$P_{out}$	3.0 W		
Total power dissipation		$P_T$	3.0 W		
I/O isolation voltage		$V_{iso}$	1,500 V AC		
Temperature limits	Operating	$T_{opr}$	-40°C to +85°C -40°F to 185°F		Non-condensing at low temperatures
	Storage	$T_{stg}$	-40°C to +100°C -40°F to 212°F		

# Power 1 Form A High Capacity (AQZ26○)

## 2. Electrical characteristics (Ambient temperature: 25°C 77°F)

Item			Symbol	AQZ262	AQZ264	Remarks
Input	LED operate current	Typical	$I_{Fon}$	1.0 mA		$I_L = 100 \text{ mA}$ $V_L = 10 \text{ V}$
		Maximum		3.0 mA		
	LED turn off current	Minimum	$I_{Foff}$	0.4 mA		$I_L = 100 \text{ mA}$ $V_L = 10 \text{ V}$
		Typical		0.9 mA		
LED dropout voltage	Typical	$V_F$	1.25 V (1.16 V at $I_F = 10 \text{ mA}$ )		$I_F = 50 \text{ mA}$	
	Maximum		1.5 V			
Output	On resistance	Typical	$R_{on}$	0.036 $\Omega$	1.0 $\Omega$	$I_F = 10 \text{ mA}$ $I_L = \text{max.}$ Within 1 s on time
		Maximum		0.05 $\Omega$	1.4 $\Omega$	
	Off state leakage current	Maximum	$I_{Leak}$	10 $\mu\text{A}$		$I_F = 0 \text{ mA}$ $V_L = \text{max.}$
Transfer characteristics	Turn on time*	Typical	$T_{on}$	5 ms	4 ms	$I_F = 10 \text{ mA}$ $I_L = 100 \text{ mA}$ $V_L = 10 \text{ V}$
		Maximum		10 ms		
	Turn off time*	Typical	$T_{off}$	0.32 ms	0.14 ms	$I_F = 10 \text{ mA}$ $I_L = 100 \text{ mA}$ $V_L = 10 \text{ V}$
		Maximum		3.0 ms		
	I/O capacitance	Typical	$C_{iso}$	2.0 pF		$f = 1 \text{ MHz}$ $V_B = 0 \text{ V}$
		Maximum		4.0 pF		
Initial I/O isolation resistance	Minimum	$R_{iso}$	1,000 M $\Omega$		500 V DC	
Maximum operating frequency	Maximum	—	0.5 cps		$I_F = 10 \text{ mA}$ Duty factor = 50% $I_L = \text{Max.}, V_L = \text{Max.}$	

\*Turn on/off time



## RECOMMENDED OPERATING CONDITIONS

Please obey the following conditions to ensure proper relay operation and resetting.

Item	Symbol	Recommended value	Unit
Input LED current	$I_F$	5 to 10	mA

- For Dimensions.
- For Schematic and Wiring Diagrams.
- For Cautions for Use.

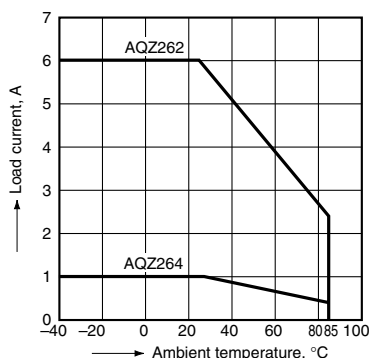
■ These products are not designed for automotive use.

If you are considering to use these products for automotive applications, please contact your local Panasonic Electric Works technical representative.  
For more information.

## REFERENCE DATA

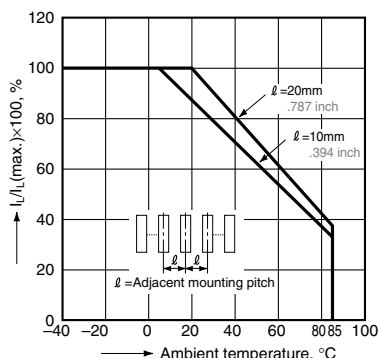
1. Load current vs. ambient temperature characteristics

Allowable ambient temperature:  $-40^\circ\text{C}$  to  $+85^\circ\text{C}$   
 $-40^\circ\text{F}$  to  $+185^\circ\text{F}$



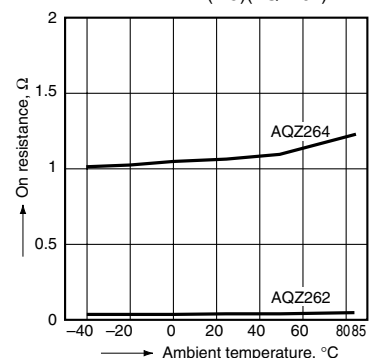
2. Load current vs. ambient temperature characteristics in adjacent mounting

$I_L$ : Load current;  
 $I_L(\text{max.})$ : Maximum continuous load current



3. On resistance vs. ambient temperature characteristics

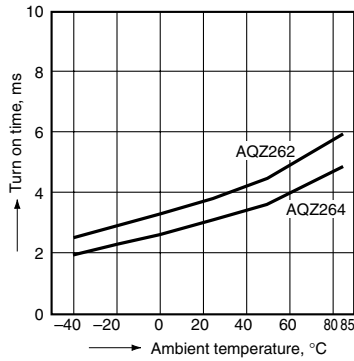
LED current: 10 mA;  
Continuous load current: 6A (DC)(AQZ262)  
1A (DC)(AQZ264)



# Power 1 Form A High Capacity (AQZ26○)

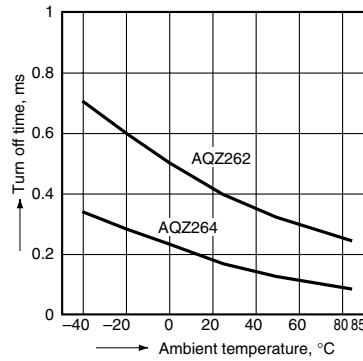
## 4. Turn on time vs. ambient temperature characteristics

LED current: 10 mA; Load voltage: 10 V (DC);  
Continuous load current: 100 mA (DC)



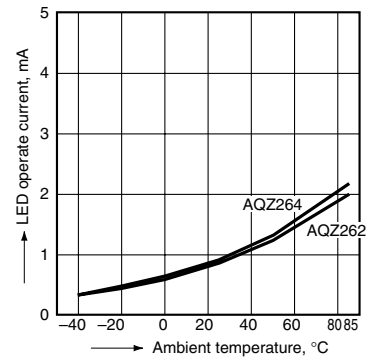
## 5. Turn off time vs. ambient temperature characteristics

LED current: 10 mA; Load voltage: 10 V (DC);  
Continuous load current: 100 mA (DC)



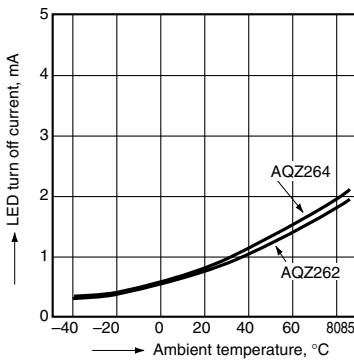
## 6. LED operate vs. ambient temperature characteristics

Load voltage: 10 V (DC);  
Continuous load current: 100 mA (DC)



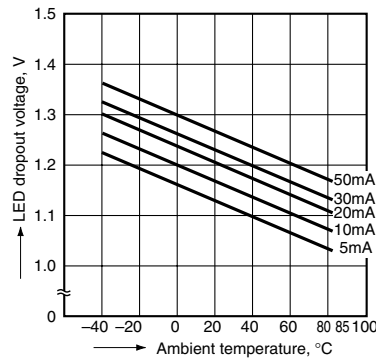
## 7. LED turn off current vs. ambient temperature characteristics

Load voltage: 10 V (DC);  
Continuous load current: 100 mA (DC)



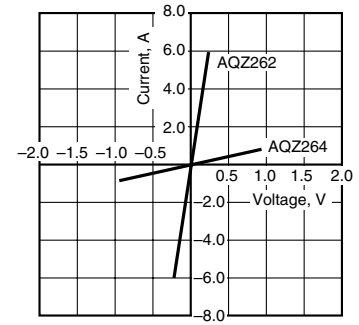
## 8. LED dropout voltage vs. ambient temperature characteristics

Sample: all types; LED current: 5 to 50 mA



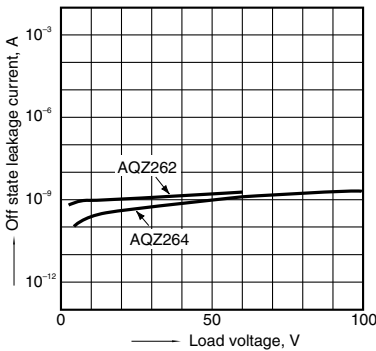
## 9. Current vs. voltage characteristics of output at MOS portion

Ambient temperature: 25°C 77°F



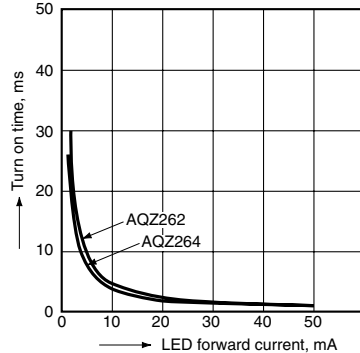
## 10. Off state leakage current vs. load voltage characteristics

Ambient temperature: 25°C 77°F



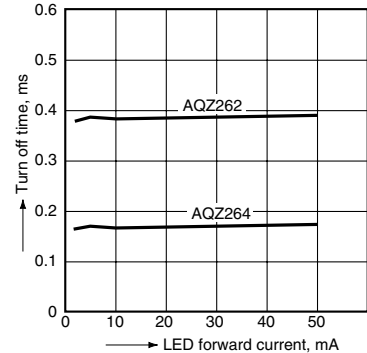
## 11. Turn on time vs. LED forward current characteristics

Load voltage: 10 V (DC); Continuous load current: 100 mA (DC); Ambient temperature: 25°C 77°F



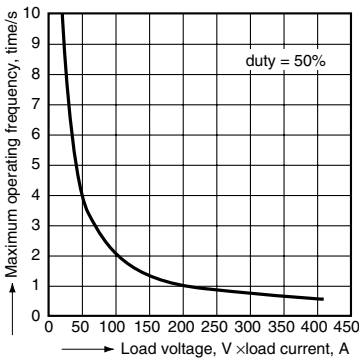
## 12. Turn off time vs. LED forward current characteristics

Load voltage: 10 V (DC); Continuous load current: 100 mA (DC); Ambient temperature: 25°C 77°F



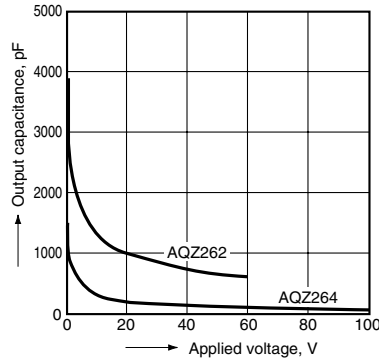
## 13. Maximum operating frequency vs. load voltage/current characteristics

LED current: 10 mA; Ambient temperature: 25°C 77°F



## 14. Output capacitance vs. applied voltage characteristics

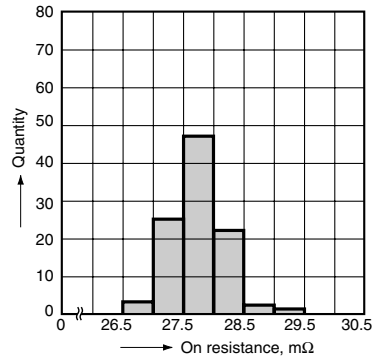
Frequency: 10 KHz; Ambient temperature: 25°C 77°F



## 15.-(1) On resistance distribution

Sample: AQZ262

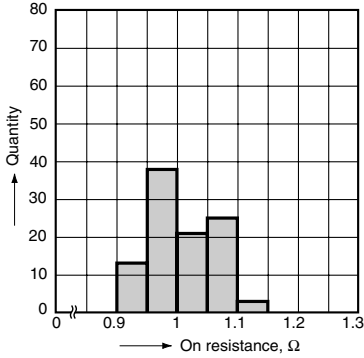
LED current: 10 mA; Continuous load current: 6 A (DC);  
Quantity: n=100; Ambient temperature: 25°C 77°F



# Power 1 Form A High Capacity (AQZ26○)

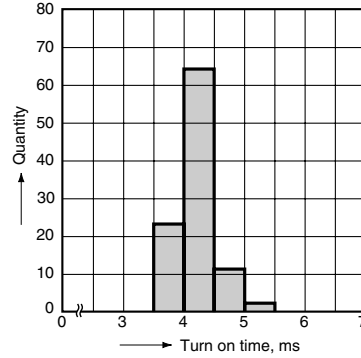
15.-(2) On resistance distribution

Sample: AQZ264  
LED current: 10 mA;  
Continuous load current: 1 A (DC); Quantity, n=100;  
Ambient temperature: 25°C 77°F



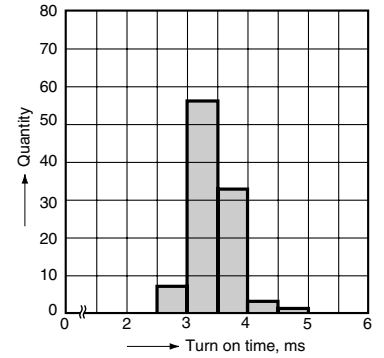
16.-(1) Turn on time distribution

Sample: AQZ262  
Load voltage: 10 V (DC); Continuous load current:  
100 mA (DC); Quantity, n=100;  
Ambient temperature: 25°C 77°F



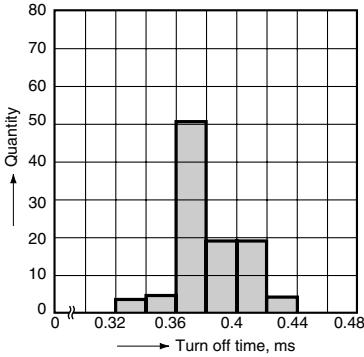
16.-(2) Turn on time distribution

Sample: AQZ264  
Load voltage: 10 V (DC); Continuous load current:  
100 mA (DC); Quantity, n=100;  
Ambient temperature: 25°C 77°F



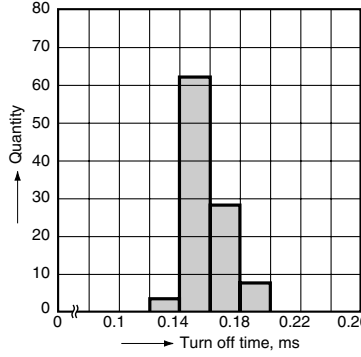
17.-(1) Turn off time distribution

Sample: AQZ262  
Load voltage: 10 V (DC); Continuous load current:  
100 mA (DC); Quantity, n=100;  
Ambient temperature: 25°C 77°F



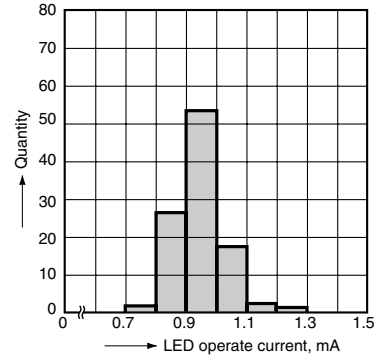
17.-(2) Turn off time distribution

Sample: AQZ264  
Load voltage: 10 V (DC); Continuous load current:  
100 mA (DC); Quantity, n=100;  
Ambient temperature: 25°C 77°F



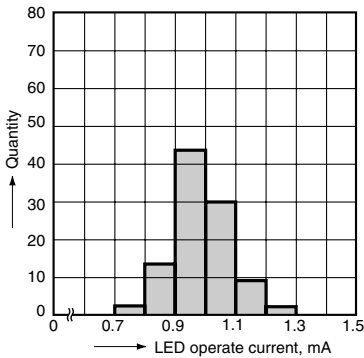
18.-(1) LED operate current distribution

Sample: AQZ262  
Load voltage: 10 V (DC); Continuous load current:  
100 mA (DC); Quantity, n=100;  
Ambient temperature: 25°C 77°F



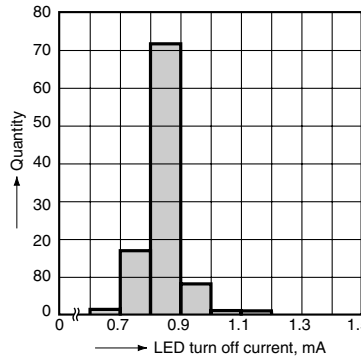
18.-(2) LED operate current distribution

Sample: AQZ264  
Load voltage: 10 V (DC); Continuous load current:  
100 mA (DC); Quantity, n=100;  
Ambient temperature: 25°C 77°F



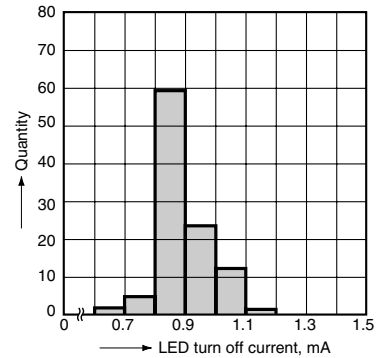
19.-(1) LED turn off current distribution

Sample: AQZ262  
Load voltage: 10 V (DC); Continuous load current:  
100 mA (DC); Quantity, n=100;  
Ambient temperature: 25°C 77°F



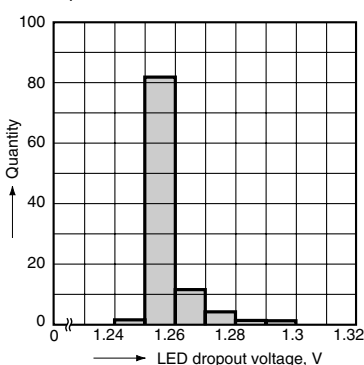
19.-(2) LED turn off current distribution

Sample: AQZ264  
Load voltage: 10 V (DC); Continuous load current:  
100 mA (DC); Quantity, n=100;  
Ambient temperature: 25°C 77°F



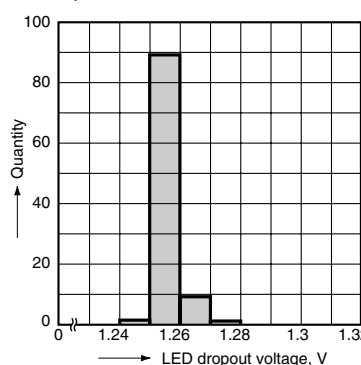
20.-(1) LED dropout voltage distribution

Sample: AQZ262  
LED current: 50 mA; Quantity, n=100;  
Ambient temperature: 25°C 77°F



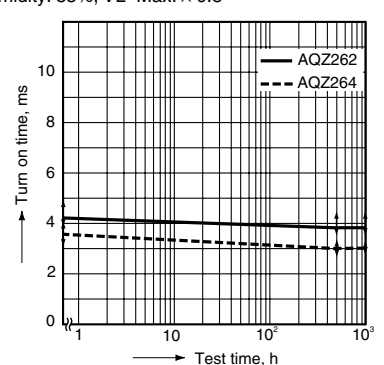
20.-(2) LED dropout voltage distribution

Sample: AQZ264  
LED current: 50 mA; Quantity, n=100;  
Ambient temperature: 25°C 77°F



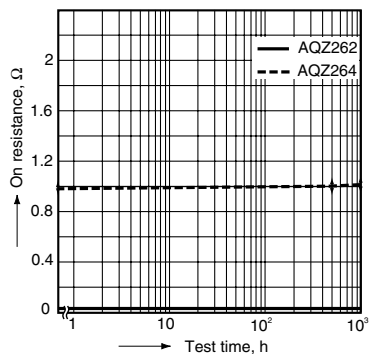
21.-(1) Bias test at high temperature and high humidity (change of turn on time)

Quantity, n=10; Ambient temperature: 85°C 185°F  
Humidity: 85%, VL=Max. × 0.8

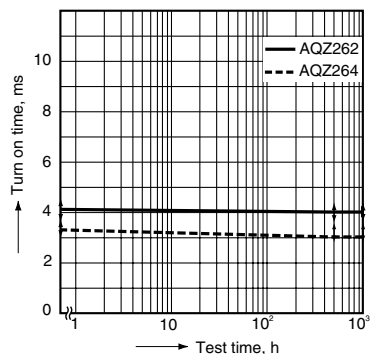


# Power 1 Form A High Capacity (AQZ26○)

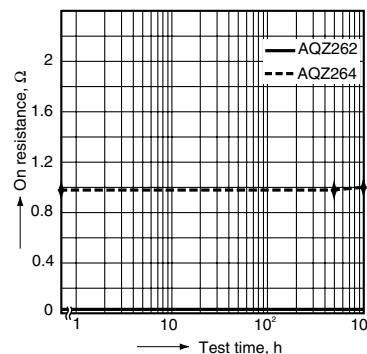
21.-(2) Bias test at high temperature and high humidity (change of on resistance)  
 Quantity, n=10; Ambient temperature: 85 °C 185°F  
 Humidity: 85%, VL=Max. × 0.8



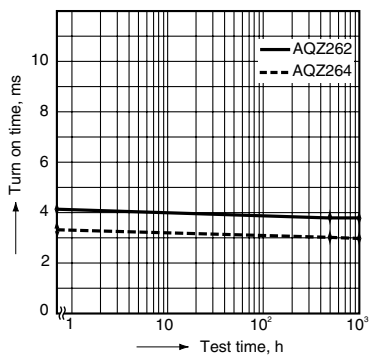
22.-(1) Low temperature storage test (change of turn on time)  
 Quantity, n=10; Ambient temperature: -40°C -40°F



22.-(2) Low temperature storage test (change of on resistance)  
 Quantity, n=10; Ambient temperature: -40°C -40°F



23.-(1) High temperature storage test (change of turn on time)  
 Quantity, n=10; Ambient temperature: 100°C 212°F



23.-(2) High temperature storage test (change of on resistance)  
 Quantity, n=10; Ambient temperature: 100°C 212°F

