

# 23RS Series

RF·LOW CR·37pF·11Ω

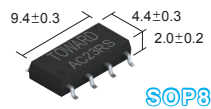
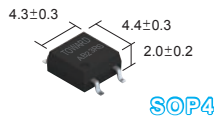


## Features

- Contact Form 1a / 2a
- Load Voltage 250V
- Operation LED Current 3.0mA
- Load Current 170mA
- On-Resistance 11Ω
- Output Capacitance 37pF
- Low Off-State Leakage Current 10nA

## Application

- Modem
- Telephone Equipment
- Security Equipment
- Sensing Equipment
- Automatic Test Equipment
- I/O Modules
- Electric Vehicle

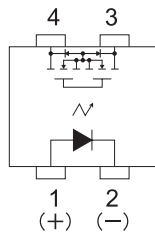


PART NO	PACKAGE	PACKING
AB23RS	SOP-4	Tube 100pcs
AC23RS	SOP-8	Tube 50pcs
AB23RS-R1	SOP-4	Reel 1000pcs
AC23RS-R1	SOP-8	Reel 1000pcs

\* Package & PCB Layout Design, See Page 134

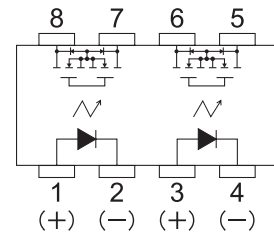
## Terminal Identification

### AB23RS



- 1:Anode (LED)  
2:Cathode (LED)  
3,4:Drain (MOS FET)

### AC23RS



- 1,3:Anode (LED)  
2,4:Cathode (LED)  
5,6,7,8:Drain (MOS FET)

為了持續的改進，敝司有權在不影響規格範圍的情況下修改設計。

In the interest of continuous development, our companies reserve the right to alter designs within specification range.

## Absolute Maximum Ratings 絕對最大定格 (Ambient Temperature 周圍溫度 : 25°C )

Item		Symbol	Value
Input 輸入	Continuous LED Current 連續 LED 電流	$I_F$	50mA
	Peak LED Current LED 峰值電流 (f=100 Hz,Duty=1%)	$I_{FP}$	500mA
	LED Reverse Voltage 逆向 LED 電壓	$V_R$	5V
	Input Power Dissipation 輸入損耗	$P_{IN}$	75mW
output 輸出	Load Voltage 負荷電壓	$V_L$	250V (AC peak or DC)
	Load Current 負荷電流 (mA)	$I_L$	170(1ch) 140(2ch)
	Peak Load Current 峰值負荷電流 (1ms, 1 shot) (mA)	$I_{PEAK}$	420
	Output Power Dissipation 輸出損耗 (mW)	$P_{OUT}$	300mW(1ch) 450mW(2ch)
Total Power Dissipation 全損耗 (mW)		$P_T$	350mW(1ch) 500mW(2ch)
I/O Breakdown Voltage 入 / 出力間絕緣電壓 (Vrms)		$V_{IO}$	1500
Operating Temperature 使用時溫度		$T_{OPR}$	-40°C ~+85°C
Storage Temperature 保存溫度		$T_{STG}$	-40°C ~+100°C

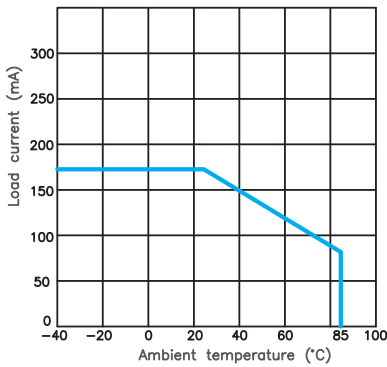
## Electrical Specifications 電性規格 (Ambient Temperature 周圍溫度 : 25°C )

Item		Symbol	MIN.	TYP.	MAX.	Units	Conditions
Input 輸入	LED Forward Voltage LED 順向電壓	$V_F$	1.0	1.17	1.5	V	$I_F=10mA$
	Operation LED Current LED 動作電流	$I_{F ON}$		0.6	3.0	mA	
	Recovery LED Voltage LED 復位電壓	$V_{F OFF}$	0.5	1.0		V	
Output 輸出	On-Resistance 導通電阻 Drain to Drain	$R_{ON}$		11	15	$\Omega$	$I_F=5mA, I_L=Rating$ Time to flow is within 1sec.
	Off-State Leakage Current 開路狀態漏電流	$I_{LEAK}$		0.1	10	nA	$V_L=250V$
	Output Capacitance 輸出端容量	$C_{OUT}$		37		pF	$V_L=0V, f=1MHz$
Transmission 傳達	Turn-On Time 動作時間	$T_{ON}$		0.15	0.3	ms	$I_F=5mA, I_L=Rating$
	Turn-Off Time 復位時間	$T_{OFF}$		0.05	0.2	ms	
Coupled 結合	I/O Insulation Resistance 輸入 / 出力間絕緣阻抗	$R_{IO}$	$10^9$			$\Omega$	
	I/O Capacitance 輸入 / 出力端靜電容量	$C_{IO}$		0.8		pF	$f=1MHz$

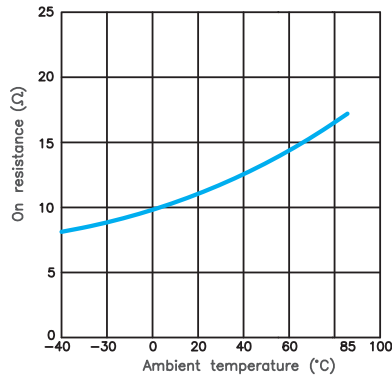
為了持續的改進，敝司有權在不影響規格範圍的情況下修改設計。

In the interest of continuous development, our companies reserve the right to alter designs within specification range.

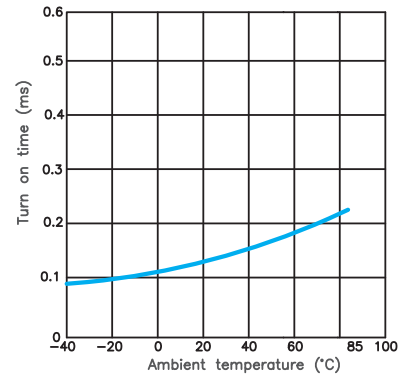
Load current Vs. Ambient temperature



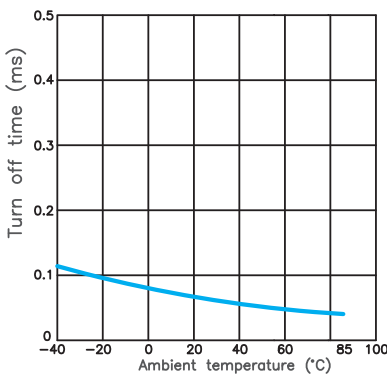
On resistance Vs. Ambient temperature



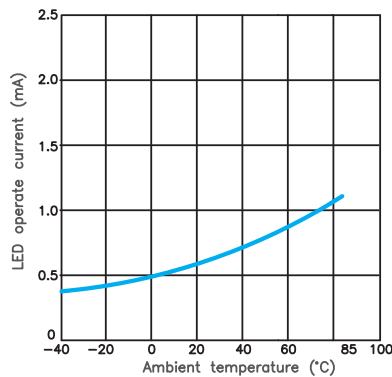
Turn on time Vs. Ambient temperature



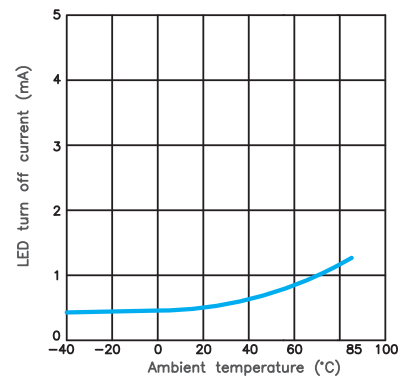
Turn off time Vs. Ambient temperature



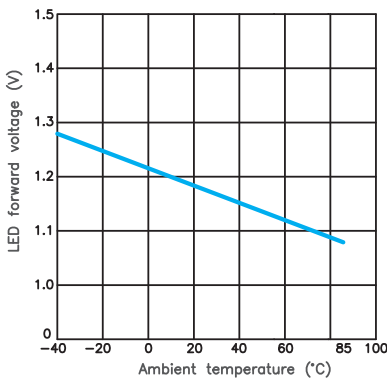
LED operate current Vs. Ambient temperature



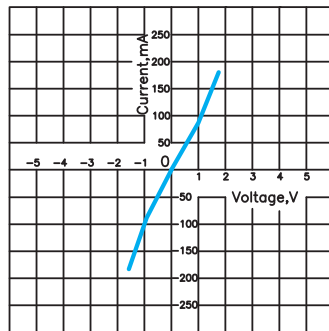
LED Turn off current Vs. Ambient temperature



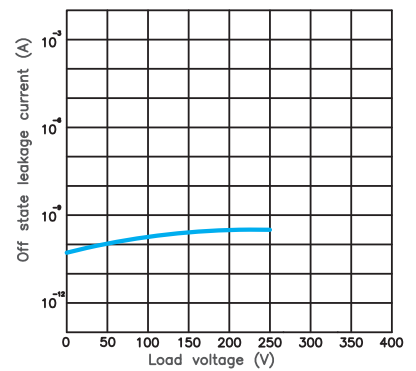
LED forward voltage Vs. Ambient temperature



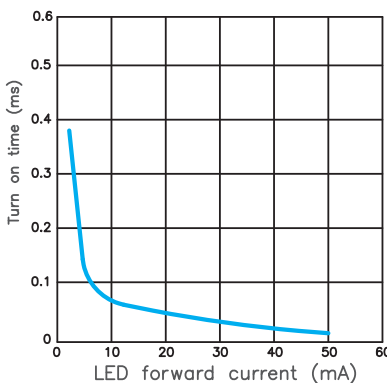
Voltage Vs. current characteristics of output at MOS portion



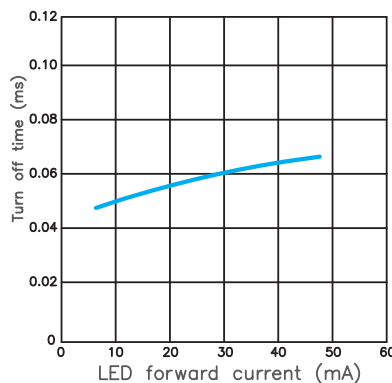
Off state leakage current



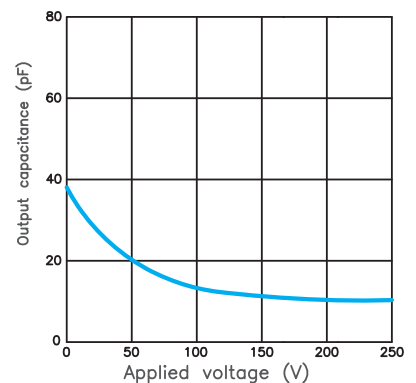
LED forward current Vs. turn on time characteristics



LED forward current Vs. turn off time characteristics




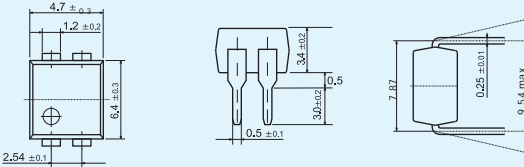
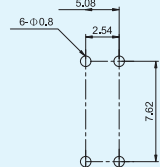

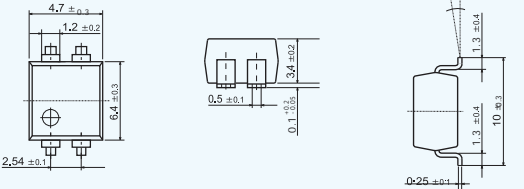
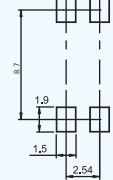

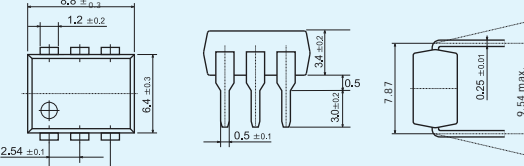
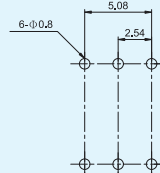

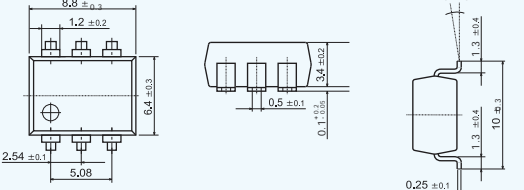
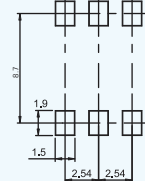

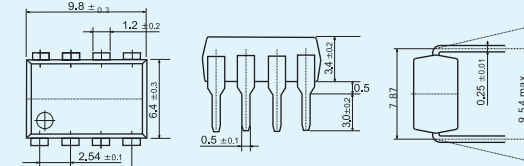
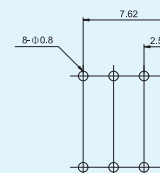

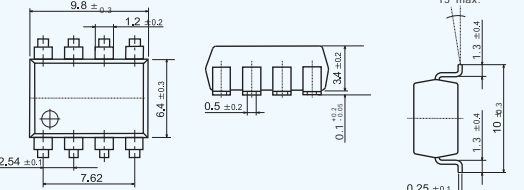
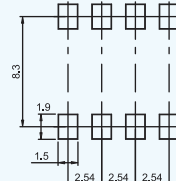
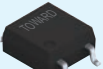
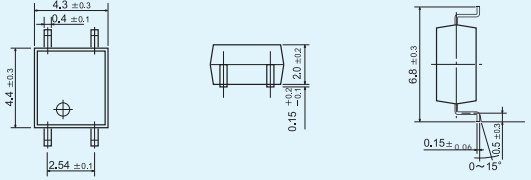
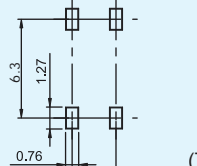

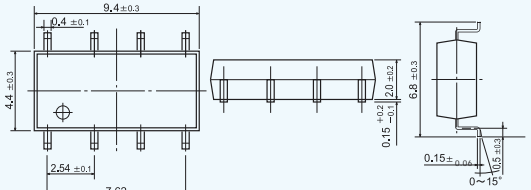
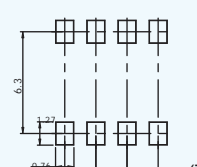
Applied voltage Vs. output capacitance characteristics



為了持續的改進，敝司有權在不影響規格範圍的情況下修改設計。

In the interest of continuous development, our companies reserve the right to alter designs within specification range.

Package & PC Board Pattern

Package 包裝	Dimensions 外型尺寸圖	PC Board pattern PC 板加工圖
 <p>DIP4</p>		 <p>(Bottom View)</p>
 <p>SMD4</p>		 <p>(Top View)</p>
 <p>DIP6</p>		 <p>(Bottom View)</p>
 <p>SMD6</p>		 <p>(Top View)</p>
 <p>DIP8</p>		 <p>(Bottom View)</p>
 <p>SMD8</p>		 <p>(Top View)</p>
 <p>SOP4</p>		 <p>(Top View)</p>
 <p>SOP8</p>		 <p>(Top View)</p>

為了持續的改進，敝司有權在不影響規格範圍的情況下修改設計。  
In the interest of continuous development, our companies reserve the right to alter designs within specification range.

Packing Specifications

Package Type 包裝類型	Tape shape & dimensions 形狀和尺寸	Reel shape & dimensions 圈帶形狀和尺寸	Quantity 數量
4 Pin SOP			1000 pcs
8 Pin SOP			1000 pcs
4 Pin SMD			1000 pcs
6 Pin SMD			1000 pcs
8 Pin SMD			1000 pcs

為了持續的改進，敝司有權在不影響規格範圍的情況下修改設計。

In the interest of continuous development, our companies reserve the right to alter designs within specification range.

Load Connecting Method

Type 類型	Load 負荷	Connection 接續方法	Feature 特長
4 pin	AC or DC		Control bi-directional signal 可控制雙向信號
6 pin	A		Control bi-directional signal 可控制雙向信號
	B		On-Resistance is 1/2 of A-connection 導通電阻值是 A 接法的 1/2 2-Make-contacts (Source Common)
C		On-Resistance is 1/2 of B-connection 導通電阻值是 B 接法的 1/2	
8 pin	AC or DC		2 input and 2 output 2 入力和 2 出力回路
			1 input and 2 output 1 入力和 2 出力回路

為了持續的改進，敝司有權在不影響規格範圍的情況下修改設計。

In the interest of continuous development, our companies reserve the right to alter designs within specification range.