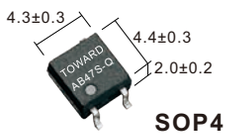
AB47S-Q

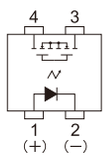
80V • 1 Form A

AEC-Q101 Certification

Green



SOP4



RoHS compliant

Features

- Contact Form 1a
- Load Voltage 80 V Max.
- Operation LED Current 3mA Max.
- Load Current 1.25A Max.
- On-Resistance 0.12Ω Typ.
- Output Capacitance 180 pF Typ.

Application:

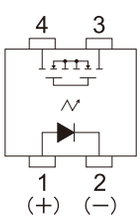
- Automobile BMS Controller
- Energy Storage System
- Big-data storage

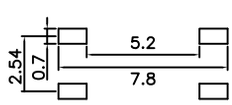
Part Identification

	SOP Type	Quantity
Stick	Tape & Reel Feed direction : Pin No. 3,4	Stick 100 Tape 1000
AB47S-Q	AB47S-Q-R1	

Terminal Identification 電路結構圖

Terminal Identification





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

* Recommended Soldering Pattern
For Reflow Soldering

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

Item		Symbol	Value
Input 輸入	Continuous LED Current 連續的LED電流	I_F	50mA
	Peak LED Current LED的峰值電流(f=100 Hz, duty=1%)	I_{FP}	500mA
	LED Reverse Voltage 逆向的LED電壓	V_R	5V
	Input Power Dissipation 容許損失	P_{In}	75mW
Output 輸出	Load Voltage 負荷電壓	V_L	80V(AC peak or DC)
	Load Current 負荷電流	I_L	1.25A
	Peak Load Current 峰值負荷電流(1 ms,1 shot)	I_{Peak}	3.0A
	Output Power Dissipation 電流損耗	P_{Out}	350mW
Total Power Dissipation 全損耗		P_T	400mW
I/O Breakdown Voltage 入/出力間絕緣電壓		$V_{I/O}$	1500Vrms Min.
Operating Temperature 使用時周圍溫度 *		T_{Opr}	-40℃ ~ +105℃
Storage Temperature 周圍保存溫度 *		T_{Stg}	-40℃ ~ +125℃

* The temperature is based on AEC-Q101 certification.

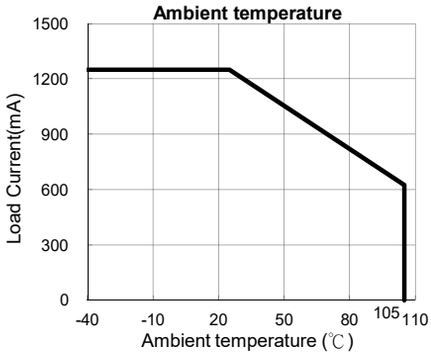
Recommended Operating Condition 建議使用條件 (Ambient Temperature 周圍溫度: 25 ℃)

Item	Symbol	Number of used channels	MIN.	TYP.	MAX.	units
Continuous LED Current 連續的 LED 電流	I_F		5	10	15	m A
Load Voltage 負荷電壓	V_L		---	---	40	V
Load Current 負荷電流	I_L		---	---	625	m A

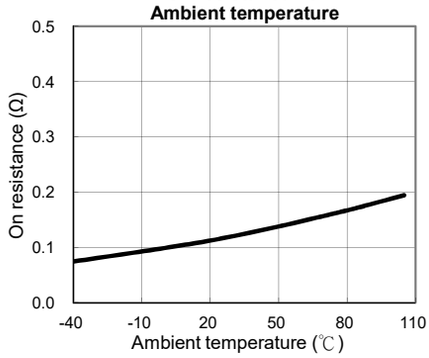
Electrical Specifications LED順向電壓(Ambient Temperature 周圍溫度 :25℃)

Item		Symbol	MIN.	TYP.	MAX.	Units	Conditions
Input 輸入	LED Forward Voltage LED順向電壓	V_F	0.9	1.37	1.5	V	I_F=10mA
	Operation LED Current LED的動作電流	$I_{F\ On}$		0.5	3	mA	
	Recovery LED Voltage LED的恢復電壓	$V_{F\ Off}$	0.5	1		V	
Output 輸出	On-Resistance 導通電阻 Drain to Drain	R_{On}		0.12	0.16	Ω	I_F=5mA, I_L= Rated Current Time to flow is within 1sec.
	Off-State Leakage Current 開路狀態時的電流	I_{Leak}			1	uA	V_L= 80V
	Output Capacitance 輸出端容量	C_{Out}		180		pF	V_L=0V, f=1MHz
Transmission 傳達	Turn-On Time 動作時間	T_{On}		0.5	3.0	ms	I_F=5mA I_L=Rated Current
	Turn-Off Time 復位時間	T_{Off}		0.1	0.5	ms	
Coupled 結合	I/O Insulation Resistance 輸入/出間的絕緣阻抗	$R_{I/O}$	10^9			Ω	
	I/O Capacitance 輸入/力端的靜電容量	$C_{I/O}$		1.3		pF	f=1MHz

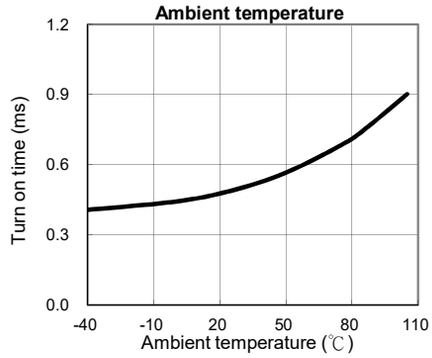
Load Current Vs. Ambient temperature



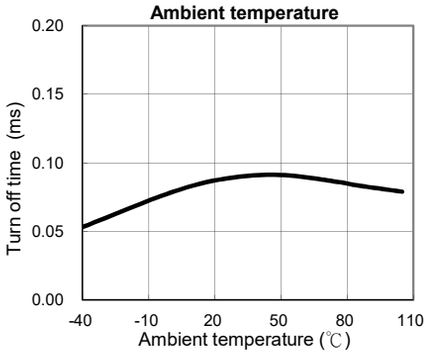
On resistance Vs. Ambient temperature



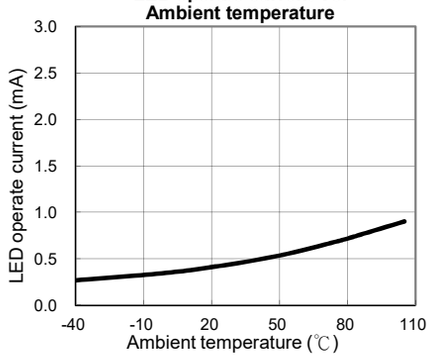
Turn on time Vs. Ambient temperature



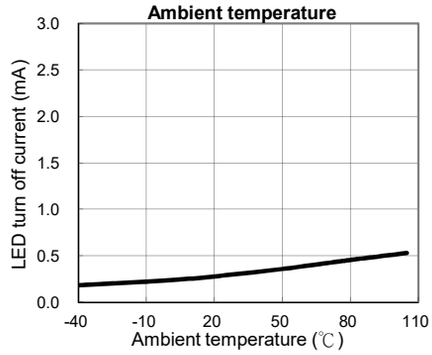
Turn off time Vs. Ambient temperature



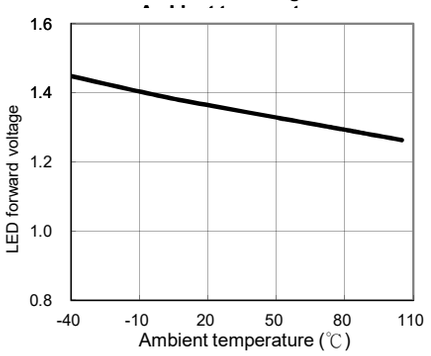
LED operate current Vs. Ambient temperature



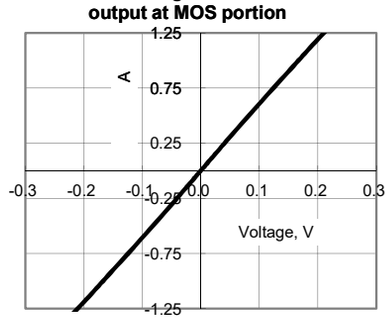
LED turn off current Vs. Ambient temperature



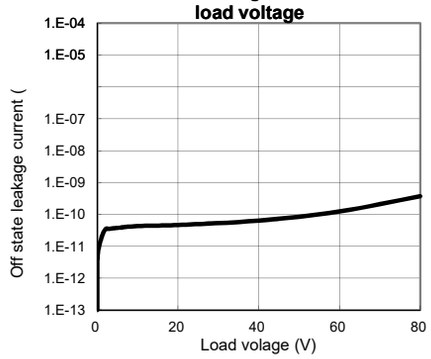
LED forward voltage Vs.



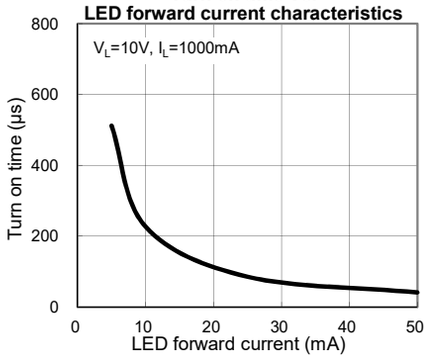
Current Vs. voltage characteristics of output at MOS portion



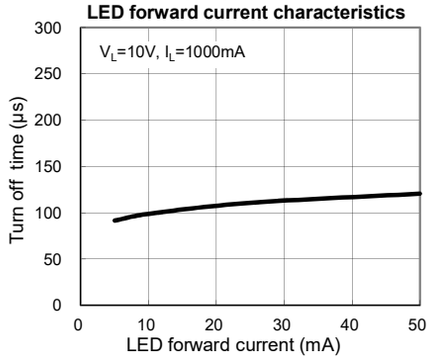
Off state leakage Current Vs. load voltage



Turn on time Vs. LED forward current characteristics



Turn off time Vs. LED forward current characteristics



Output capacitance Vs. applied voltage