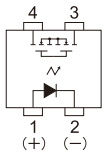
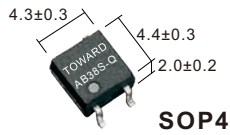


AB38S-Q

600V · 1 Form A

AEC-Q101
Certification

Green



RoHS compliant

Features

- Contact Form 1a
- Load Voltage 600 V Max.
- Operation LED Current 3mA Max.
- Load Current 70mA Max.
- On-Resistance 40Ω Typ.
- Output Capacitance 47 pF Typ.

Application:

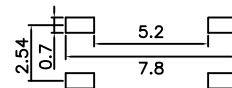
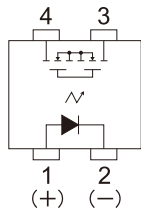
- Automobile BMS Controller
- Energy Storage System
- Big-data storage

Part Identification

SOP Type		Quantity
Stick	Tape & Reel	Stick 100
	Feed direction : Pin No. 3,4	Tape 1000
AB38S-Q	AB38S-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°C)

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	600V(AC peak or DC)
	Load Current 負荷電流	I _L	70mA
	Peak Load Current 峰值負荷電流 (1 ms, 1 shot)	I _{Peak}	200mA
	Output Power Dissipation 電流損耗	P _{Out}	300mW
Total Power Dissipation 全損耗		P _T	350mW
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°C ~ +105°C
Storage Temperature 周圍保存溫度 *		T _{Stg}	-40°C ~ +125°C

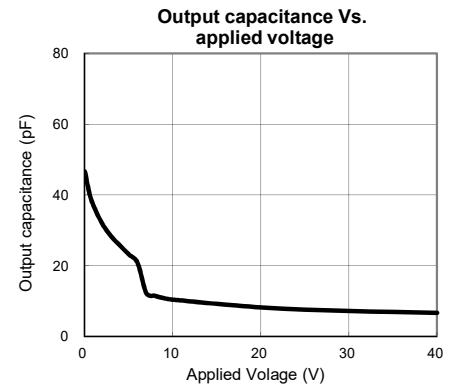
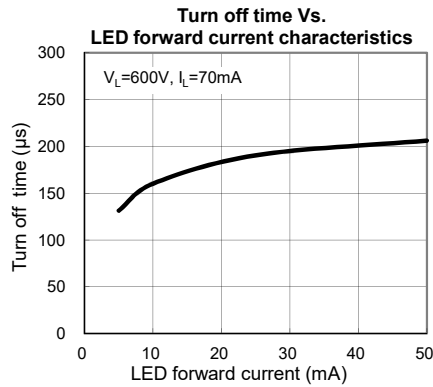
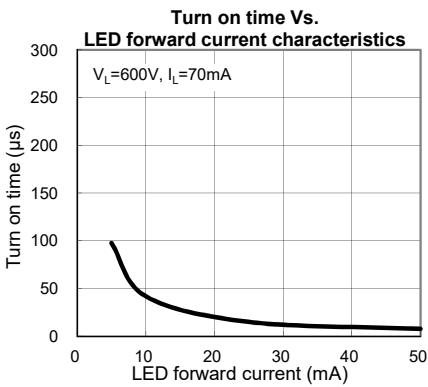
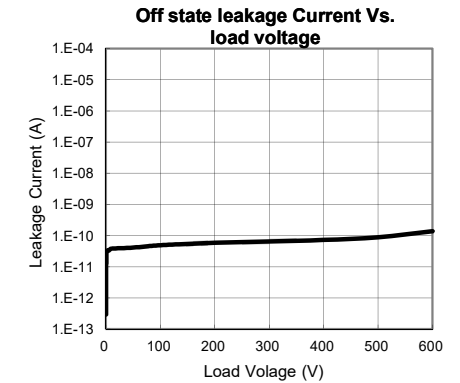
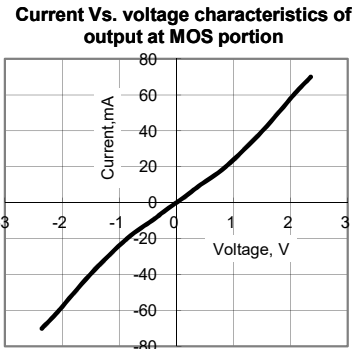
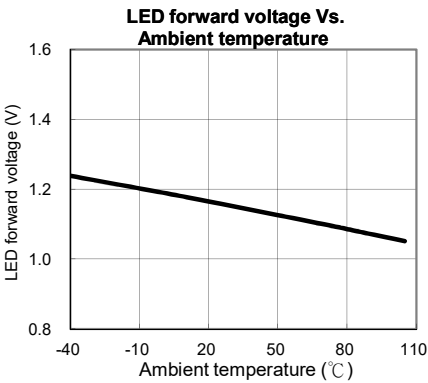
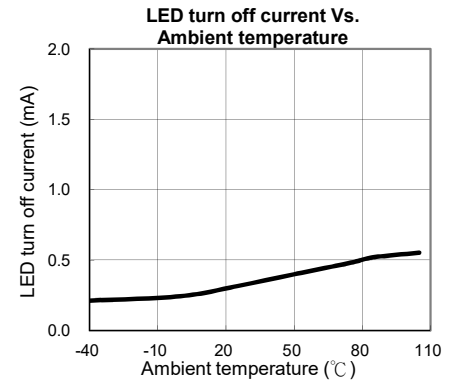
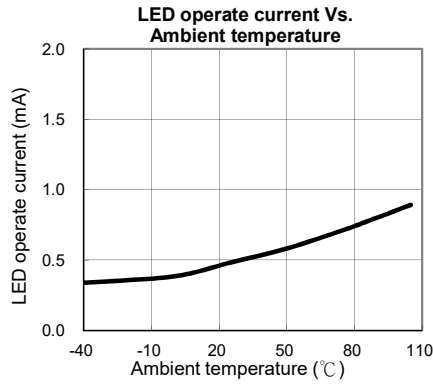
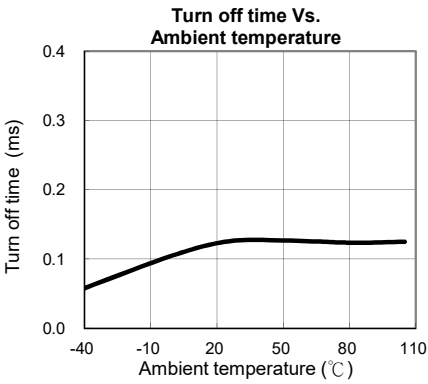
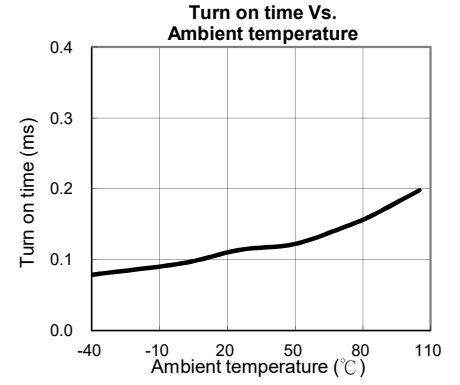
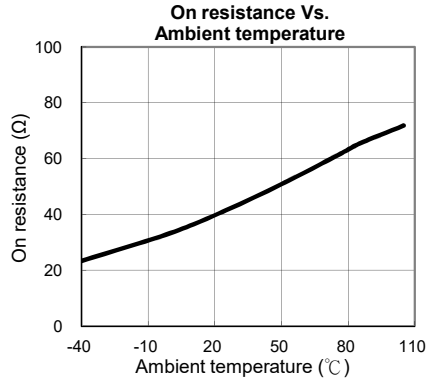
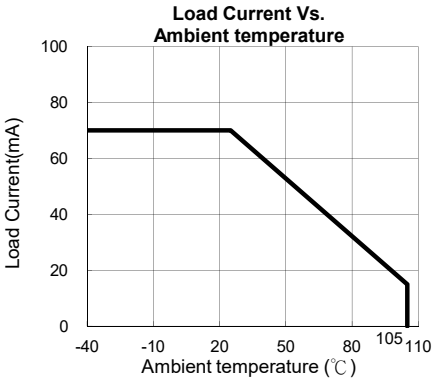
* The temperature is based on AEC-Q101 certification.

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

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		---	---	300	V
Load Current 負荷電流	I _L		---	---	35	m A

Electrical Specifications LED順向電壓(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	0.9	1.17	1.3	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}		40	60	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 = 600V
	Output Capacitance 輸出端容量	C _{Out}		47		pF	V _L =0V, f=1MHz
Transmission 傳達	Turn-On Time 動作時間	T _{On}		0.1	0.5	ms	I _F =5mA I _L =Rated Current
	Turn-Off Time 復位時間	T _{Off}		0.15	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



PhotoDMOS-FET Relay
General Purpose

AEC-Q101 Test Report

Station	Test Item		Test Condition	Sample Size	Result
1	External Visual	EV	Reference JESD22 B-101	924 ea	PASS
2	Pre-condition PC	Bake	MSL_3 : 125°C, 24hrs	924 ea	PASS
		Soak	MSL_3 : 30°C , 60%RH, 192hrs		PASS
		Reflow	MSL_3 : 260°C , 3 times		PASS
3	Temperature Cycling	TC	-55~125C/15min 30min/cys 1000 cycles Reference JESD22 A-104, Readout: 1000cyc	77ea*3 lots (Total 231ea)	PASS
4	Autoclave	AC	96 hours, TA = 121°C, RH = 100%, 15psig.	77ea*3 lots (Total 231ea)	PASS
5	TC Delamination Test	TCDT	After TCT 100% C-SAM	77ea*3 lots (Total 231ea)	PASS
6	Wire Bond Integrity	Decap	500 hours, TA = maximum rated Tj for bonding of dissimilar metals (e.g., Au/Al), decap and wire pull/bond inspection after WBI on all wires from a maximum of 5 parts.	5 ea *1 lot	PASS
		WBI			PASS
7	Destructive Physical Analysis. D.P.A.	DPA	Random sample of parts that have successfully completed H3TRB or HAST, and TC.	2ea	PASS
8	High Temperature Reverse Bias	HTRB	125C, total :1000H, Readout: 1000hr	77ea*3 lots (Total 231ea)	PASS
9	High Temperature Gate Bias	HTGB	125C, total :1000H, Readout: 1000hr	77ea*3 lots (Total 231ea)	PASS
10	High Humidity High Temp. Reverse Bias	H ³ TRB	1000 hours at TA = 85°C/85% RH with part reverse biased at 80% of rated breakdown voltage up to a maximum of 100V or limit of chamber. Readout: 1000hr	77ea*3 lots (Total 231ea)	PASS
11	Power and Temperature Cycle	PTC	Reference JESD22A-105 -40~125C/10MIN ON/OFF 5min, Readout : 1000 hr	77ea*3 lots (Total 231ea)	PASS
12	ESD	HBM	>2000V level per pins *Reference AEC Q101-001	30ea *1 lot	PASS
	ESD	CDM	*Reference AEC Q101-005		PASS
13	Physical Dimension	PD	*Reference JESD22 B-100	30ea *1 lot	PASS
14	Resistance to Solder Heat	RSH	270°C± 5°C +2/-0 seconds *Reference JESD22 B106	30ea *1 lot	PASS
15	Bond Shear	BS	AEC-Q101-003	5 ea *1 lot	PASS
16	Terminal Strength	TS	Bend angle : 90 degree Speed rate : 2~3 seconds Applying force : 2.5 N Number of cycle : 1 cycle	30ea *1 lot	PASS
17	Solderability	SD	245°C 5 seconds Magnification 50x, *Reference J-STD-002JESD22B102	10ea *2 lots	PASS
18	LF	TC	all test samples meet the criteria established by the Class level 2 requirements TC-: -50~85/15min 30min/cys 1500CYS ,	2ea *3 lots	PASS
		SEM	LF follow JEDEC 201A (After 500cyc)		PASS
		SEM	LF follow JEDEC 201A (After 1500cyc)		PASS
19	LF	TH	TH: 55C/85% 4000H, Inspection Intervals: 1000hrs, 4000hrs	2ea *3 lots	PASS
		SEM	LF follow JEDEC 201A (After 1500hrs)		PASS
		SEM	LF follow JEDEC 201A (After 4000hrs)		PASS
	LF	TH	TH: 30C/60%(room temp.) 4000H, Inspection Intervals: 1000hrs, 4000hrs		PASS
		SEM	LF follow JEDEC 201A (After 1500hrs)		PASS
		SEM	LF follow JEDEC 201A (After 4000hrs)		PASS