TOWARD
RELAYS

58 series 1800V • 1a

(SiC MOSFET) AEC-Q101 Certified

RoHS Compliance

Specification

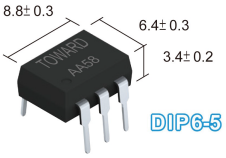
- Contact Form 1a
- Load Voltage 1800 V
- Operation LED Current 5.0 mA
- Load Current 30 mA
- On-Resistance 100 Ω
- Output Capacitance 10 pF
- Low Off-State Leakage Current 1 uA/10 uA
  (Tested at 1500 VDC / 1800 VDC)

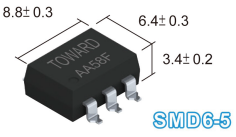
Application

- Battery Management System (BMS)
- Energy Storage System (ESS)
- Automatic Test Equipment (ATE)
- High Voltage Switching

Features

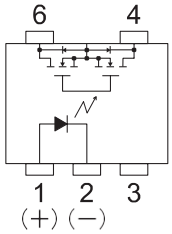
- High Voltage with Low On-Resistance
- Fast Reverse Recovery
- High Avalanche Ruggedness
- Steady Leakage Current at High Temperature
- Output Creepage Distance 3.8 mm
- Input / Output Clearance Distance 7.3 mm
- Input / Output Creepage Distance 8.9 mm





Terminal Identification

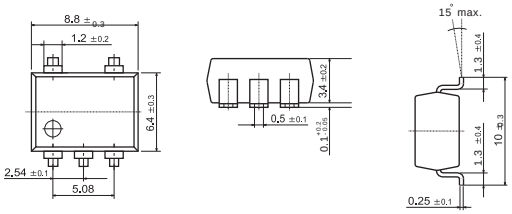
AA58(F)

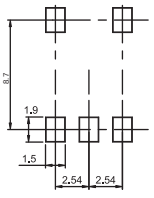


1:Anode (LED)
2:Cathode (LED)
3:NC
4,6:Drain (MOSFET)

PART NO	PACKAGE	PACKING
AA58	DIP6-5	Tube 50pcs
AA58F	SMD6-5	Tube 50pcs
AA58F-R1	SMD6-5	Reel 1000pcs

Dimensions & PC Board pattern





(Top View)

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

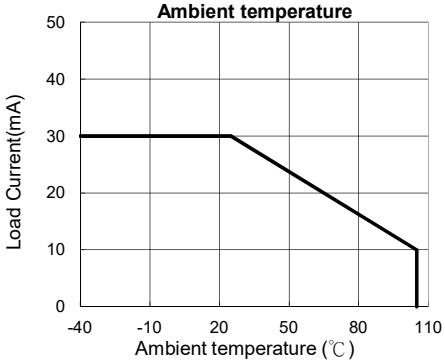
Item			Symbol	Value
Input 輸入	Continuous LED Current 連續LED 電流		I_F	50mA
	Peak LED Current LED 峰值電流(f =100 Hz,Duty=1%)		I_{FP}	500mA
	LED Reverse Voltage 逆向LED 電壓		V_R	5V
	Input Power Dissipation 輸入損耗		P_{IN}	75mW
output 輸出	Load Voltage 負荷電壓		V_L	1800V (AC peak or DC)
	Load Current 負荷電流	(mA)	I_L	30
	Peak Load Current 峰值負荷電流(10ms,1shot)	(mA)	I_{PEAK}	80
	Output Power Dissipation 輸出損耗	(mW)	P_{OUT}	450
Total Power Dissipation 全損耗		(mW)	P_T	500
I/O Breakdown Voltage 輸入/出力間絕緣電壓		(Vrms)	$V_{I/O}$	3750
I/O Breakdown Voltage 輸入/出力間絕緣電壓(Suffix-H)		(Vrms)	$V_{I/O}$	5000
Operating Temperature 使用時溫度			T_{OPR}	-40℃ ~ +105℃
Storage Temperature 保存溫度			T_{STG}	-40℃ ~ +125℃

Electrical Specifications 電性規格 (Ambient Temperature 周圍溫度：25℃)

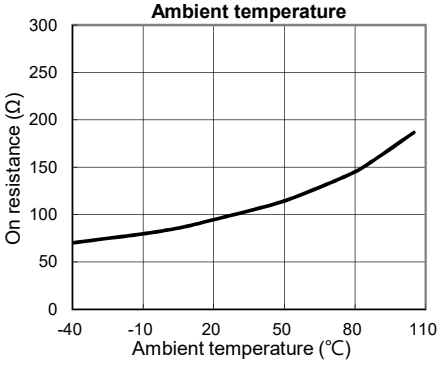
Item		Symbol	MIN.	TYP.	MAX.	Units	Conditions
Input 輸入	LED Forward Voltage LED 順向電壓	V_F	1.0	1.33	1.5	V	I_F=10mA
	Operation LED Current LED 動作電流	$I_{F\ ON}$		2.0	5.0	mA	
	Recovery LED Voltage LED 復位電壓	$V_{F\ OFF}$	0.5	1.2		V	
Output 輸出	On-Resistance 導通電阻 Drain to Drain (tested within 1 sec.)	R_{ON}		120	200	Ω	I_F=10mA,I_L=Rating
				100	180	Ω	I_F=10mA,I_L=5 mA
	Off-State Leakage Current 開路狀態漏電流	I_{LEAK}			10	μA	V_L=1800V
					1	μA	V_L=1500V
	Output Capacitance 輸出端容量	C_{OUT}		10		pF	V_L=0V,f=1MHz
Transmission 傳達	Turn-On Time 動作時間	T_{ON}		0.2	3.0	ms	I_F=10mA,I_L=Rating
	Turn-Off Time 復位時間	T_{OFF}		0.06	1.0	ms	
Coupled 結合	I/O Insulation Resistance 輸入/ 出間絕緣阻抗	$R_{I/O}$	10^{10}			Ω	
	I/O Capacitance 輸入/ 力端靜電容量	$C_{I/O}$		1.3		pF	f=1MHz

AA58 Reference Data

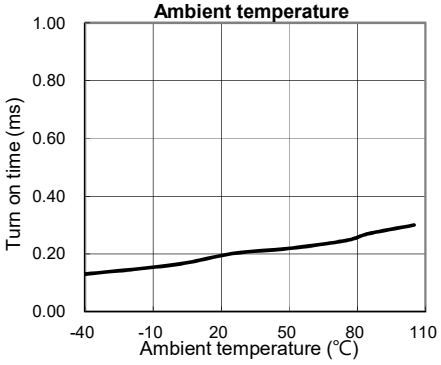
Load Current Vs. Ambient temperature



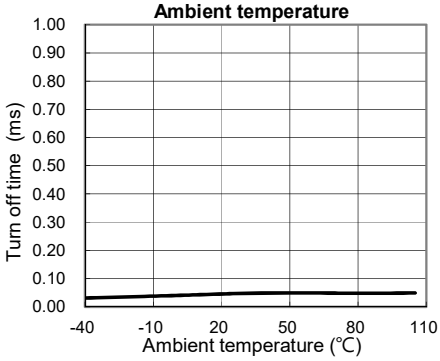
On resistance Vs. Ambient temperature



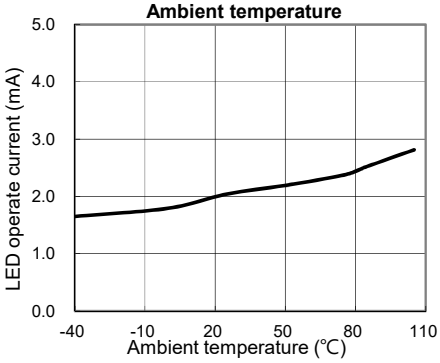
Turn on time Vs. Ambient temperature



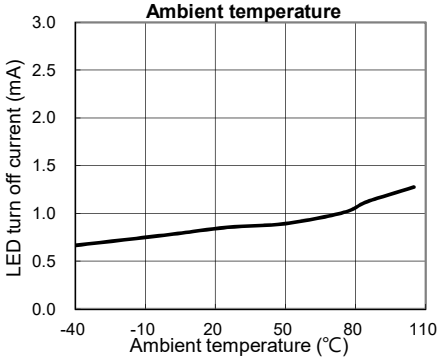
Turn off time Vs. Ambient temperature



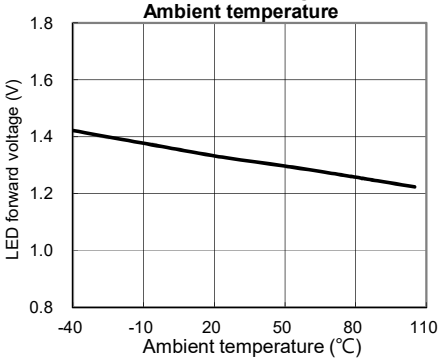
LED operate current Vs. Ambient temperature



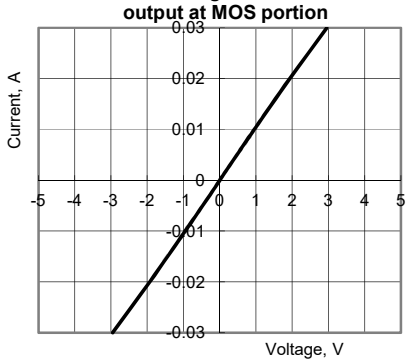
LED turn off current Vs. Ambient temperature



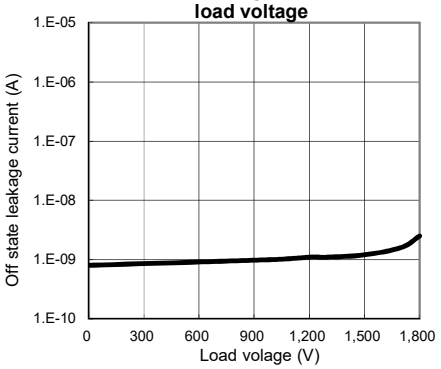
LED forward voltage Vs. Ambient temperature



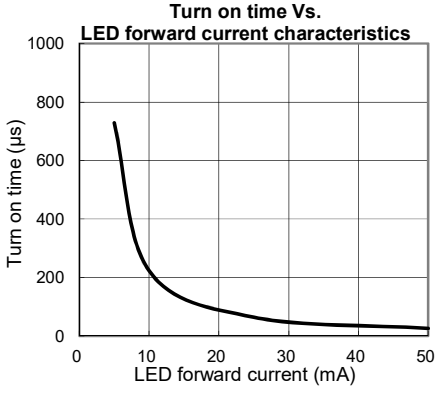
Current Vs. voltage characteristics of output at MOS portion



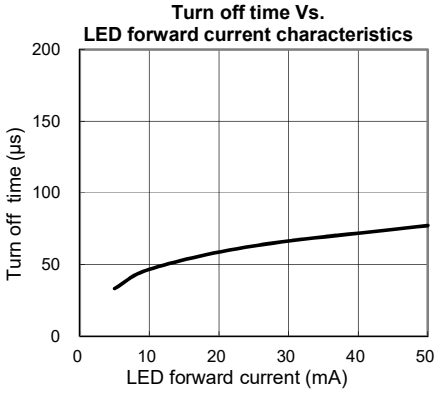
Off state leakage Current Vs. load voltage



Turn on time Vs. LED forward current characteristics



Turn off time Vs. LED forward current characteristics



Output capacitance Vs. applied voltage