

## SMD Opto-Coupler

Primary characteristics		
Parameter	Value	Unit
OFF-state output terminal voltage	400	V
Total power dissipation	330	mW

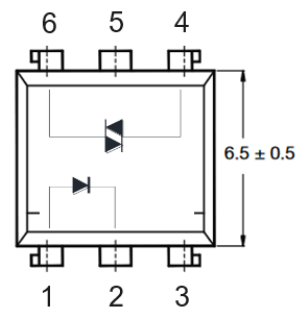
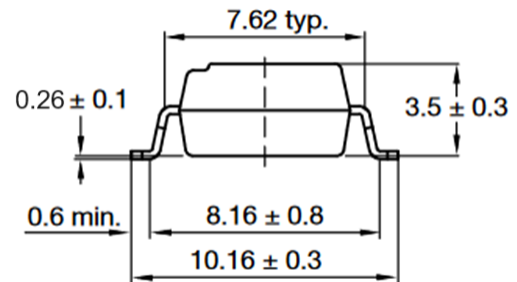
### Features

- **SMD-6 Gull Wing** package for easy automatic insertion
- Isolation voltage between input and output  
 $V_{iso}: 5000V_{rms}$
- 6-pin DIP photocoupler, triac driver output
- High repetitive peak OFF-state voltage  
 $V_{DRM}: \text{min. } 400V$
- High critical rate of rise of OFF-state voltage ( $dV/dt: \text{min. } 1000V/\mu s$ )
- All materials be used in device are followed EU **RoHS** directive (No. 2002/95/EC)

### Applications

- AC motor drives and starters
- E.M. contactors
- Lighting controls
- Solenoid/valve controls
- Solid state relays
- Static power switches
- Temperature controls

### Case dimensions



### SMD-6 Gull Wing

PIN definition:

1 – Anode	4 – Main terminal
2 – Cathode	5 – Substrate
3 – NC	6 – Main terminal

### Absolute maximum ratings ( $T_a=25^\circ C$ )

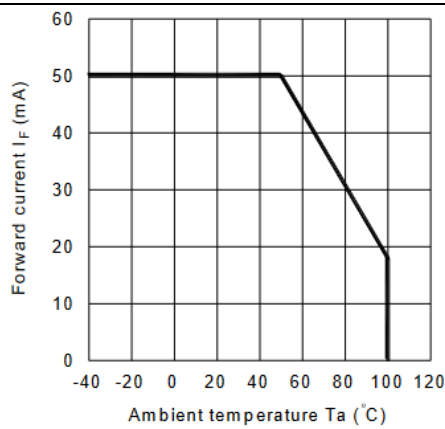
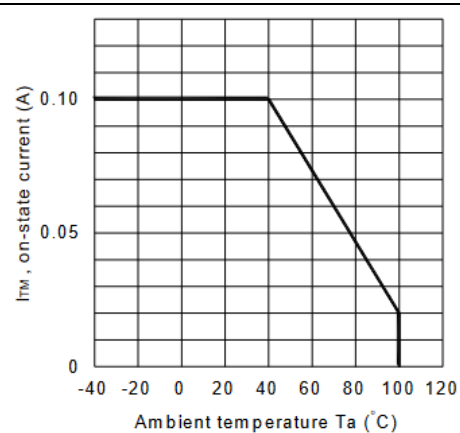
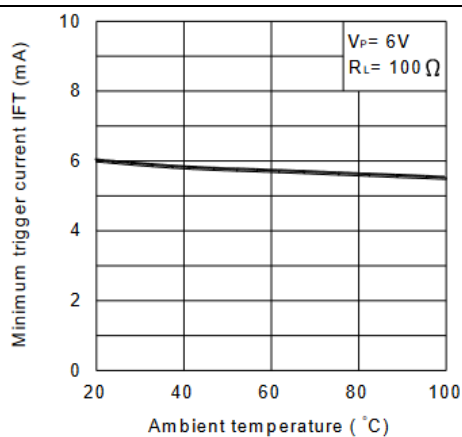
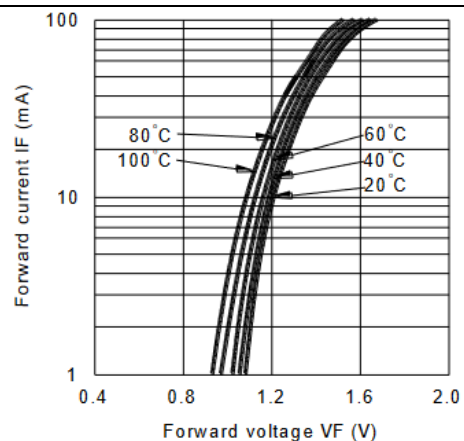
Characteristic		Symbol	Rating	Unit
Input	Forward current	$I_F$	50	mA
	Reverse voltage	$V_R$	6.0	V
	Junction temperature	$T_J$	125	$^\circ C$
	Power dissipation	$P$	100	mW
Output	OFF-state output terminal voltage	$V_{DRM}$	400	V
	Peak repetitive surge current (PW=1.0ms, 120pps)	$I_{TSM}$	1.0	A
	Junction temperature	$T_J$	125	$^\circ C$
	Collector power dissipation	$P_C$	300	mW
Total power dissipation		$P_{tot}$	330	mW
Isolation voltage		$V_{iso}$	5000	$V_{rms}$
Operating temperature range		$T_{opr}$	-40 ~ 100	$^\circ C$
Storage temperature range		$T_{stg}$	-55 ~ 150	$^\circ C$
Soldering temperature		$T_{sol}$	260	$^\circ C$

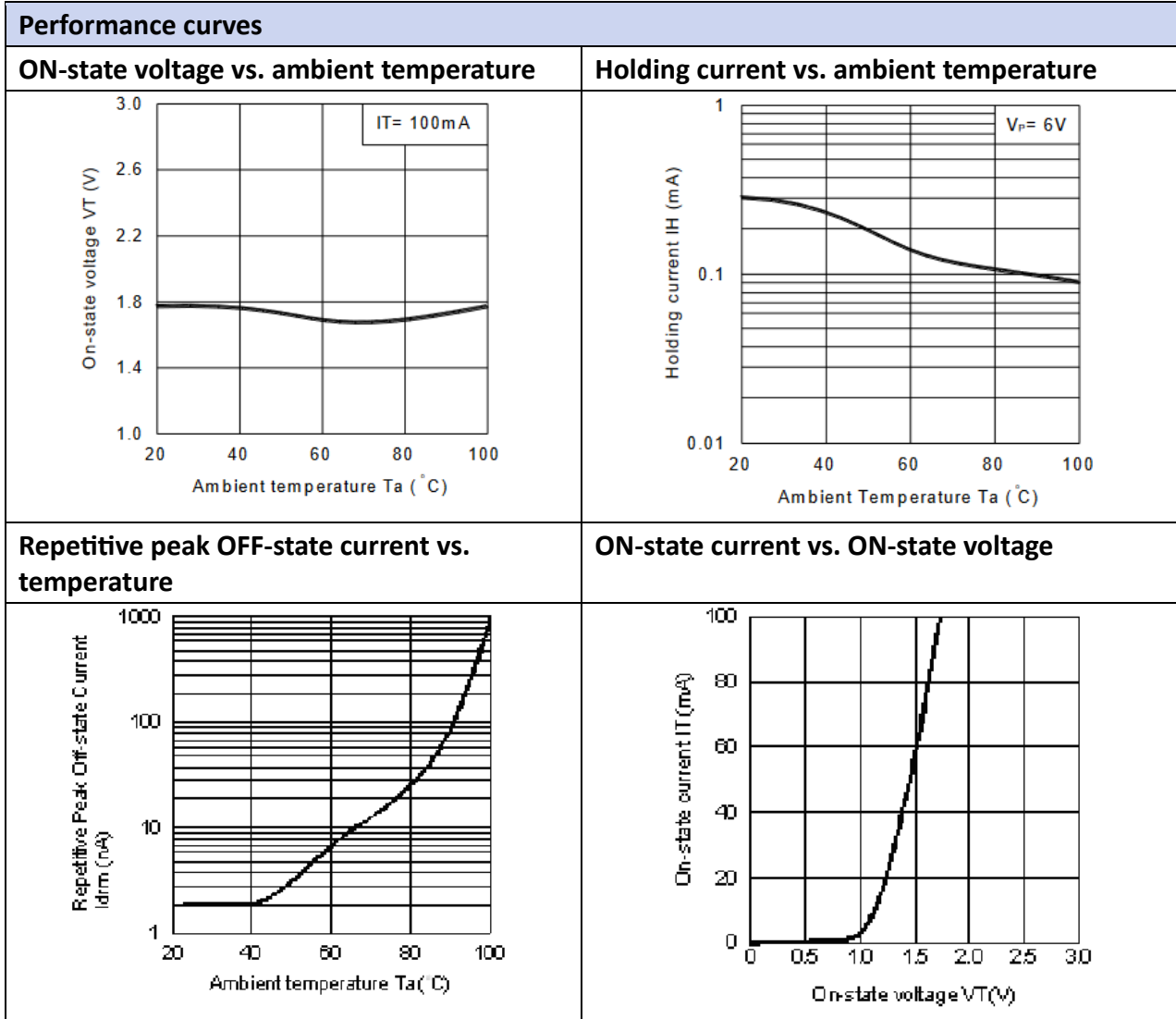
**Electrical optical characteristics (T<sub>a</sub>=25°C)**

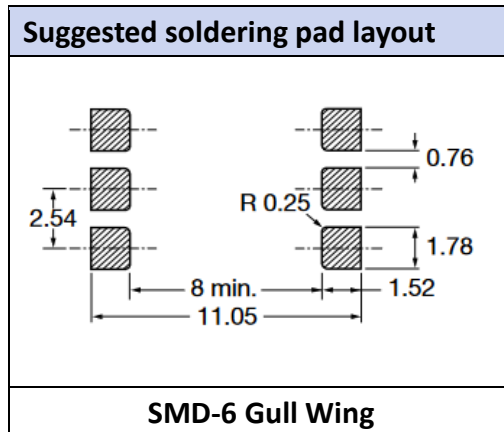
Characteristic	Symbol	Test condition	Value			Unit	
			Min.	Typ.	Max.		
Input	Forward voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	-	1.15	1.5	V
	Reverse current	I <sub>R</sub>	V <sub>R</sub> =6.0V	-	0.05	10	μA
Output	Peak blocking current, either direction	I <sub>DRM</sub>	V <sub>DRM</sub> =400V	-	10	100	nA
	Peak ON-state voltage either direction	V <sub>TM</sub>	I <sub>TM</sub> =100mA peak	-	1.7	3.0	V
	Critical rate of rise of OFF-state voltage	dv/dt	V <sub>in</sub> =240V <sub>rms</sub>	1000	-	-	V/μs
Couple	LED trigger current, current required to latch output	I <sub>FT</sub>	Main terminal voltage = 3.0V	-	-	15	mA
	Holding current, either direction	I <sub>H</sub>		-	200	-	μA

Notes:

1. Test voltage must be applied within dv/dt rating.
2. This is static dv/dt. Commutating dv/dt is a function of the load-driving thyristor(s) only.
3. All devices are guaranteed to trigger at an I<sub>F</sub> value less than or equal to max I<sub>FT</sub>. Therefore, recommended operating I<sub>F</sub> lies between max I<sub>FT</sub>, 15mA and absolute max I<sub>F</sub> (50mA)

**Performance curves**
**Forward current vs. ambient temperature**

**ON-state current vs. ambient temperature**

**Minimum trigger current vs. ambient temperature**

**Forward current vs. forward voltage**






Ordering information			
Part Number	Package	Shipping Quantity	Dimensions
MOC3021S	SMD-6 Gull Wing	1000 pcs / reel	---

## Disclaimer

Akyga semi reserves the right to make changes without notice to any product specification herein, to make corrections, modifications, enhancements or other changes. Akyga semi or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies. Data sheet specifications and its information contained are intended to provide a product description only. "Typical" parameters which may be included on Akyga semi data sheets and/ or specifications can and do vary in different applications and actual performance may vary over time. Akyga semi does not assume any liability arising out of the application or use of any product or circuit. Akyga semi products are not designed, intended or authorized for use in medical, life-saving implant or other applications intended for life-sustaining or other related applications where a failure or malfunction of component or circuitry may directly or indirectly cause injury or threaten a life without expressed written approval of Akyga semi. Customers using or selling Akyga semi components for use in such applications do so at their own risk and shall agree to fully indemnify Akyga semi and its subsidiaries harmless against all claims, damages and expenditures.