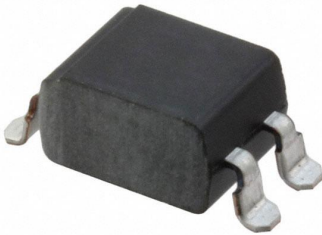


S21ME5PY Datasheet

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<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	S21ME5PY-DG
Manufacturer	Sharp Microelectronics
Manufacturer Product Number	S21ME5PY
Description	OPTOISOLATOR 5KV TRIAC 4SMD
Detailed Description	Optoisolator Triac Output 5000Vrms 1 Channel

This model S21ME5PY is available at DiGi Electronics.

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Manufacturer Product Number:	Manufacturer:
S21ME5PY	Sharp Microelectronics
Series:	Product Status:
-	Obsolete
Output Type:	Zero Crossing Circuit:
Triac	Yes
Number of Channels:	Voltage - Isolation:
1	5000Vrms
Voltage - Off State:	Static dV/dt (Min):
600 V	100V/μs
Current - LED Trigger (I _{ft}) (Max):	Current - On State (I _t (RMS)) (Max):
10mA	100 mA
Current - Hold (I _h):	Turn On Time:
3.5mA	100μs (Max)
Voltage - Forward (V _f) (Typ):	Current - DC Forward (I _f) (Max):
1.2V	50 mA
Operating Temperature:	Mounting Type:
-30°C ~ 100°C	Through Hole
Approval Agency:	Base Product Number:
BSI, DEMKO, SEMKO, UR, VDE	S21M

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
RoHS non-compliant	1 (Unlimited)
ECCN:	HTSUS:
EAR99	8541.49.8000

S11ME5/S11ME6/S21ME5F S21ME5/S21ME6/S21ME6F

Phototriac Coupler Conformable to European Safety Standard

- * Lead forming type (I type) of / S21ME5F/ S21ME6F are also available. (/ S21ME5FI/ S21ME6FI)
- * DIN-VDE0884 approved type is also available as an option.

■ Features

1. Internal isolation distance : 0.4mm or more
2. Creepage distance : 6.4mm or more
3. Clearance : 6.4mm or more
4. Recognized by UL file No. E64380

Approved by VDE (DIN-VDE0884 : No.76850)

Approved by BSI (BS415 : No.6690, BS7002 : No.7421)

Approved by SEMKO (No.9202227)

Approved by DEMKO (No.107968)

Approved by EI (No.152029-02,03,04,0116)

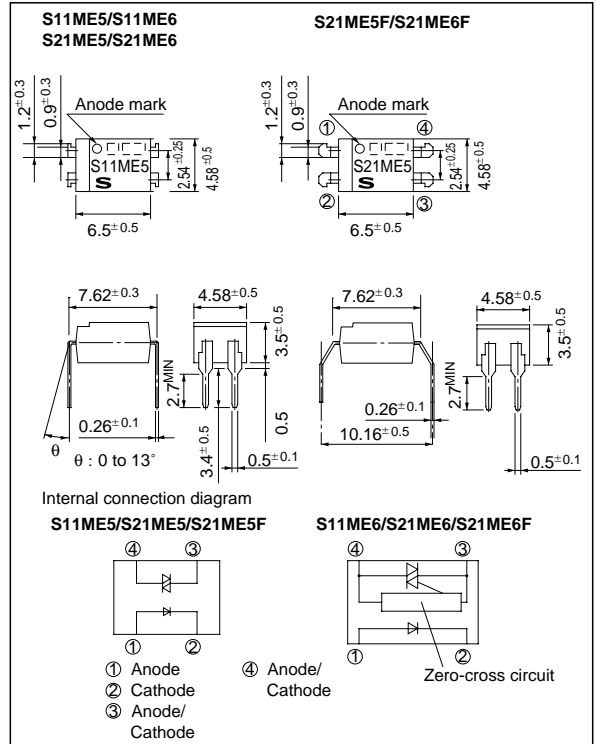
5. Built-in zero-cross circuit
(S11ME6/S21ME6/S21ME6F)
6. Wide forming type (S21ME5F, S21ME6F)
(Distance between lead pins : 10.16 mm)
7. High isolation voltage between input and output
(Viso : 5 000V_{rms})

■ Applications

1. For triggering medium/high power triac
2. For detecting over voltage of switching power supply

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I _F	50	mA
	Reverse voltage	V _R	6	V
Output	RMS ON-state current	I _T	100	mA _{rms}
	*1 Peak one cycle surge current	I _{surge}	1.2	A
	Repetitive peak OFF-state voltage	V _{DRM}	400	V
			*2 S21ME5 / S21ME6	
*3 Isolation voltage		V _{iso}	5 000	V _{rms}
Operating temperature		T _{opr}	- 30 to + 100	°C
Storage temperature		T _{stg}	- 55 to + 125	°C
*4 Soldering temperature		T _{sol}	260	°C

*1 50Hz sine wave *2 Also S21ME5F/ S21ME6F

*3 40 to 60% RH, AC for 1 minute, f = 60Hz

*4 For 10 seconds

■ Electro-optical Characteristics

(Ta = 25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	$I_F = 20\text{mA}$	-	1.2	1.4	V
	Reverse current	I_R	$V_R = 3\text{V}$	-	-	10^{-5}	A
Output	Repetitive peak OFF-state current	I_{DRM}	$V_{DRM} = \text{Rated}$	-	-	10^{-6}	A
	ON-state voltage	V_T	$I_T = 100\text{mA}$	-	-	2.5	V
	Holding current	I_H	$V_D = 6\text{V}$	0.1	-	3.5	mA
	Critical rate of rise of OFF-state voltage	dV/dt	$V_{DRM} = (1/\sqrt{2}) \cdot \text{Rated}$	100	-	-	V/ μs
	*5Zero-cross voltage	V_{OX}	Resistance load, $I_F = 15\text{mA}$	-	-	35	V
Transfer characteristics	Minimum trigger current	I_{FT}	$R_L = 100\Omega, V_D = 6\text{V}$	-	-	10	mA
	Isolation resistance	R_{ISO}	DC = 500V, 40 to 60% RH	5×10^{10}	10^{11}	-	Ω
	Turn-on time	t_{on}	$V_D = 6\text{V}, R_L = 100\Omega, I_F = 20\text{mA}$	-	-	100	μs

*5 S11ME6, S21ME6, S21ME6F

Fig. 1 RMS ON-state Current vs. Ambient Temperature

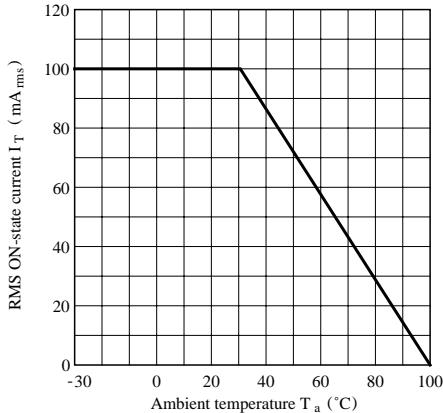


Fig. 2 Forward Current vs. Ambient Temperature

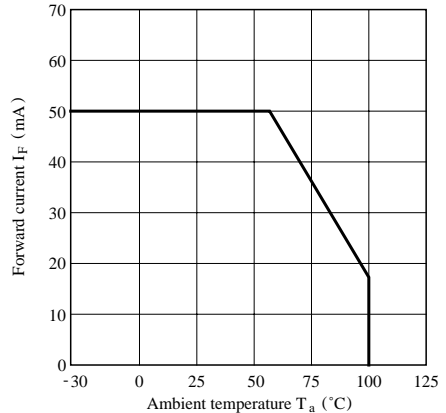


Fig. 3 Forward Current vs. Forward Voltage

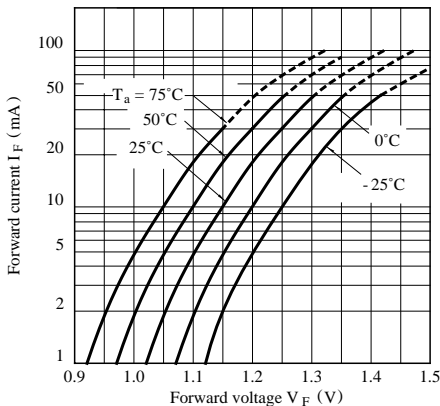


Fig. 4 Minimum Trigger Current vs. Ambient Temperature

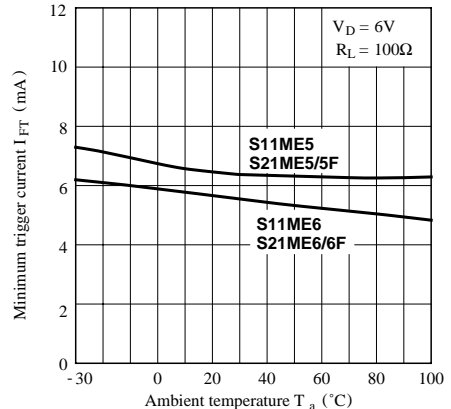


Fig. 5 Relative Repetitive Peak OFF-state Voltage vs. Ambient Temperature

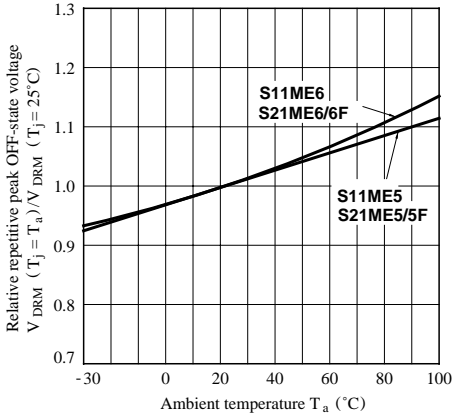


Fig. 6 ON-state Voltage vs. Ambient Temperature

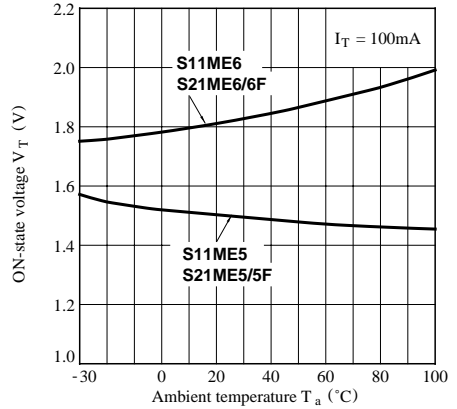


Fig. 7 Holding Current vs. Ambient Temperature

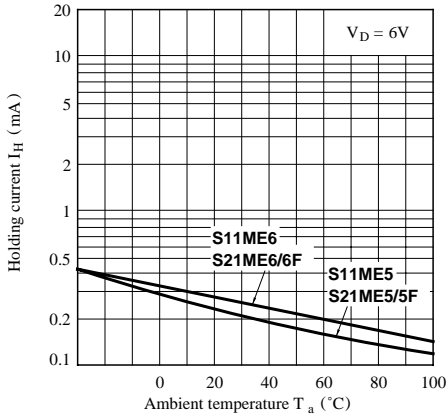


Fig. 8-a Repetitive Peak OFF-state Current vs. OFF-state Voltage (S21ME5/S21ME5F)

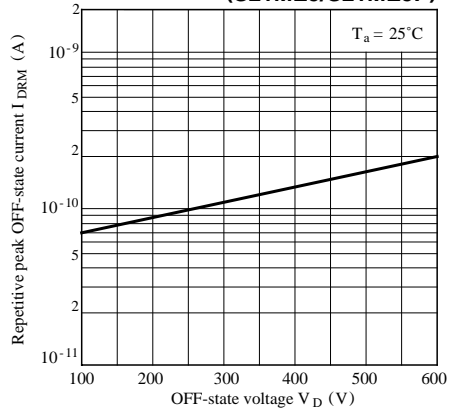


Fig. 8-b Repetitive Peak OFF-state Current vs. OFF-state Voltage (S21ME6/S21ME6F)

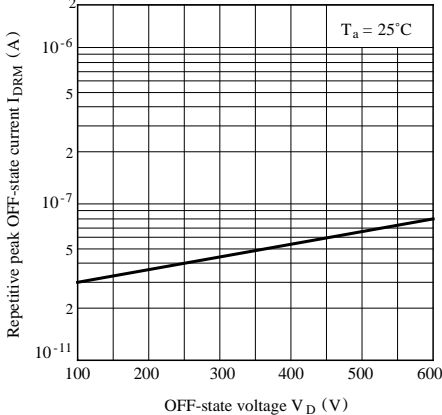


Fig. 9-a Repetitive Peak OFF-state Current vs. Ambient Temperature (S11ME5/S21ME5/S21ME5F)

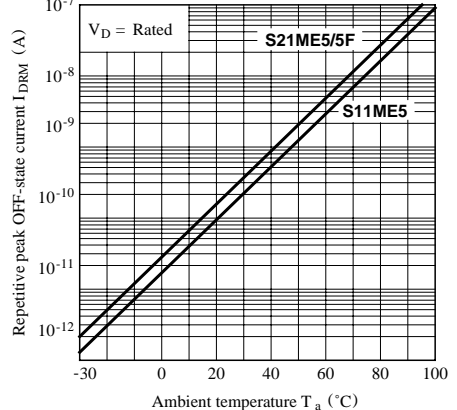


Fig. 9-b Repetitive Peak OFF-state Current vs. Ambient Temperature (S11ME6/S21ME6/S21ME6F)

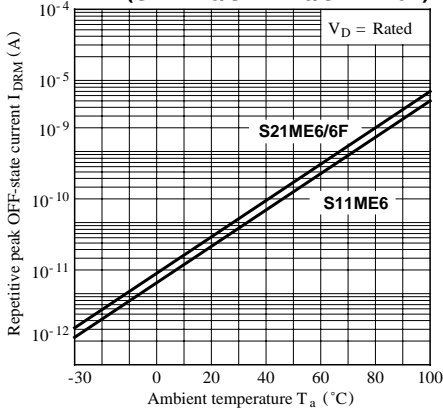


Fig.10 Turn-on Time vs. Forward Current

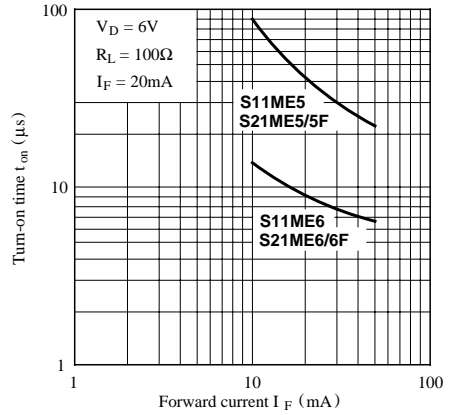


Fig11. Zero-cross Voltage vs. Ambient Temperature (S11ME6/S21ME6/S21ME6F)

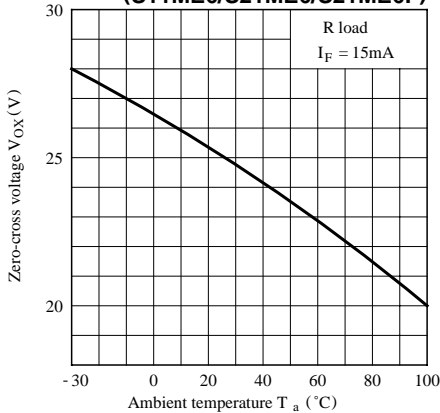
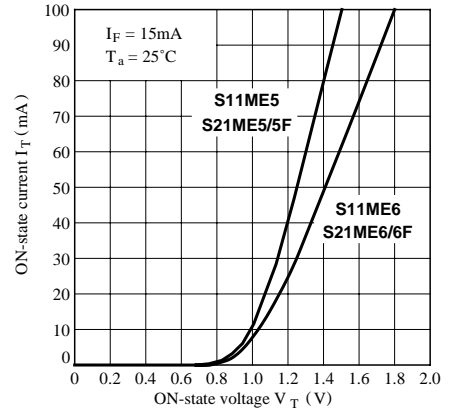


Fig.12 ON-state Current vs. ON-state Voltage



- Please refer to the chapter “Precautions for Use.” (Page 78 to 93).

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