



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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S12ME1/S12ME1F

European Safety Standard Approved, Long Creepage Distance Type Photothyristor Coupler

- ✿ Lead forming type (I type) and taping reel type (P type) of S12ME1/S12ME1F are also available. (S12ME1I/S12ME1FI, S12ME1P/S12ME1FP)
- ✿ DIN-VDE0884 approved type is also available as an option.

■ Features

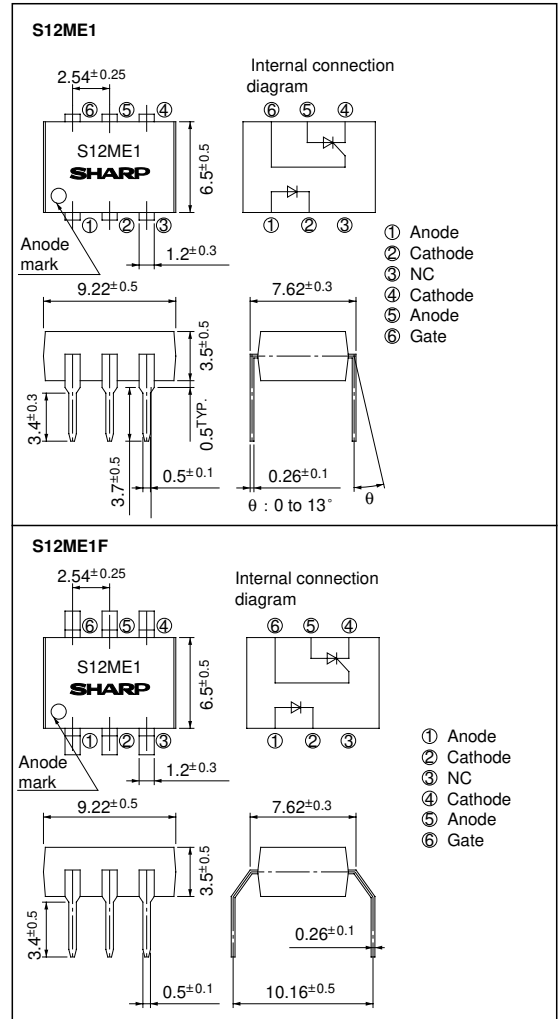
- Internal insulation distance : 0.4mm or more
- Creepage distance : 8mm or more
Space distance : 5mm or more (S12ME1)
8mm or more (S12ME1F)
- Recognized by UL file No. E64380
Approved by BSI (BS415 : NO.7088, BS7002 : NO.7410)

■ Applications

- ON-OFF operation for low power load
- For triggering medium or high power thyristor and triac
- Over voltage detection of switching power supplies

■ 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	0.2	A _{rms}
	*1 Peak one cycle surge current	I _{surge}	2	A
	*2 Repetitive peak OFF-state voltage	V _{DRM}	400	V
	*2 Repetitive peak OFF-state reverse voltage	V _{RRM}	400	V
	*3 Isolation voltage	V _{iso}	4 000	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 R_G = 20kΩ

*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 = 20mA	-	1.2	1.4	V
	Reverse current	I _R	V _R = 3V	-	-	10	μA
Output	Repetitive peak OFF-state current	I _{DRM}	V _{DRM} = Rated, R _G = 20kΩ	-	-	1	μA
	Repetitive peak OFF-state reverse voltage	I _{RRM}	V _{DRM} = Rated, R _G = 20kΩ	-	-	1	μA
	ON-state voltage	V _T	I _T = 0.2A	-	1.0	1.4	V
	Holding current	I _H	V _D = 6V, R _G = 20kΩ	-	-	1.0	mA
	Critical rate of rise of OFF-state voltage	dV/dt	V _{DRM} = 1/√2 • Rated, R _G = 20kΩ	3	-	-	V/μs
Transfer characteristics	Minimum trigger current	I _{FT}	V _D = 6V, R _L = 100Ω, R _G = 20kΩ	-	-	10	mA
	Isolation resistance	R _{ISO}	DC500V, 40 to 60% RH	5 x 10 ¹⁰	10 ¹¹	-	Ω
	Turn-on time	t _{on}	V _D = 6V, R _L = 100Ω, I _F = 20mA R _G = 20kΩ	-	-	50	μs

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

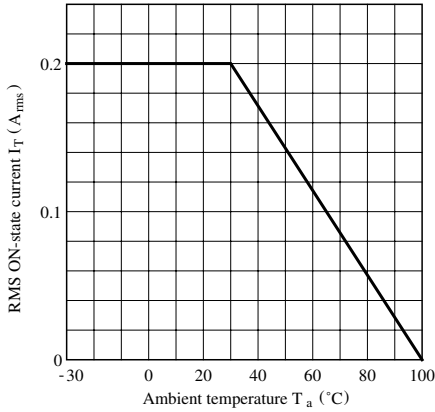


Fig. 2 Forward Current vs. Ambient Temperature

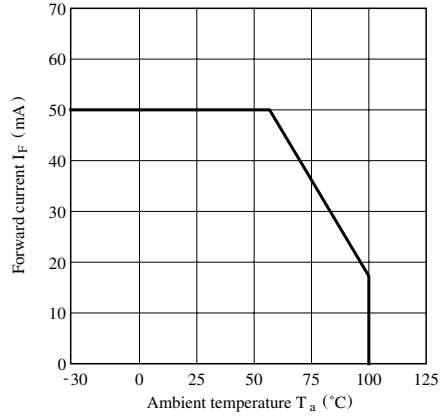


Fig. 3 Forward Current vs. Forward Voltage

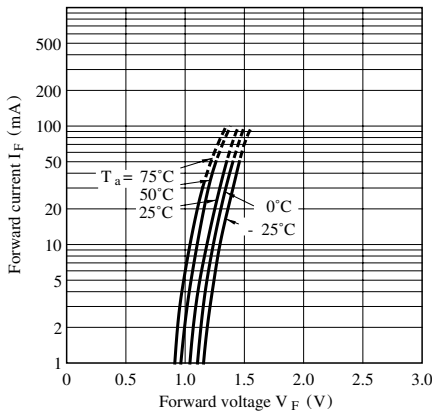


Fig. 4 Minimum Trigger Current vs. Ambient Temperature

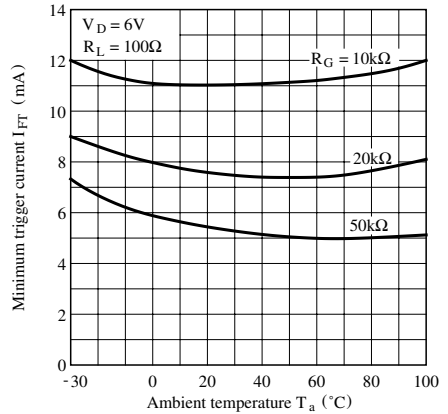


Fig. 5 Minimum Trigger Current vs. Gate Resistance

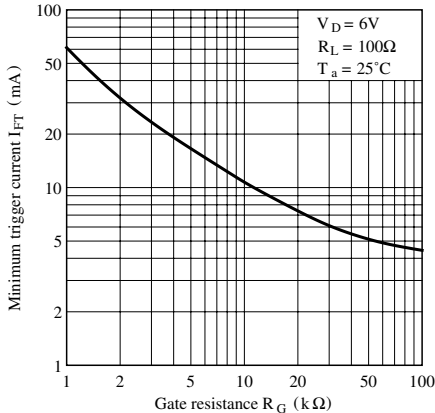


Fig. 6 Break Over Voltage vs. Ambient Temperature

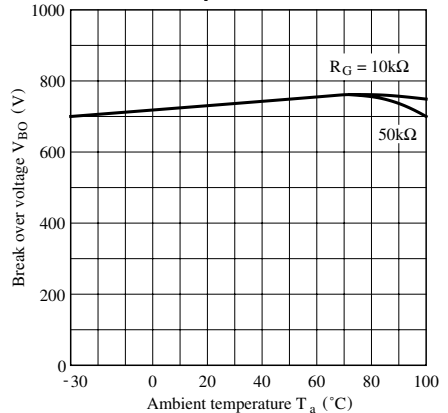


Fig. 7 Critical Rate of Rise of OFF-state Voltage vs. Ambient Temperature

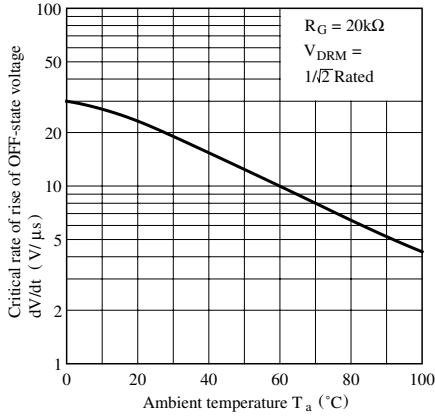


Fig. 8 Holding Current vs. Ambient Temperature

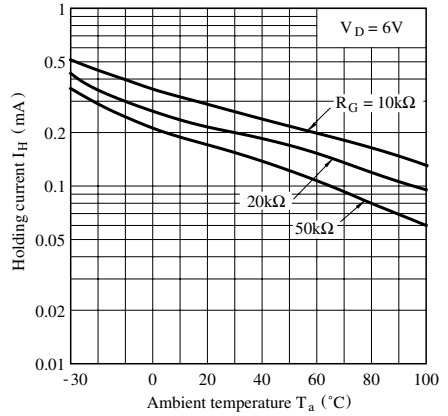


Fig. 9 Repetitive Peak OFF-state Current vs. Ambient temperature

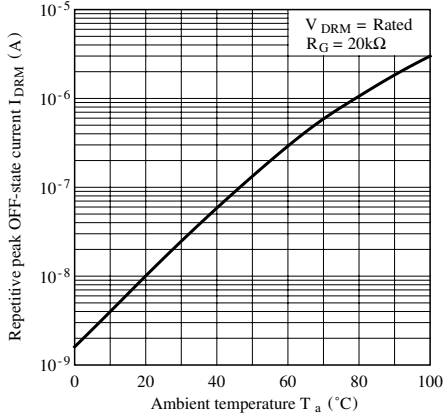


Fig.10 Turn-on Time vs. Forward Current

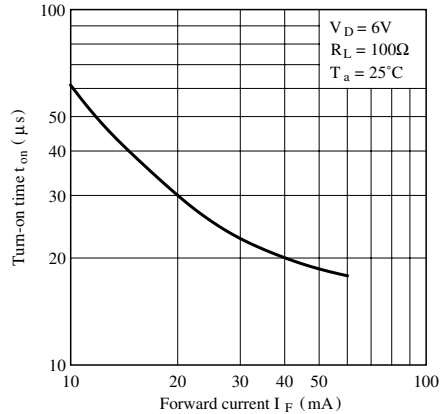
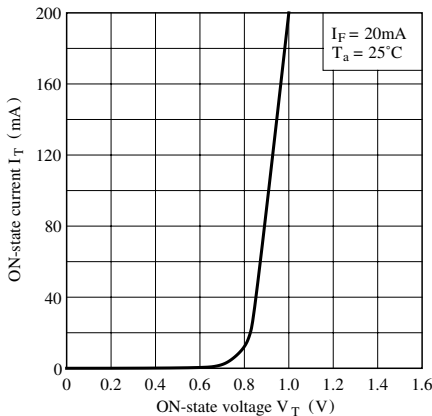
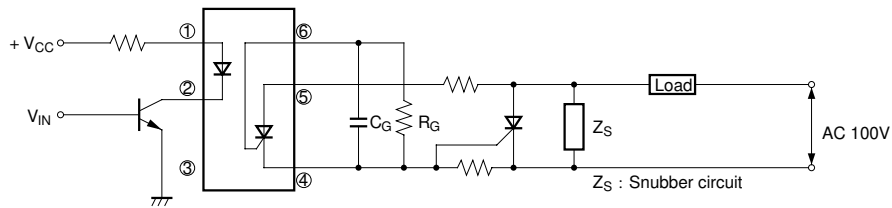


Fig.11 ON-state Current vs. ON-state Voltage

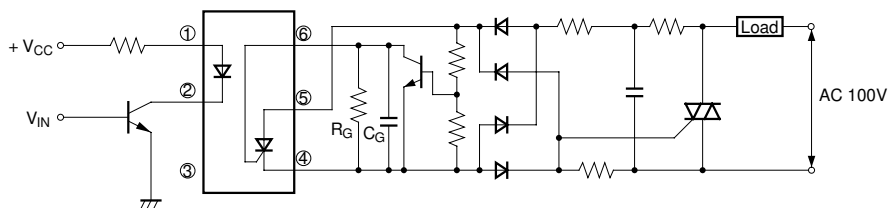


■ Basic Operation Circuit

Medium/High Power Thyristor Drive Circuit



Medium/High Power Triac Drive Circuit (Zero-cross Operation)



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