

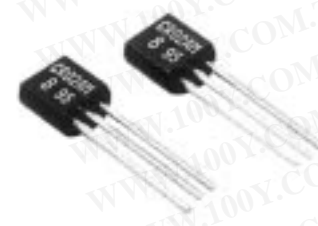
勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
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MITSUBISHI SEMICONDUCTOR (THYRISTOR)

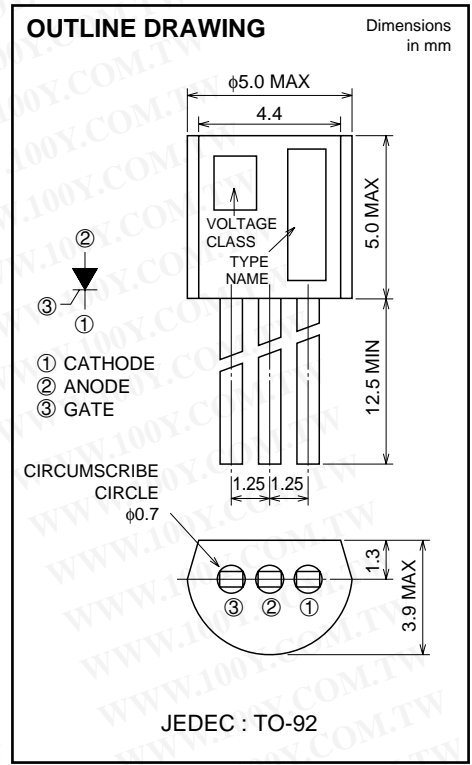
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LOW POWER USE
 PLANAR PASSIVATION TYPE

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- I_T (AV) **0.3A**
- V_{DRM} **200V/300V/400V**
- I_{GT} **100 μ A**



APPLICATION

Solid state relay, leakage protector, fire alarm, timer, ringcounter, electric blankets, strobe flasher, other general purpose control applications

MAXIMUM RATINGS

Symbol	Parameter	Voltage class			Unit
		4	6	8	
VRRM	Repetitive peak reverse voltage	200	300	400	V
VRSM	Non-repetitive peak reverse voltage	300	400	500	V
VR (DC)	DC reverse voltage	160	240	320	V
VDRM	Repetitive peak off-state voltage *1	200	300	400	V
VD (DC)	DC off-state voltage *1	160	240	320	V

Symbol	Parameter	Conditions	Ratings	Unit
I_T (RMS)	RMS on-state current		0.47	A
I_T (AV)	Average on-state current	Commercial frequency, sine half wave, 180° conduction, $T_a=30^\circ\text{C}$	0.3	A
I_{TSM}	Surge on-state current	60Hz sine half wave 1 full cycle, peak value, non-repetitive	10	A
I^2t	I^2t for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	0.4	A ² s
PGM	Peak gate power dissipation		0.1	W
PG (AV)	Average gate power dissipation		0.01	W
VFGM	Peak gate forward voltage		6	V
VRGM	Peak gate reverse voltage		6	V
IFGM	Peak gate forward current		0.1	A
T_j	Junction temperature		-40 ~ +125	°C
T_{stg}	Storage temperature		-40 ~ +125	°C
—	Weight	Typical value	0.23	g

*1. With Gate-to-cathode resistance $R_{GK}=1k\Omega$

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ELECTRICAL CHARACTERISTICS

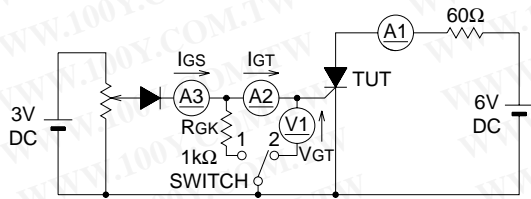
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IRRM	Repetitive peak reverse current	$T_j=125^\circ\text{C}$, V_{RRM} applied	—	—	0.1	mA
IDRM	Repetitive peak off-state current	$T_j=125^\circ\text{C}$, V_{DRM} applied, $R_{GK}=1\text{k}\Omega$	—	—	0.1	mA
V _{TM}	On-state voltage	$T_a=25^\circ\text{C}$, $I_{TM}=0.6\text{A}$, instantaneous value	—	—	1.6	V
V _{GT}	Gate trigger voltage	$T_a=25^\circ\text{C}$, $V_D=6\text{V}$, $I_T=0.1\text{A}$ *3	—	—	0.8	V
V _{GD}	Gate non-trigger voltage	$T_j=125^\circ\text{C}$, $V_D=1/2V_{DRM}$, $R_{GK}=1\text{k}\Omega$	0.2	—	—	V
I _{GT}	Gate trigger current	$T_j=25^\circ\text{C}$, $V_D=6\text{V}$, $I_T=0.1\text{A}$ *3	1	—	100*2	μA
I _H	Holding current	$T_j=25^\circ\text{C}$, $V_D=12\text{V}$, $R_{GK}=1\text{k}\Omega$	—	—	3	mA
R _{th(j-a)}	Thermal resistance	Junction to ambient	—	—	180	°C/W

*2. If special values of I_{GT} are required, choose at least two items from those listed in the table below. (Example: AB, BC)

Item	A	B	C
I _{GT} (μA)	1 ~ 30	20 ~ 50	40 ~ 100

The above values do not include the current flowing through the 1kΩ resistance between the gate and cathode.

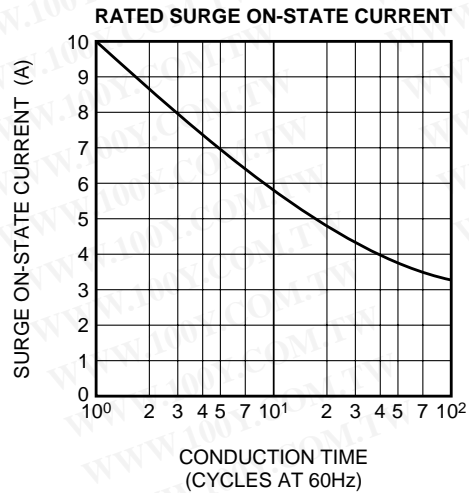
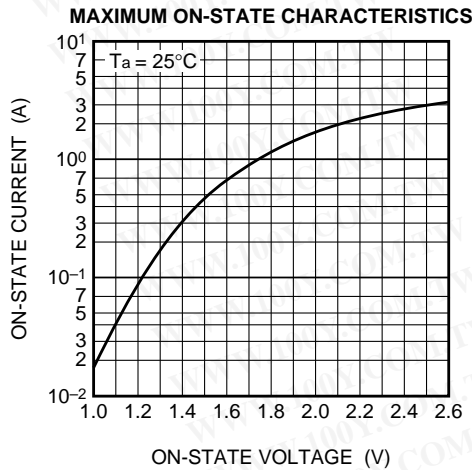
*3. I_{GT}, V_{GT} measurement circuit.



SWITCH 1 : I_{GT} measurement
SWITCH 2 : V_{GT} measurement
(Inner resistance of voltage meter is about 1kΩ)

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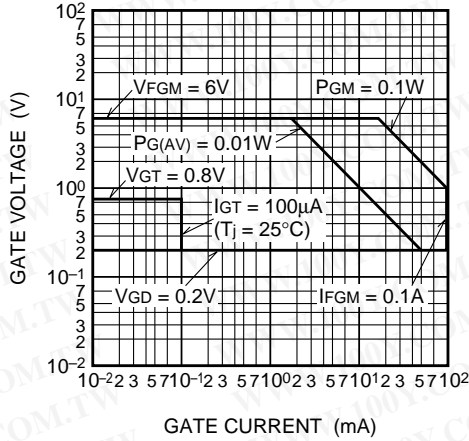
PERFORMANCE CURVES



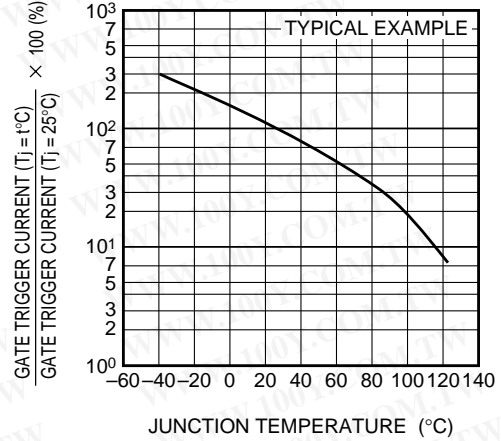
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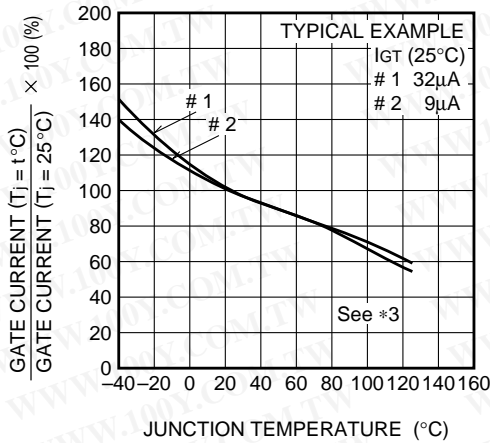
GATE CHARACTERISTICS



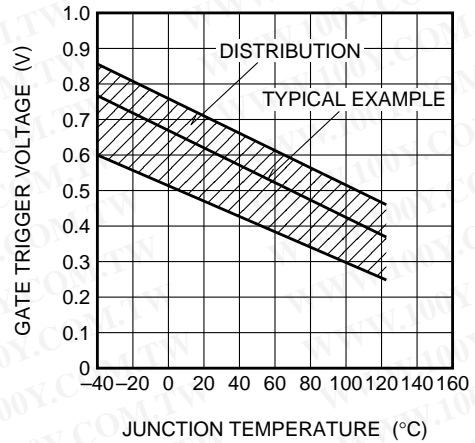
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



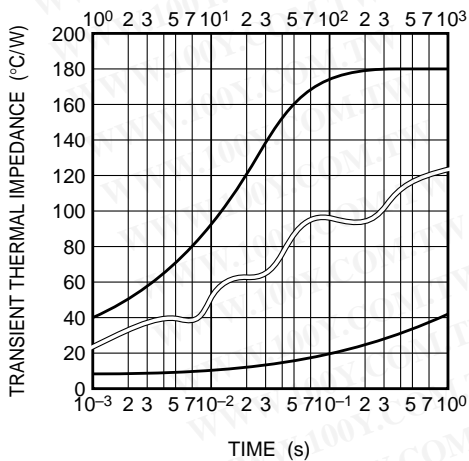
GATE CURRENT VS. JUNCTION TEMPERATURE



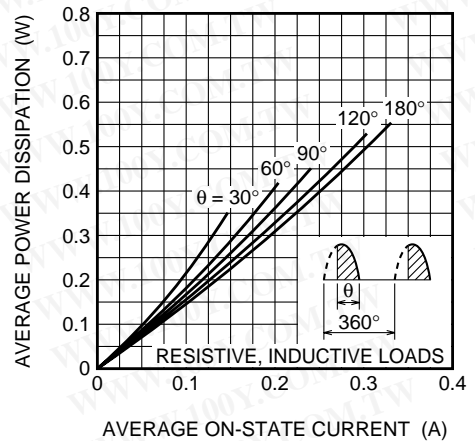
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO AMBIENT)



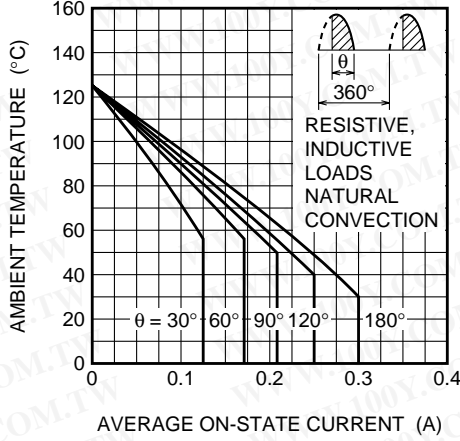
MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE HALF WAVE)



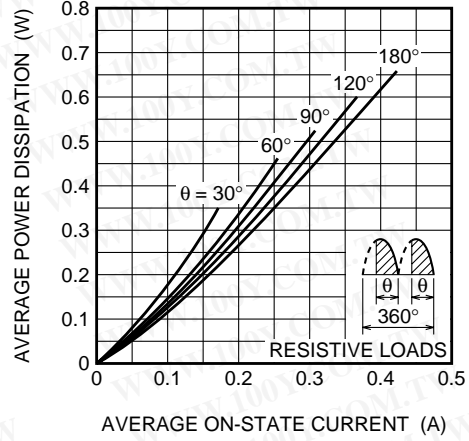
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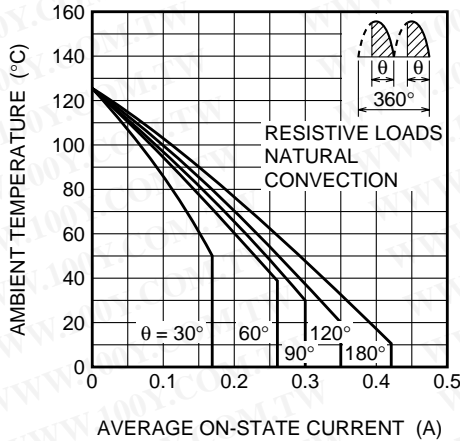
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)



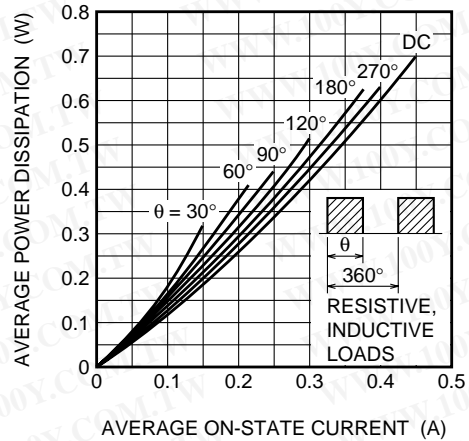
MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE FULL WAVE)



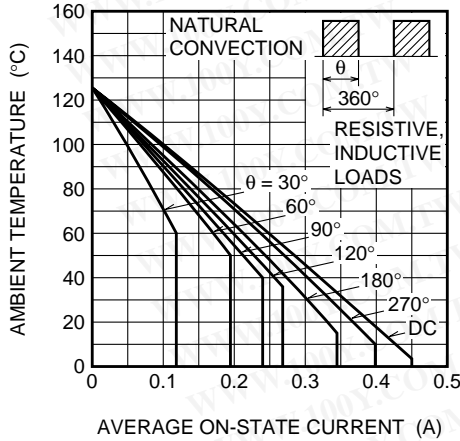
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)



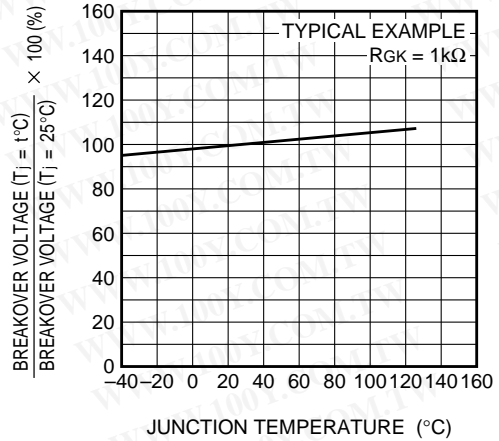
MAXIMUM AVERAGE POWER DISSIPATION (RECTANGULAR WAVE)



ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (RECTANGULAR WAVE)



BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE



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LOW POWER USE
 PLANAR PASSIVATION TYPE

