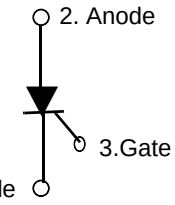
Discrete & Integration SEMICONDUCTOR

D2P4M

Sensitive Gate Silicon Controlled - Rectifiers

Symbol



BV_{DRM} = 400V

$I_{T(RMS)}$ = 2.0 A

I_{TSM} = 4 A

TO-126

Features

- Repetitive Peak Off-State Voltage : 400V
- R.M.S On-State Current ($I_{T(RMS)}$= 2.0 A)
- On-State Voltage (2.2V(max) @ I_{TM}= 4A)
- Pb - Free Packages are Available

General Description

Sensitive-gate triggering thyristor is suitable for the application where requiring low gate triggerring current system
Used for electric blanket ,electronic jar ,temperature control,lighting control such as a entertainment display.
Automatic ignition system , Battery charger .

Absolute Maximum Ratings (T_J = 25°C unless otherwise specified)

Symbol	Parameter	Condition	Ratings	Units
V_{DRM}	Repetitive Peak Off-State Voltage	sine wave,50 to 60Hz,gate open	400	V
$I_{T(AV)}$	Average On-State Current	half sine wave : T_C =77 °C	2.0	A
$I_{T(RMS)}$	R.M.S On-State Current	180° Conduction Angle	4	A
I_{TSM}	Surge On-State Current	1/2 Cycle, 60Hz, Sine Wave Non-Repetitive	20	A
I^2t	I^2t for Fusing	t = 8.3ms	1.65	A^2s
P_{GM}	Forward Peak Gate Power Dissipation	T_C= 77 °C, pulse width ≤ 1.0μs	0.5	W
$P_{G(AV)}$	Forward Average Gate Power Dissipation	T_C =77°C,pulse width ≤ 1.0μs	0.1	W
I_{FGM}	Forward Peak Gate Current	T_C =77 °C, pulse width ≤ 1.0μs	0.2	A
V_{RGM}	Reverse Peak Gate Voltage	T_C= 77 °C, pulse width ≤ 1.0μs	5.0	V
T_J	Operating Junction Temperature		- 40 ~ 125	°C
T_{STG}	Storage Temperature		- 40 ~ 125	°C

Electrical Characteristics (T_C = 25 °C unless otherwise noted)

Symbol	Items	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I_{DRM}	Repetitive Peak Off-State Current	$V_{AK} = V_{DRM}$ T_C = 25 °C T_C = 125 °C	— —	— —	10 200	μA
V_{TM}	Peak On-State Voltage (1)	I_{TM} = 4 A tp = 380μs	—		2.2	V
I_{GT}	Gate Trigger Current (2)	V_{AK} = 6 V(DC), R_L=10 Ω T_C = 25 °C	—	—	200	μA
V_{GT}	Gate Trigger Voltage (2)	V_D =6 V(DC), R_L=10 Ω T_C = 25 °C	—	—	1.5	V
V_{GD}	Non-Trigger Gate Voltage (1)	V_{AK} = 12 V, R_L=100 Ω T_C = 125 °C	0.2	—	—	V
dv/dt	Critical Rate of Rise Off-State Voltage	Linear slope up to $V_D = V_{DRM}$ 67% R_{GK} = 1 Kohm T_j = 125 °C	10	—	—	V/μs
I_H	Holdling Current	I_T = 20mA , Gate Open T_C = 25 °C	—	—	3	mA
$R_{th(j-c)}$	Thermal Impedance	Junction to case	—	—	10	°C/W
$R_{th(j-a)}$	Thermal Impedance	Junction to Ambient	—	—	75	°C/W

※ Notes :

1. Pulse Width = 1.0 ms , Duty cycle ≤ 1%
2. R_{GK} Current not Included in measurement

Fig 1. Gate Characteristics

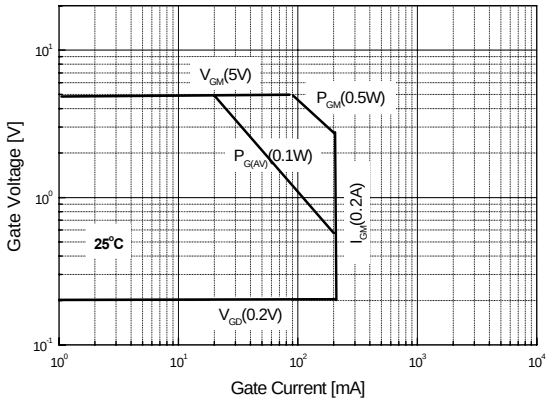


Fig 2. Maximum Case Temperature

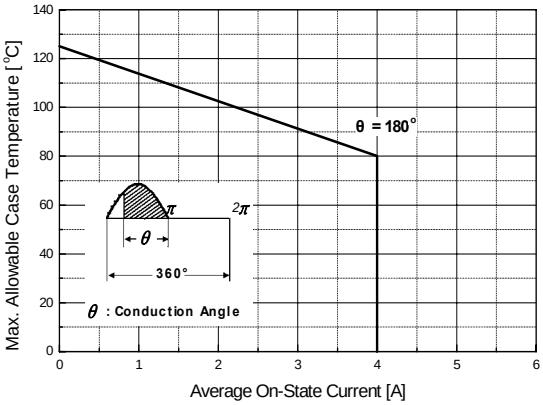


Fig 3. Typical Forward Voltage

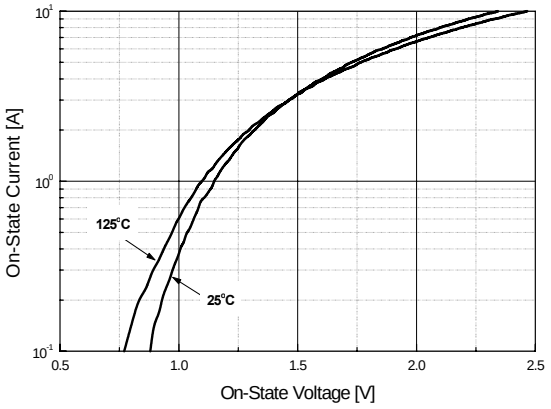


Fig 4. Thermal Response

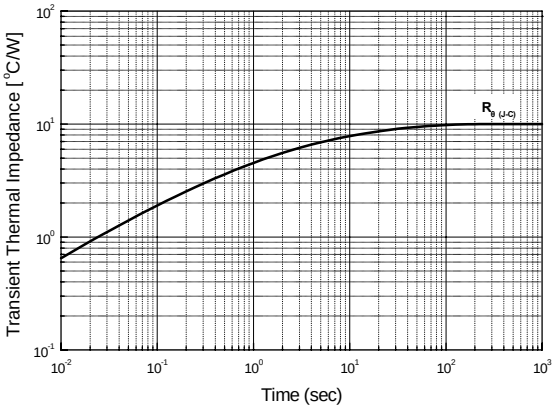


Fig 5. Typical Gate Trigger Voltage vs.

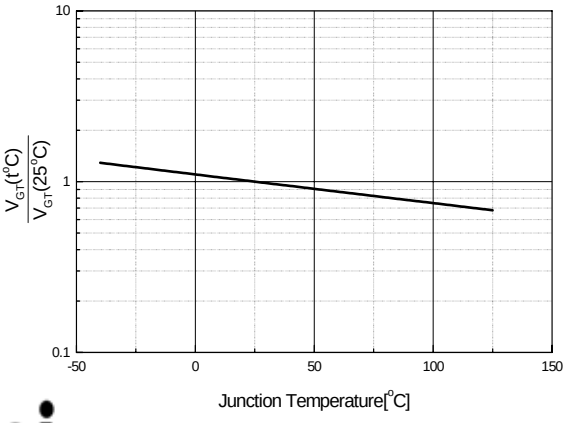


Fig 6. Typical Gate Trigger Current vs. Junction Temperature

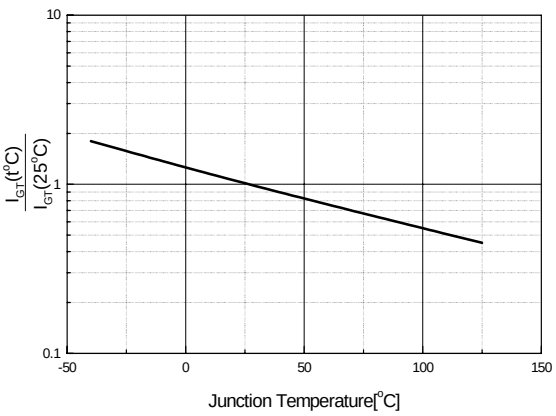


Fig 7. Typical Holding Current

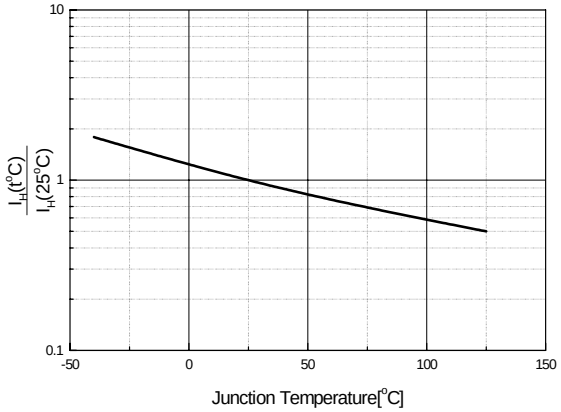
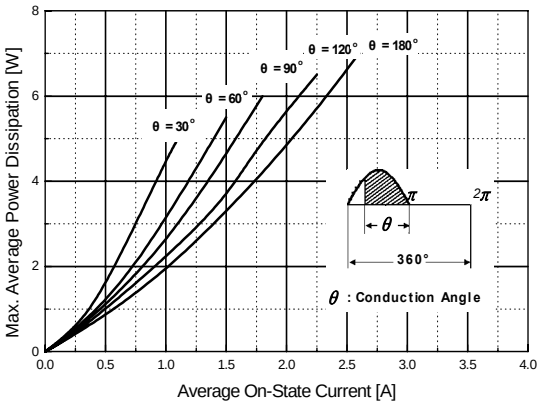


Fig 8. Power Dissipation



TO-126 Package Dimension

Dim.	mm			Inch		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	7.5		7.9	0.295		0.311
B	10.8		11.2	0.425		0.441
C	14.2		14.7	0.559		0.579
D	2.7		2.9	0.106		0.114
E		3.8			0.150	
F		2.5			0.098	
G	1.2		1.5	0.047		0.059
H		2.3			0.091	
I		4.6			0.181	
J	0.48		0.62	0.019		0.024
K	0.7		0.86	0.028		0.034
L		1.4			0.055	
ϕ		3.2			0.126