
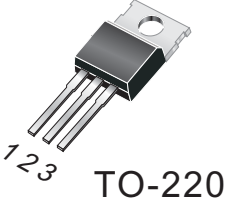


HAOPIN MICROELECTRONICS CO.,LTD.

Description

Glass passivated, sensitive gate thyristors in a plastic envelope, intended for use in general purpose switching and phase control applications. These devices are intended to be interfaced directly to microcontrollers, logic integrated circuits and other low power gate trigger circuits.

<p>Symbol</p> 		<p>Simplified outline</p>  <p>TO-220</p>	
Pin	Description		
1	Cathode (K)		
2	Anode (A)		
3	Gate(G)		
4	Anode		

Applications:

- ◆ Motor control
- ◆ Industrial and domestic lighting
- ◆ Heating
- ◆ Static switching

Features

- ◆ Blocking voltage to 600 V
- ◆ On-state RMS current to 8 A
- ◆ Ultra low gate trigger current

SYMBOL	PARAMETER		Value	Unit
V_{DRM}	Repetitive peak off-state voltages	MCR72-6 MCR72-8	400 600	V
$I_T (RMS)$	On-state rms current		8	A
I_{TSM}	Peak non-repetitive surge current		100	A

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Thermal resistance Junction to Case		-	-	2.2	°C/W
$R_{\theta JA}$	Thermal resistance Junction to ambient		-	-	60	°C/W

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Limiting values in accordance with the Maximum system(IEC 134)

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V_{DRM} V_{RRM}	Repetitive peak off-state Voltages	$T_j = -40$ to 110°C , Sine Wave, 50 to 60 Hz, Gate open		400 600	V
$I_{T(RMS)}$	on-state RMS current	$T_C = 83^\circ\text{C}$	-	8	A
I_{TSM}	Peak Non-repetitive surge current	1/2 Cycle, 60 Hz, $T_j = -40^\circ\text{C}$ to 110°C	-	100	A
I^2t	Circuit Fusing	$T = 8.3\text{ms}$	-	40	A^2S
I_{GM}	Peak gate current	$T \leq 10\mu\text{s}$	-	1.0	A
V_{GM}	Peak gate voltage	$T \leq 10\mu\text{s}$	-	± 5	V
P_{GM}	Peak gate power	$T \leq 10\mu\text{s}$	-	5	W
$P_{G(AV)}$	Average gate power		-	0.75	W
T_{stg}	Storage temperature Range		-40	+150	$^\circ\text{C}$
T_j	Operating junction Temperature Range		-40	+110	$^\circ\text{C}$

$T_j = 25^\circ\text{C}$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Static characteristics						
I_{GT}	Gate trigger current	$V_D = 12\text{V}$; $R_L = 100\Omega$	-	30	200	μA
I_H	Holding current	$V_D = 12\text{V}$, $I_{TM} = 100\text{mA}$	-	-	6	mA
V_{TM}	Peak forward on-state voltage	$I_{TM} = 16\text{A}$ peak, pulse width $\leq 1\text{ms}$	-	1.7	2.0	V
V_{GT}	Gate trigger voltage	$V_D = 12\text{V}$; $R_L = 100\Omega$ $V_D = \text{Rated } V_{DRM}$; $R_L = 10\text{k}\Omega$, $T_j = 110^\circ\text{C}$	0.1	0.5	1.5	V

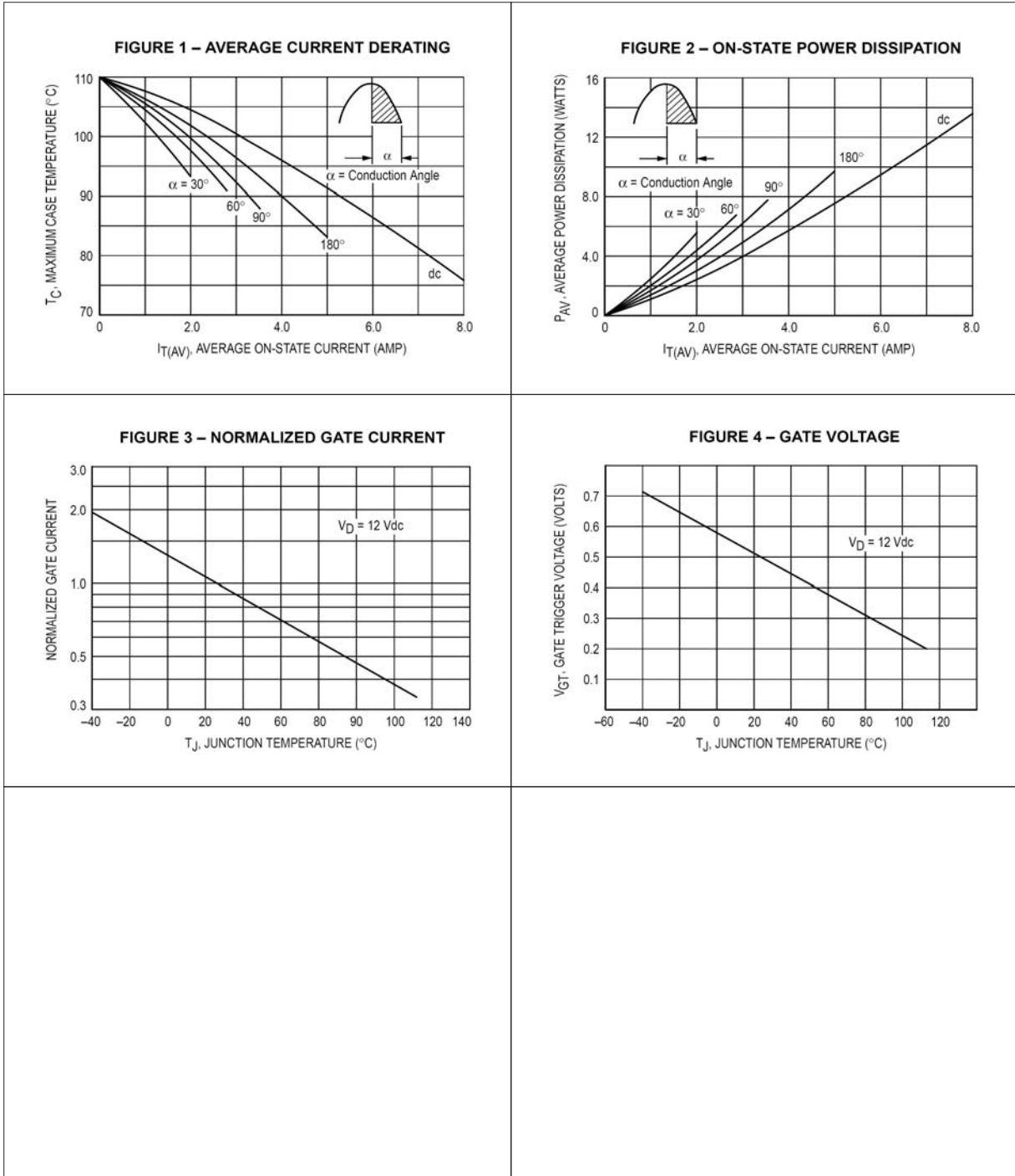
OFF CHARACTERISTICS

I_{RRM} , I_{DRM}	Peak Repetitive Forward or Reverse Blocking current(1) ($V_{AK} = \text{Rated } V_{DRM}$ or V_{RRM} ; $R_{GK} = 1\text{k}\Omega$)	$T_j = 25^\circ\text{C}$ $T_j = 110^\circ\text{C}$	-	-	10 500	μA
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Dynamic Characteristics

D_v/dt	Critical rate of rise of Off-state voltage	$V_D = \text{Rated } V_{DRM}$; $T_j = 110^\circ\text{C}$; Exponential waveform;	-	10	-	V/ μs
t_{gt}	Gate controlled turn-on time	$I_{TM} = 16\text{A}$; $V_D = \text{Rated } V_{DRM}$; $I_G = 2\text{mA}$	-	1	-	μs

Description



MECHANICAL DATA

