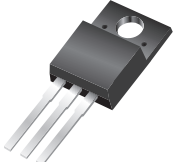


HAOPIN MICROELECTRONICS CO.,LTD.

Description

Passivated high commutation triacs in a plastic envelope intended for use in circuits where high static and dynamic dV/dt and high dI/dt can occur. These devices will commute the full rated ms current at the maximum rated junction temperature without the aid of a snubber.

Symbol		Simplified outline	
			
		TO-220F	
Pin	Description		
1	Main terminal 1 (T1)		
2	Main terminal 2 (T2)		
3	gate (G)		
TAB	Main terminal 2 (T2)		

Applications:

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

Features

- ◆ Blocking voltage to 600-1000 V
- ◆ On-state RMS current to 8 A

SYMBOL	PARAMETER		Value	Unit
V_{DRM}	Repetitive peak off-state voltages	HP8Q60MC HP8Q80MC HP8QK0MC	600 800 1000	V
$I_T (RMS)$	RMS on-state current (full sine wave)		8	A
I_{TSM}	Non-repetitive peak on-state current (full cycle, T_j initial=25°C)		71	A

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$R_{th\ j-mb}$	Junction to mounting case	full cycle half cycle	—	—	2.0 2.4	K/W
$R_{th(j-a)}$	Junction to ambient	in free air	—	60	—	K/W



HP8Q series MC

Three quadrant triacs

HAOPIN MICROELECTRONICS CO.,LTD.

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

SYMBOL	PARAMETER	CONDITIONS	MIN	Value	UNIT
V_{DRM}/V_{RRM}	Repetitive peak off-state Voltages	HP8Q60MC HP8Q80MC HP8QK0MC	-	600 800 1000	V
$I_{T(RMS)}$	RMS on-state current	Full sine wave; $T_{mb} \leq 102^{\circ}C$	-	8	A
I_{TSM}	Non repetitive surge peak on-state current	Full sine wave; $T_j = 25^{\circ}C$ prior to surge $t = 20ms$ $t = 16.7ms$	-	65	A
			-	71	A
I^2t	I^2t value for fusing	$t_p = 10ms$	-	21	A^2S
dI_T/dt	Repetitive rate of rise of on-state current after triggering	$I_{TM} = 12A$, $I_G = 0.2A$; $dI_G/dt = 0.2 A/\mu s$	-	100	$A/\mu s$
I_{GM}	Peak gate current		-	2	A
V_{GM}	Peak gate voltage		-	5	V
P_{GM}	Peak gate power		-	5	W
$P_{G(AV)}$	Average gate power	Over any 20 ms period	-	0.5	W
T_{stg}	Storage temperature		-40	150	$^{\circ}C$
T_j	Operating junction temperature range		-40	125	$^{\circ}C$

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Static characteristics						
I_{GT}	Gate trigger current ²	$V_D = 12V$; $I_T = 0.1 A$ T2+ G+ T2+ G- T2- G-	2	-	35	mA
			2	-	35	mA
			2	-	35	mA
I_L	Latching current	$V_D = 12V$; $I_{GT} = 0.1 A$ T2+ G+ T2+ G- T2- G-	-	31	60	mA
			-	34	90	mA
			-	30	60	mA
I_H	Holding current	$V_D = 12V$; $I_{GT} = 0.1 A$	-	31	60	mA
V_T	On-state voltage	$I_T = 10 A$	-	1.3	1.65	V
V_{GT}	Gate trigger voltage	$V_D = 12 V$; $I_T = 0.1 A$ $V_D = 400V$; $I_T = 0.1A$; $T_j = 125^{\circ}C$	-	0.7	1.5	V
			0.25	0.4	-	V
I_D	Off-state leakage current	$V_D = V_{DRM(max)}$; $T_j = 125^{\circ}C$	-	0.1	0.5	mA

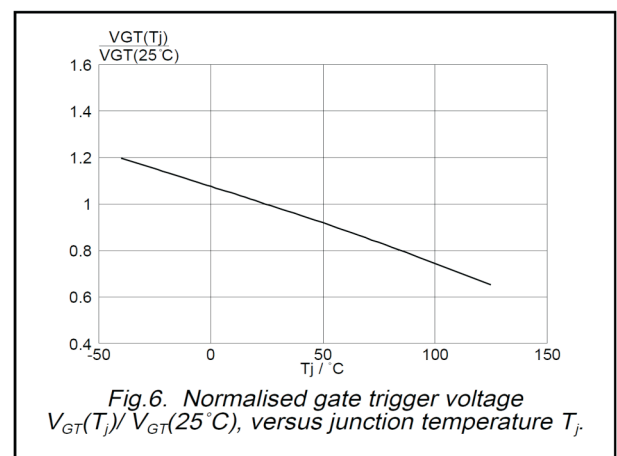
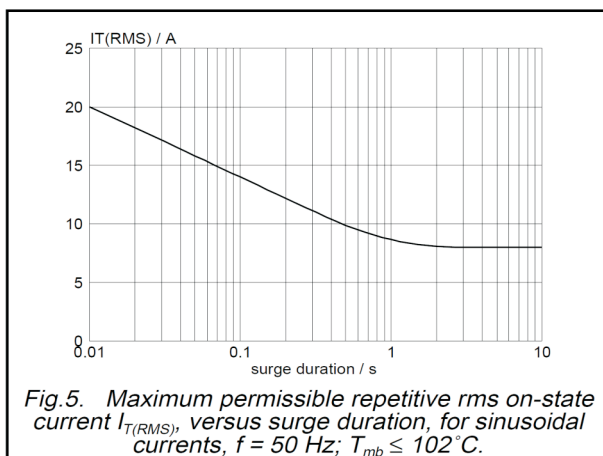
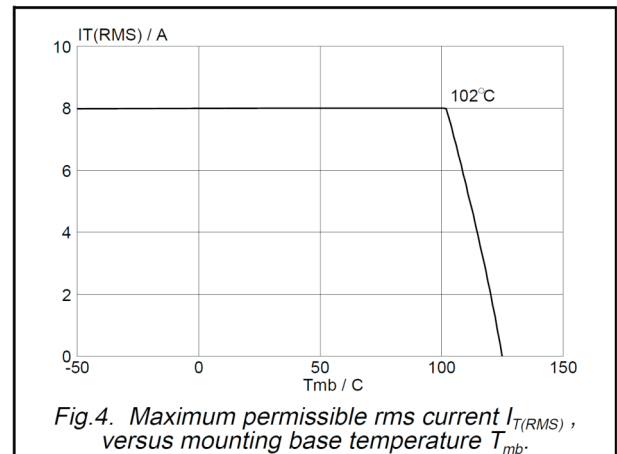
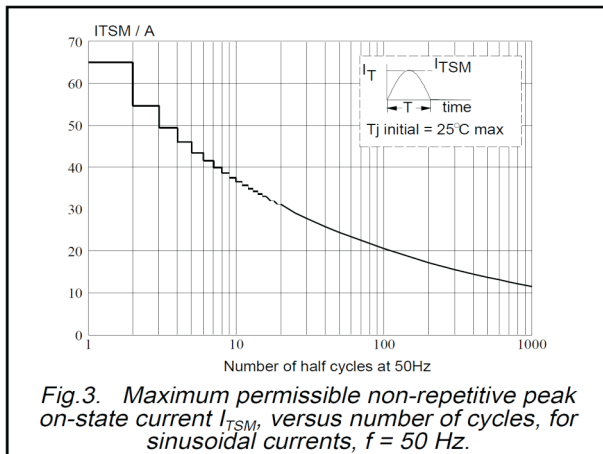
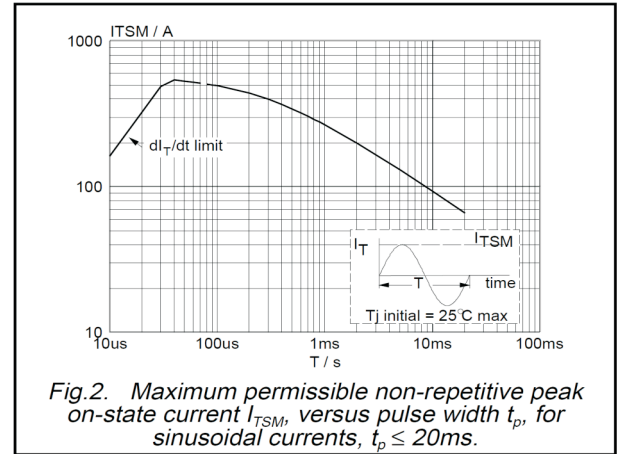
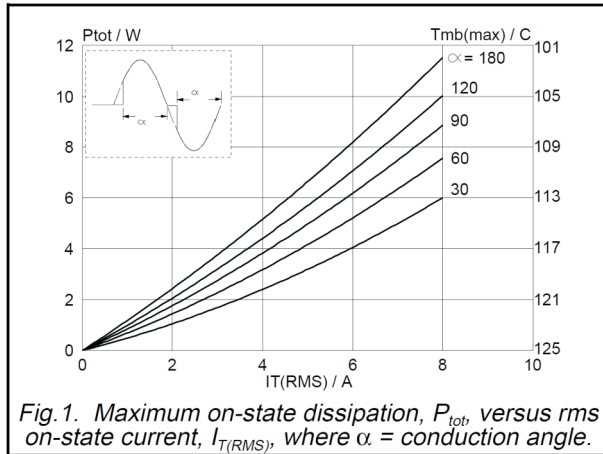
Dynamic Characteristics

dV_D/dt	Critical rate of rise of off-state voltage	$V_D = 67\% V_{DRM}$ gate open; $T_j = 125^{\circ}C$ exponential waveform; gate open circuit	1000	4000	-	$V/\mu s$
dI_{com}/dt	Critical rate of change of commutating current	$V_{DM} = 400V$; $T_j = 125^{\circ}C$; $I_{T(RMS)} = 8 A$ without snubber; gate open circuit	-	14	-	A/ms
t_{gt}	Gate controlled turn-on time	$I_{TM} = 12A$; $V_D = V_{DRM(max)}$; $I_G = 0.1A$; $dI_G/dt = 5A/\mu s$	-	2	-	μs

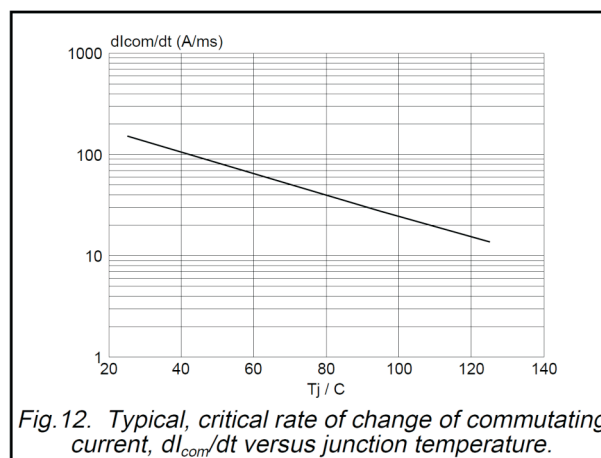
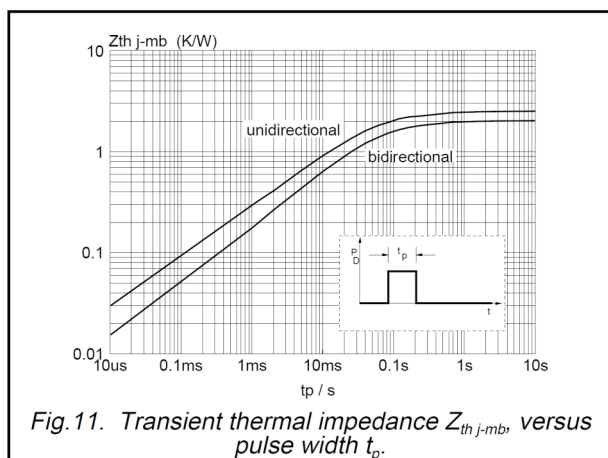
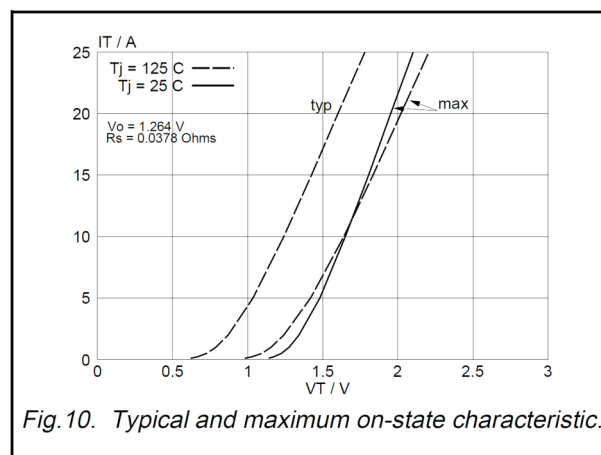
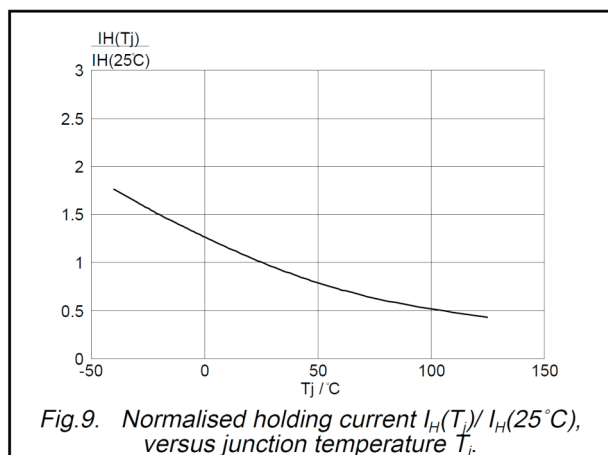
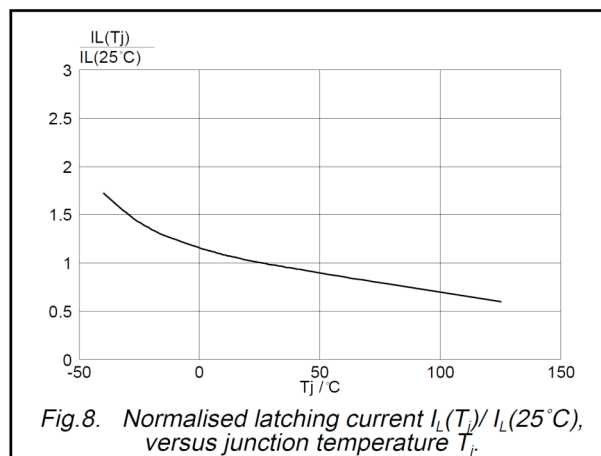
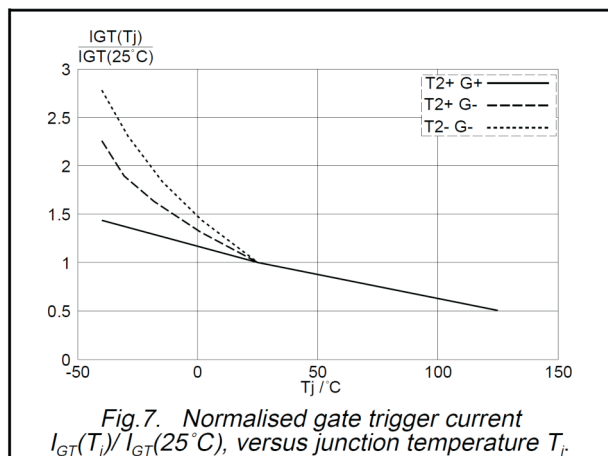
Note1: minimum I_{GT} is guaranteed at 5% of I_{GT} max.

Note2: for both polarities of A2 referenced to A1.

Description



Description





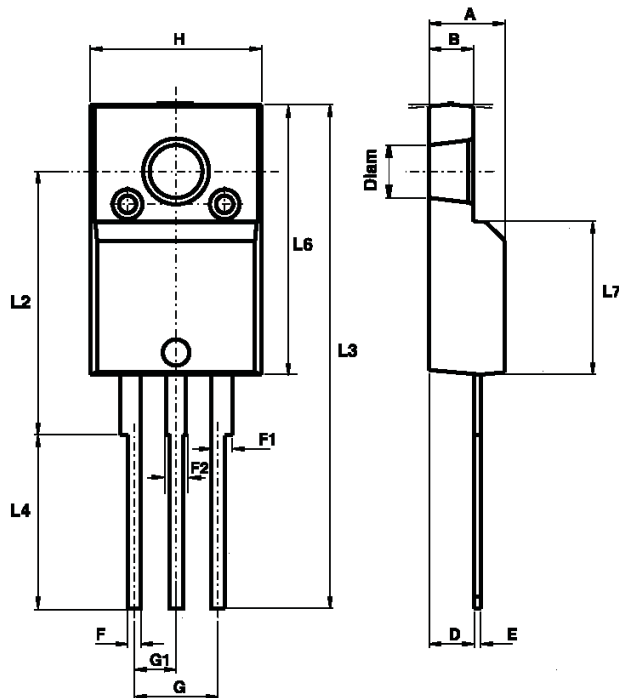
HP8Q series MC

Three quadrant triacs

HAOPIN MICROELECTRONICS CO.,LTD.

MECHANICAL DATA

Dimensions in mm
Net Mass: 2 g



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.40	4.60	0.173	0.181
B	2.50	2.70	0.098	0.106
D	2.50	2.75	0.098	0.108
E	0.40	0.70	0.016	0.028
F	0.75	1.00	0.030	0.039
F1	1.15	1.70	0.045	0.067
F2	1.15	1.70	0.045	0.067
G	4.95	5.20	0.195	0.205
G1	2.40	2.70	0.094	0.106
H	10.00	10.40	0.394	0.409
L2	16.00 typ.		0.630 typ.	
L3	28.60	30.60	1.125	1.205
L4	9.80	10.60	0.386	0.417
L6	15.90	16.40	0.626	0.646
L7	9.00	9.30	0.354	0.366
Diam	3.00	3.20	0.118	0.126

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