



HMX1225 / HMM1225

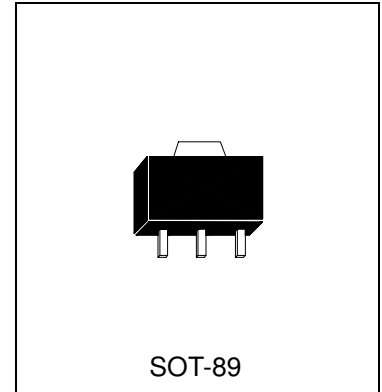
0.8A 300/380 VOLTAGE SCRS IGT<200uA

Description

The HMX1225/HMM1225 series silicon controlled rectifiers are high performance planar diffused PNP devices. These parts are intended for low cost high volume applications.

Absolute Maximum Ratings (T_A=25°C)

Parameter	Part No.	Symbol	Min.	Max.	Unit	Test Conditions
Repetitive Peak Off State Voltage	HMX1225	V _{DRM}	380	-	V	T _J =40°C to 125°C (R _{GK} =1K)
	HMM1225	V _{DRM}	300	-	V	
On-State Current		I _{T(rms)}	0.8	-	A	T _C =40°C
Average On-State Current		I _{T(AV)}	0.5	-	A	Half Cycle=180°, T _C =40°C
Peak Reverse Gate Voltage		V _{GRM}	8	-	V	I _{GR} =10uA
Peak Gate Current		I _{GM}	1	-	A	10us max
Gate Dissipation		P _{G(AV)}	0.1	-	W	20ms max
Operating Temperature		T _J	-40	125	°C	
Storage Temperature		T _{stg}	-40	125	°C	
Soldering Temperature		T _{slid}	-	250	°C	1.6mm from case 10s max



Classification Of IGT

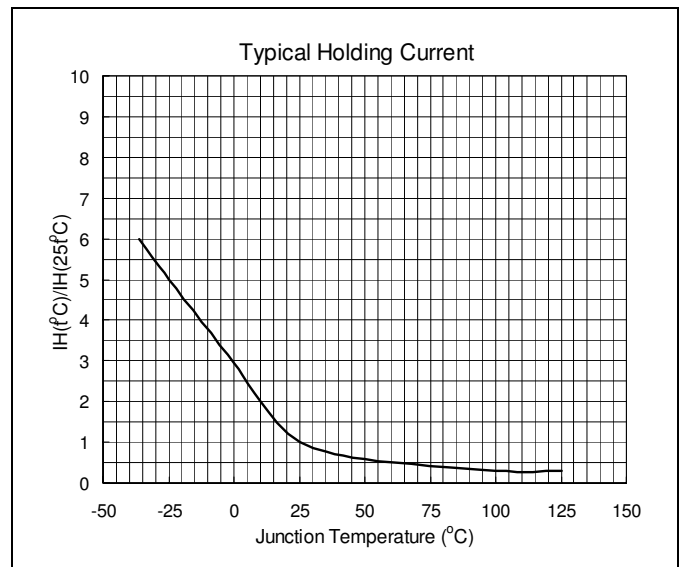
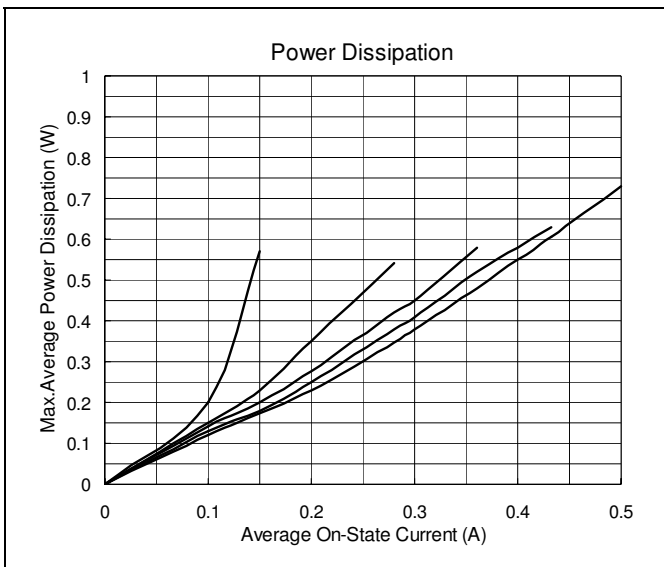
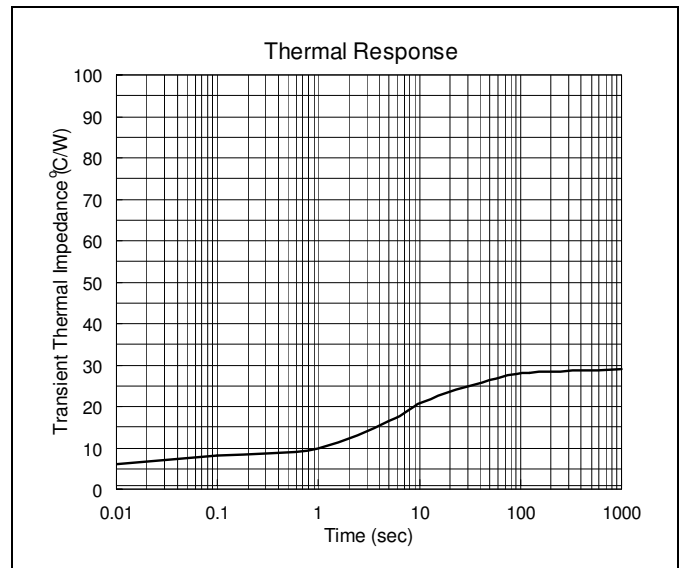
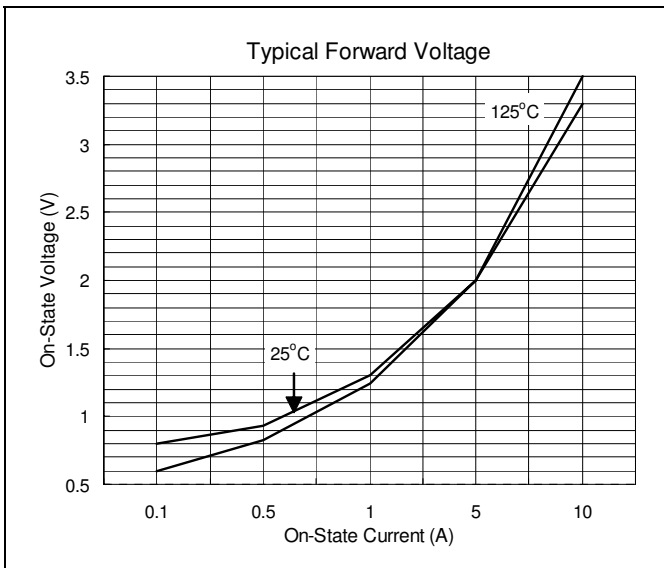
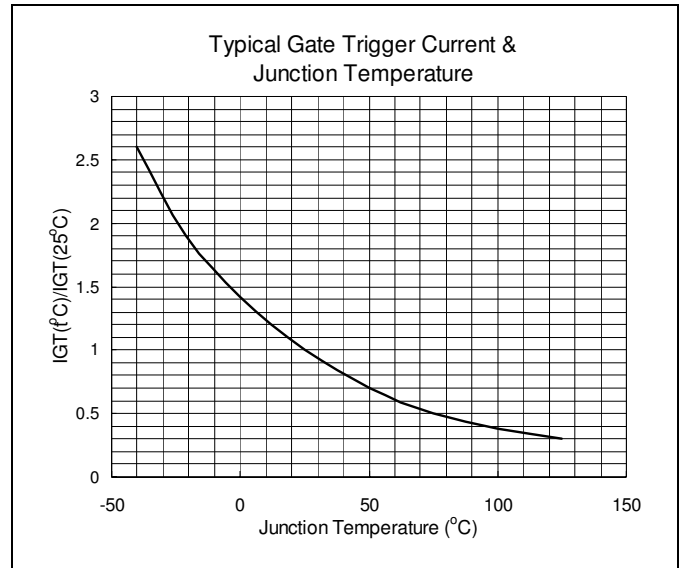
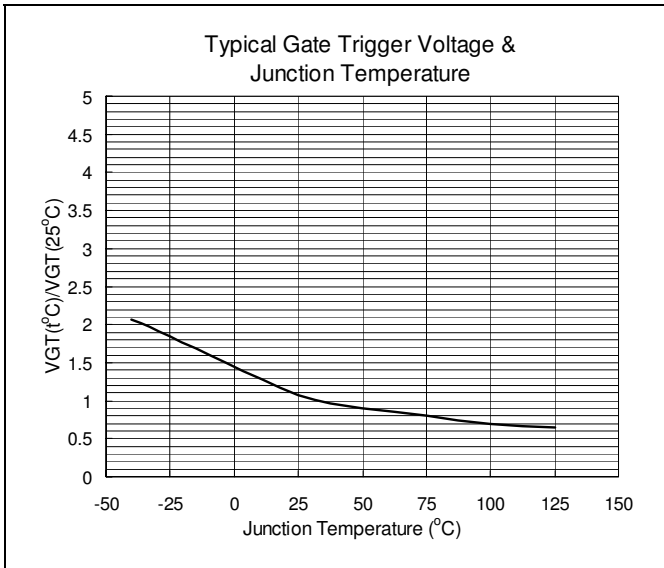
Rank	A	C
HMX1225	10-23 uA	17-55 uA
HMM1225	10-23 uA	17-55 uA

Electrical Characteristics (T_A=25°C)

Parameter	Symbol	Min	Max	Unit	Test Conditions
Off-State Leakage Current	I _{DRM}	-	0.1	mA	@V _{DRM} (R _{GK} =1K), T _J =125°C
Off-State Leakage Current	I _{DRM}	-	5	uA	@V _{DRM} (R _{GK} =1K), T _J =25°C
On-State Voltage	V _T	-	1.4	V	at I _T =0.4A, T _J =25°C
		-	2.2	V	at I _T =0.8A, T _J =25°C
On-State Threshold Voltage	V _{T(TO)}	-	0.95	V	T _J =125°C
On-State Slops Resistance	r _T	-	600	Ohm	T _J =125°C
Gate Trigger Current	I _{GT}	-	200	uA	V _D =7V
Gate Trigger Voltage	V _{GT}	-	0.8	V	V _D =7V
Holding Current	I _H	-	5	mA	R _{GK} =1K(ohm)
Latching Current	I _L	-	6	mA	R _{GK} =1K(ohm)
Critical Rate of Voltage Rise	dv/dt	25	-	V/us	V _D =0.67*V _{DRM} (R _{GK} =1K), T _J =125°C
Critical Rate of Current Rise	di/dt	30	-	A/us	I _G =10mA, diG/dt=0.1 A/us, T _J =125°C
Gate Controlled Delay Time	t _{gd}	-	500	ns	I _G =10mA, diG/dt=0.1 A/us
Commutated Turn-off Time	t _g	-	200	us	T _C =85°C, V _D =0.67*V _{DRM} V _R =35V, I _T =I _{T(AV)}
Thermal Resistance junc.to case	R _{θjc}	100	-	K/W	
Thermal Resistance junc. to amb	R _{θja}	200	-	K/W	



Characteristics Curve





SOT-89 Dimension

3-Lead SOT-89 Plastic
Surface Mounted Package
HSMC Package Code: M

HMX1225 Marking:

Date Code: [][][][][][] Control Code: [][][][][][]
 Pb Free Mark: [][][][][][]
 Pb-Free: "●" (Note) Normal: None

HMM1225 Marking:

Date Code: [][][][][][] Control Code: [][][][][][]
 Pb Free Mark: [][][][][][]
 Pb-Free: "●" (Note) Normal: None

Note: Green label is used for pb-free packing

Pin Style: 1.Gate 2.Anode 3.Cathode

Material:

- Lead solder plating: Sn60/Pb40 (Normal), Sn/3.0Ag/0.5Cu or Pure-Tin (Pb-free)
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

DIM	Min.	Max.
A	4.40	4.60
B	4.05	4.25
C	1.50	1.70
D	2.40	2.60
E	0.36	0.51
F	*1.50	-
G	*3.00	-
H	1.40	1.60
I	0.35	0.41

*: Typical, Unit: mm

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Head Office And Factory:

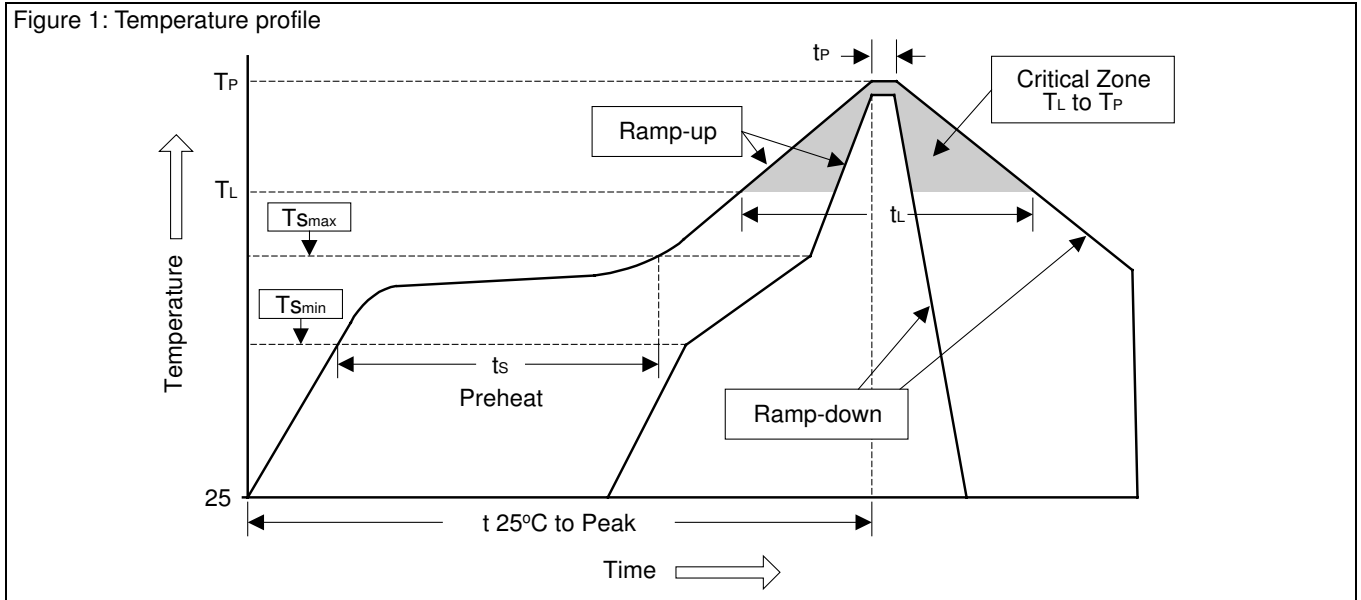
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Soldering Methods for HSMC's Products

1. Storage environment: Temperature=10°C~35°C Humidity=65%±15%
2. Reflow soldering of surface-mount devices

Figure 1: Temperature profile



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	<3°C/sec	<3°C/sec
Preheat		
- Temperature Min (T_{smin})	100°C	150°C
- Temperature Max (T_{smax})	150°C	200°C
- Time (min to max) (t_s)	60~120 sec	60~180 sec
T_{smax} to T_L		
- Ramp-up Rate	<3°C/sec	<3°C/sec
Time maintained above:		
- Temperature (T_L)	183°C	217°C
- Time (t_L)	60~150 sec	60~150 sec
Peak Temperature (T_P)	240°C +0/-5°C	260°C +0/-5°C
Time within 5°C of actual Peak Temperature (t_p)	10~30 sec	20~40 sec
Ramp-down Rate	<6°C/sec	<6°C/sec
Time 25°C to Peak Temperature	<6 minutes	<8 minutes

3. Flow (wave) soldering (solder dipping)

Products	Peak temperature	Dipping time
Pb devices.	245°C ±5°C	5sec ±1sec
Pb-Free devices.	260°C +0/-5°C	5sec ±1sec