



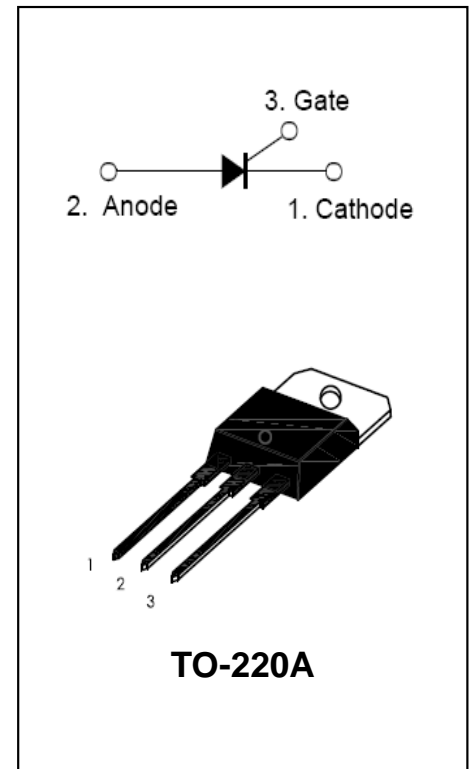
IPS61225 series of silicon controlled rectifiers are specifically designed for medium power switching and phase control applications.

High current density due to double mesa echnology; SIPOS and Glass passivation technology used has reliable operation up to 125°C junction temperature. Low Igt parts available.

Typical applications are in rectification (softstart) and these products are designed to be used with international recetifier input diodes, switches and output recetifiers which are available in identical package outlines.

MAIN FEATURES

Symbol	Value	Unit
IT(RMS)	25	A
VDRM / VRRM	1200	V
V _{TM}	≤ 1.6	V



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
RMS on-state current (Tc = 110°C, 180° conduction half sine wave)	IT(RMS)	25	A
Average on-state current (Tc = 110°C, 180° conduction half sine wave)	IT(AV)	16	A
Storage Junction Temperature Range	Tstg	-40 to +150	°C
Operating Junction Temperature Range	Tj	-40 to +125	°C
Repetitive Peak Off-state Voltage Tj = 25°C	VDRM	1200	V
Repetitive Peak Reverse Voltage Tj = 25°C	VRRM	1200	V
Non Repetitive Peak Off-state Voltage Tj = 25°C	VDSM	1300	V
Non Repetitive Peak Reverse Voltage Tj = 25°C	VRSM	1300	V
One cycle Non Repetitive surge current, 10ms sine pulse, rated VRRM applied	ITSM	250	A
One cycle Non Repetitive surge current, 10ms sine pulse, no voltage applied		260	
I²t Value for fusing, 10ms sine pulse, rated VRRM applied	I²t	310	A²s
I²t Value for fusing, 10ms sine pulse, no voltage applied		320	
Critical rate of rise of turned – on current (I _G = 2 X I _{GT} , Tj = 125°C)	dI/dt	100	A/us
Peak gate current tp = 20us, Tj = 125°C	I _{GM}	4	A
Average gate power dissipation Tj = 125°C	PG(AV)	1	W

ELECTRICAL CHARACTERISTICS (T_j = 25 °C unless otherwise specified)

Symbol	Test Condition		IPS1225-xxA		Unit
				40	
I _{GT}	Required DC gate current to trigger at 25 °C at - 40 °C at 125 °C	MAX	40 100 15		mA
V _{GT}	Required DC voltage to trigger at 25 °C (anode supply = 6V, resistive load) at - 40 °C at 125 °C	MAX	1.5 2.5 1.0		V
V _{GD}	DC gate voltage not to trigger (T _j = 125 °C, V _{DRM} = rated value)	MAX	0.2		V
I _L	I _G = 1.2 I _{GT}	MAX	80		mA
I _H	Holding current	MAX	60		mA
dV/dt	V _D = 67% V _{DRM} gate open T _j = 125 °C	MIN	500		V/us

STATIC CHARACTERISTICS

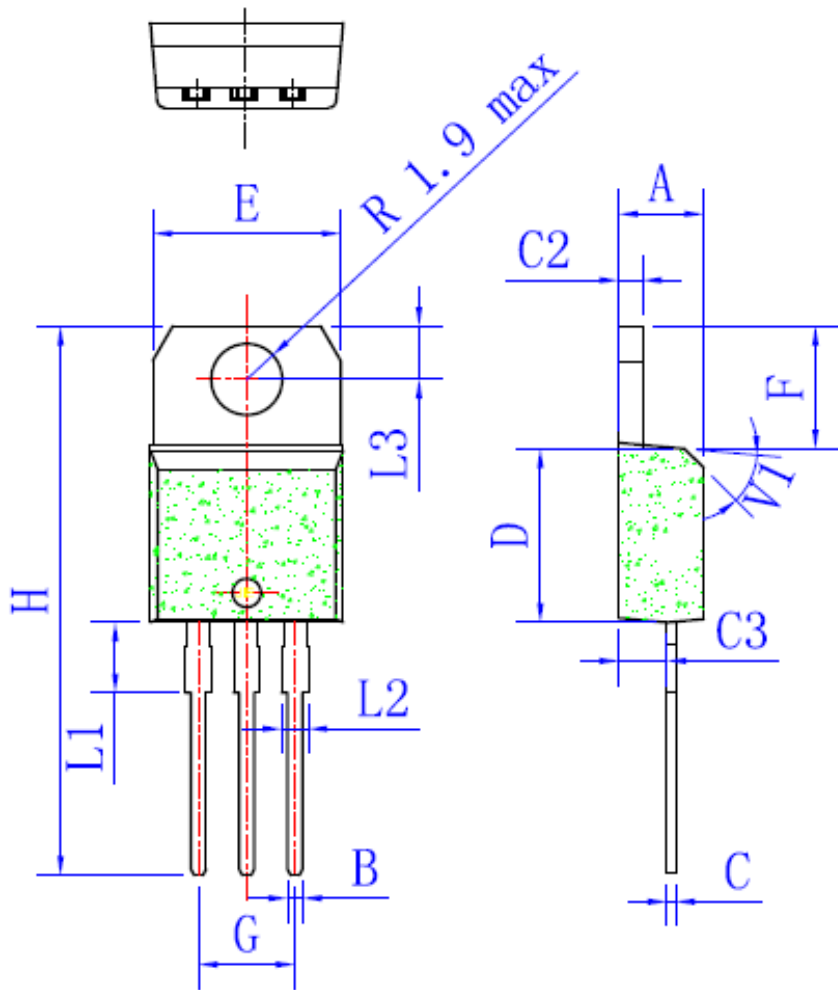
Symbol	Test Conditions		Value (MAX)	Unit
V _{TM}	I _{TM} = 50A, t _p = 380uS	T _j = 25 °C	1.6	V
I _{DRM} / I _{RRM}	V _D = V _{DRM}	T _j = 25 °C	10	uA
	V _R = V _{RRM}	T _j = 125 °C	4	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R _{th(j-c)}	Junction to case for DC	TO-220A	1.9	°C/W

PACKAGE MECHANICAL DATA

TO-220A



	Millimeters		
	Min	Typ	Max
A	4.4		4.6
B	0.61		0.88
C	0.46		0.70
C2	1.23		1.32
C3	2.4		2.72
D	8.6		9.7
E	9.8		10.4
F	6.2		6.6
G	4.8		5.4
H	28		29.8
L1		3.75	
L2	1.14		1.7
L3	2.65		2.95
V		40°	

FIG.1: Maximum average power dissipation versus average on-state current

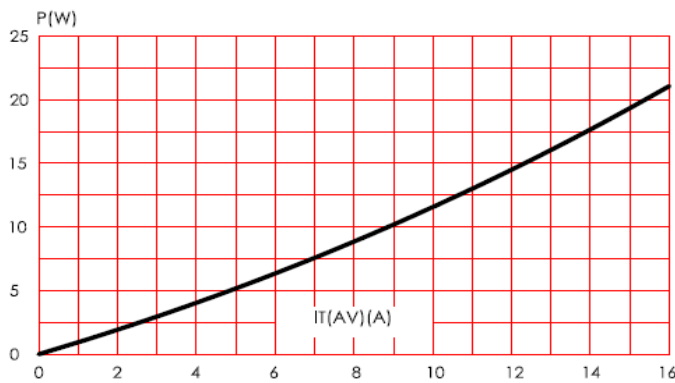


FIG.2: RMS on-state current versus case temperature.

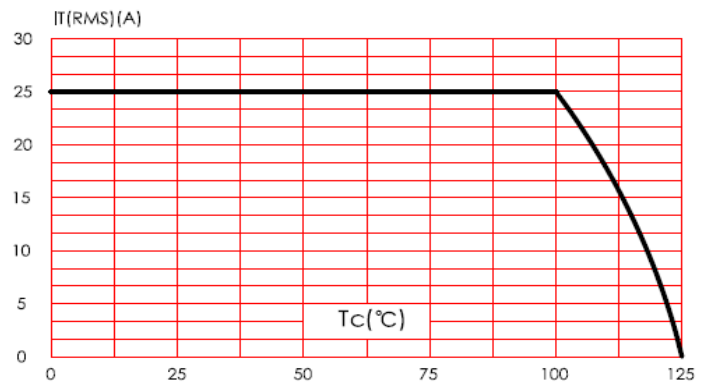


FIG.3: Relative variation of gate trigger current, holding current and latching current versus junction temperature.

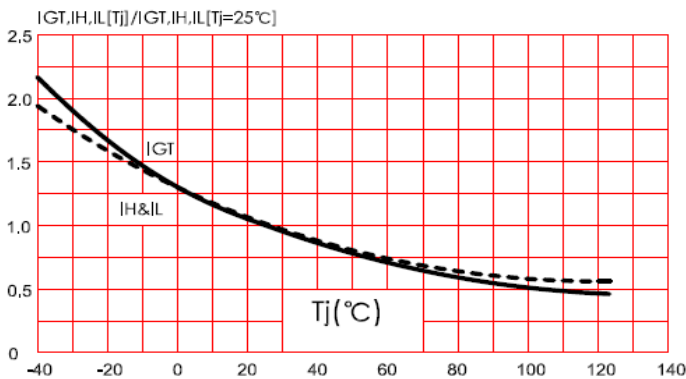


FIG.4: Surge peak on-state current versus number of cycles.

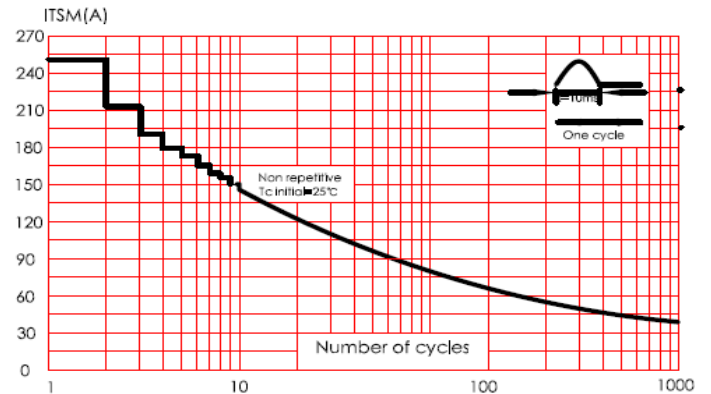


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10$ ms, and corresponding value of I^2t

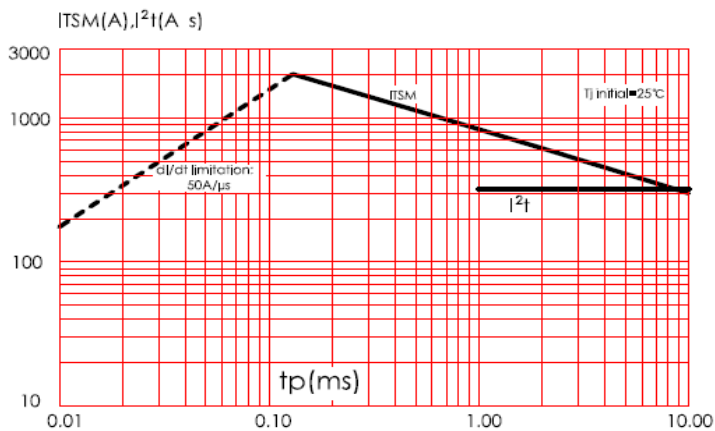


FIG.6: On-state characteristics (maximum values).

