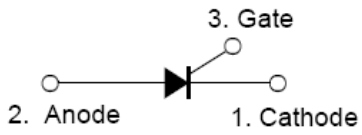
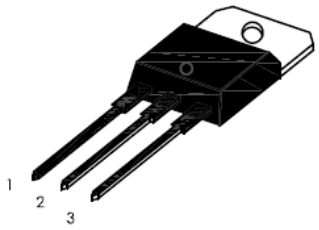
IPS620 series of silicon controlled rectifiers are specifically designed for medium power switching and phase control applications.
High current density due to double mesa technology SIPOS and Glass passivation technology used has reliable operation up to 125℃ junction temperature.
Low Igt parts available.
IPS620 series are suitable for general purpose applications, a high gate sensitivity is required.





TO-220B

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	20	A
$I_{T(AV)}$	12	A
V_{DRM} / V_{RRM}	600	V
V_{TM}	≤ 1.6	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
RMS on–state current (Tc = 100℃, 180° conduction half sine wave)	$I_{T(RMS)}$	20	A
Average on–state current (Tc = 100℃, 180° conduction half sine wave)	$I_{T(AV)}$	12	A
Storage Junction Temperature Range Operating Junction Temperature Range	Tstg Tj	-40 to +150 -40 to +125	℃
Repetitive Peak Off-state Voltage Tj = 25℃ Repetitive Peak Reverse Voltage Tj = 25℃	V_{DRM} V_{RRM}	600 600	V
Non Repetitive Peak Off-state Voltage Tj = 25℃ Non Repetitive Peak Reverse Voltage Tj = 25℃	V_{DSM} V_{RSM}	700 700	V
One cycle Non Repetitive surge current (Half Cycle, 50Hz)	I_{TSM}	200	A
I^2t Value for fusing (tp = 10ms, Half Cycle)	I^2t	200	A^2s
Critical rate of rise of turned – on current (I_G = 2 X I_{GT}, Tj = 125℃)	dI/dt	50	A/us
Peak gate current tp = 20us, Tj = 125℃	I_{GM}	5	A
Average gate power dissipation Tj = 125℃	$P_{G(AV)}$	1	W

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ELECTRICAL CHARACTERISTICS (Tj = 25 ℃ unless otherwise specified)

Symbol	Test Condition		IPS620-xxB	Unit
			30	
I_{GT}	Required DC gate current to trigger at 25℃ at - 40℃ at 125℃	MAX	30 55 15	mA
V_{GT}	Required DC voltage to trigger at 25℃ (anode supply = 6V, resistive load) at - 40℃ at 125℃	MAX	1.3 2.0 1.1	V
V_{GD}	DC gate voltage not to trigger (Tj = 125℃, V_{DRM} = rated value)	MAX	0.2	V
I_L	I_G = 1.2 I_{GT}	MAX	70	mA
I_H	Holding current	MAX	50	mA
dV/dt	V_D = 67% V_{DRM} gate open Tj = 125 ℃	MIN	300	V/us

STATIC CHARACTERISTICS

Symbol	Test Conditions		Value (MAX)	Unit
V_{TM}	I_{TM} = 30A, tp = 380uS	Tj = 25℃	1.6	V
I_{DRM} / I_{RRM}	V_D = V_{DRM}	Tj = 25℃	5	uA
	V_R = V_{RRM}	Tj = 125℃	2	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R_{th} (j – c)	Junction to case	TO-220B	1.0	℃/W

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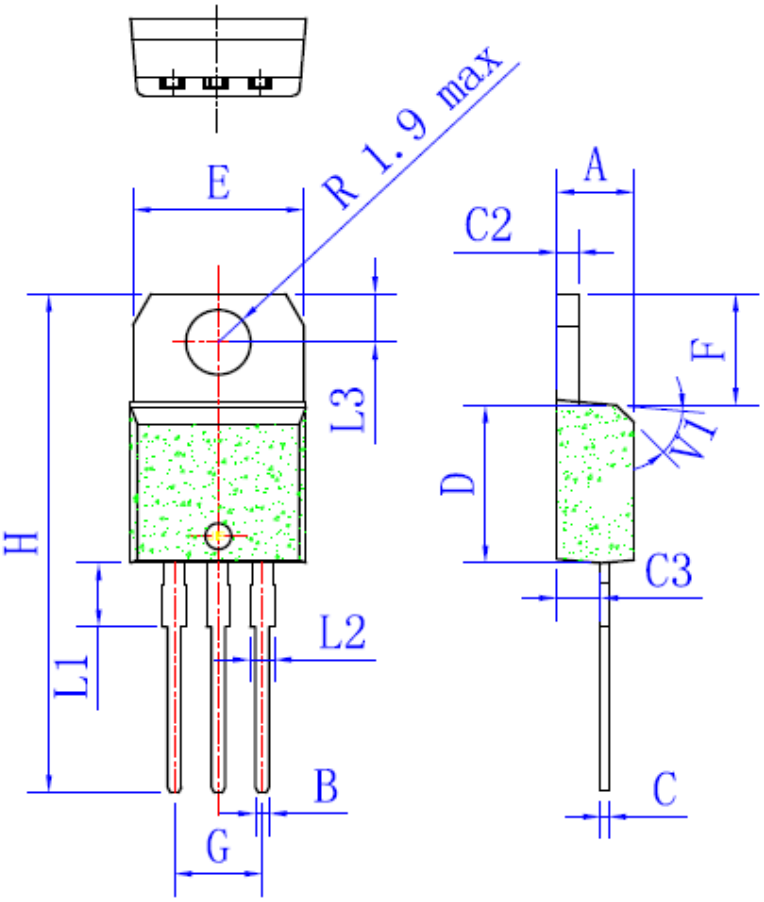
PACKAGE MECHANICAL DATA

TO-220B



	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 RMS on-state current

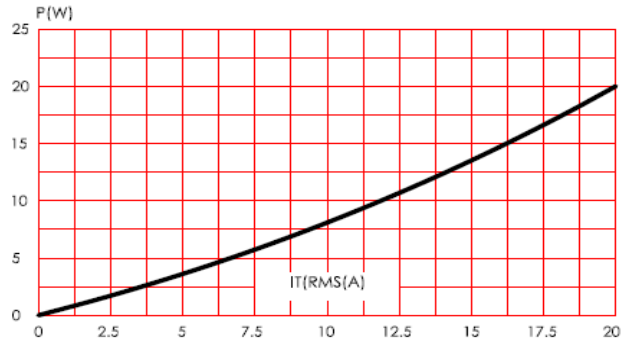


FIG.2: RMS on-state current versus case temperature.

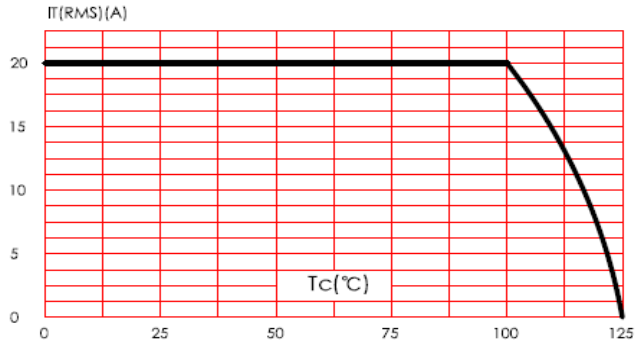


FIG.3: Relative variation of gate trigger current, holding current and latching current versus junction temperature.

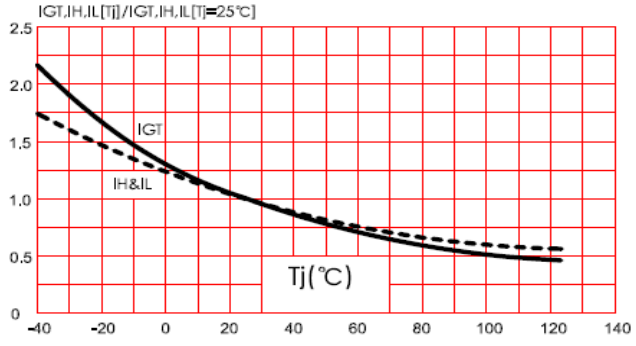


FIG.4: Surge peak on-state current versus number of cycles.

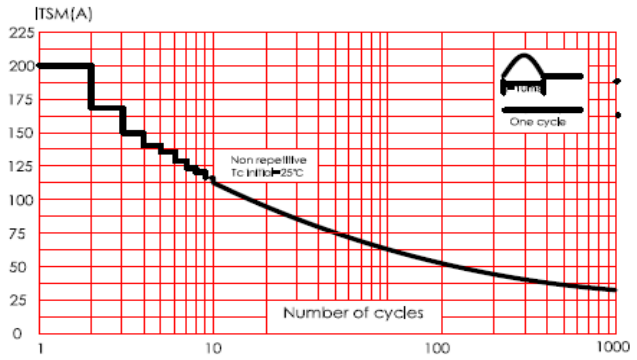


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10 ms, and corresponding value of I^2t

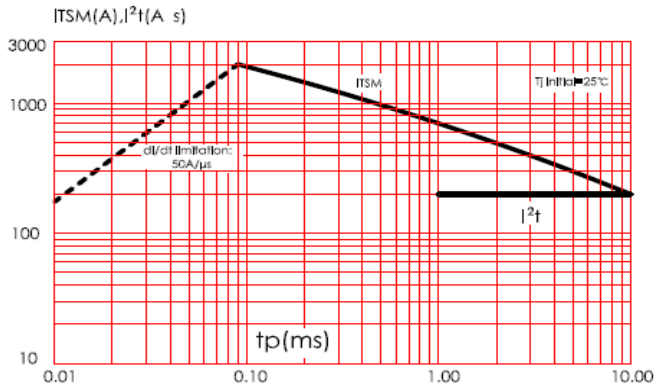
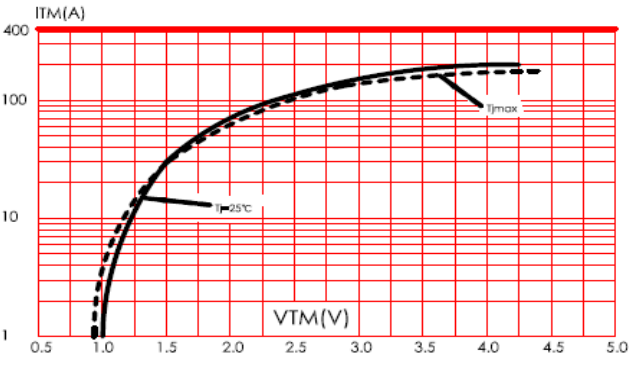


FIG.6: On-state characteristics (maximum values).



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