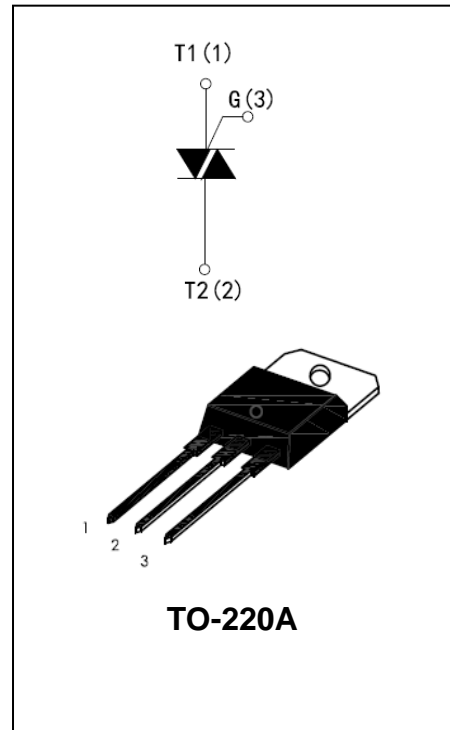




High current density due to double mesa technology; SIPOS and Glass Passivation. IPT20Q08-xx series are suitable for general purpose AC Switching.

They can be used as an ON/OFF function In application such as static relays, heating regulation, Induction motor starting circuits... or for phase Control operation light dimmers, motor speed Controllers.

The IPT20Q08-xxA(Insulated version) series are isolated internally, they provided a 2500V RMS isolation voltage from all three terminals to external heatsink.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	20	A
V_{DRM} / V_{RRM}	800	V
V_{TM}	≤ 1.65	V

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage Junction Temperature Range	T_{stg}	-40 to +150	$^{\circ}C$
Operating Junction Temperature Range	T_j	-40 to +125	$^{\circ}C$
Repetitive Peak Off-state Voltage Repetitive Peak Reverse Voltage	V_{DRM} V_{RRM}	800 800	V
Non Repetitive Peak Off-state Voltage Non Repetitive Peak Reverse Voltage	V_{DSM} V_{RSM}	900 900	V
RMS on-state current (360° conduction angle)	$I_{T(RMS)}$	20	A
Non repetitive surge peak on-state Current (full cycle, $T_j = 25^{\circ}C$)	I_{TSM}	210 200	A
I^2t Value for fusing $t_p = 10ms$	I^2t	200	A^2s
Critical Rate of rise of on-state current Gate supply : $I_G = 500mA$ $dI_G/dt = 1A/us$	di / dt	20 100	A/us
Peak gate current	I_{GM}	8	A
Average gate power dissipation	$P_{G(AV)}$	1	W

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

Symbol	Test Condition	Quadrant		IPT20Q08-xxA			Unit
				TE	SE	CE	
I _{GT}	V _D = 12V R _L = 30Ω	I – II – III IV	MAX		10	25 50	mA
V _{GT}		ALL	MAX	1.3			V
V _{GD}	V _D =V _D RM, R _L =3.3KΩ, T _j = 125 °C	ALL	MIN	0.2			V
I _L	I _G = 1.2 I _{GT}	I – III – IV	MAX		30	40	mA
		II			40	80	
I _H	I _T = 100mA		MAX		25	35	mA
dV/dt	V _D = 67% V _D RM gate open T _j = 125 °C		MIN		40	200	V/us
(dI/dt) _c	(dV/dt) c = 0.1V/us T _j = 125 °C		MIN		8.5		
	(dV/dt) c = 10V/us T _j = 125 °C				3.0		
	Without snubber T _j = 125 °C						

STATIC CHARACTERISTICS

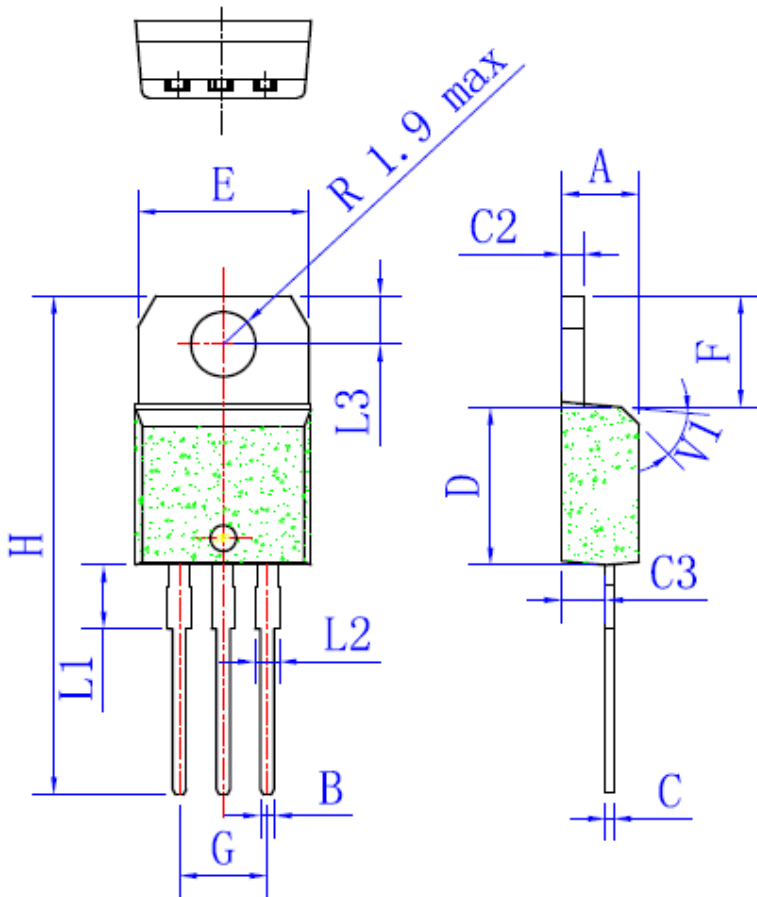
Symbol	Test Conditions		Value (MAX)	Unit
V _{TM}	I _{TM} = 28A, t _p = 380uS	T _j = 25 °C	1.65	V
I _{DRM}	V _D = V _D RM	T _j = 25 °C	20	uA
I _{RRM}	V _R = V _{RRM}	T _j = 125 °C	3	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th(j-c)}	Junction to case (AC)	2.1	°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 power dissipation versus RMS on-state current(full cycle)

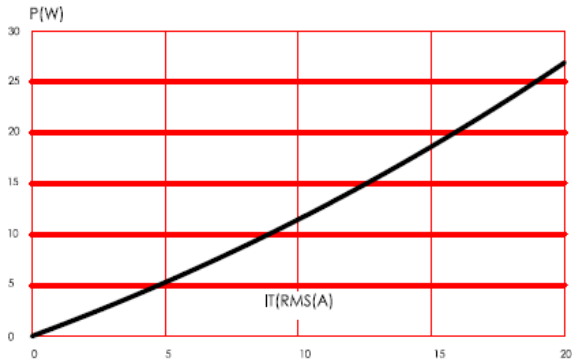


FIG.2: RMS on-state current versus case temperature(full cycle)

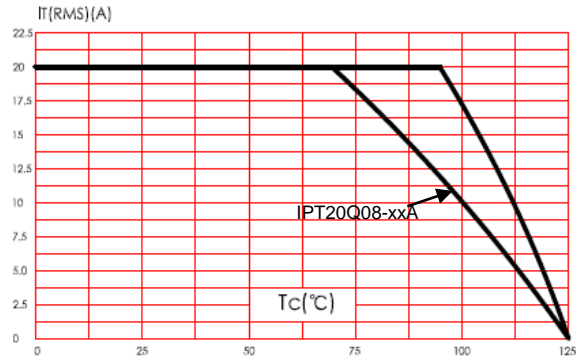


FIG.3: On-state characteristics (maximum values)

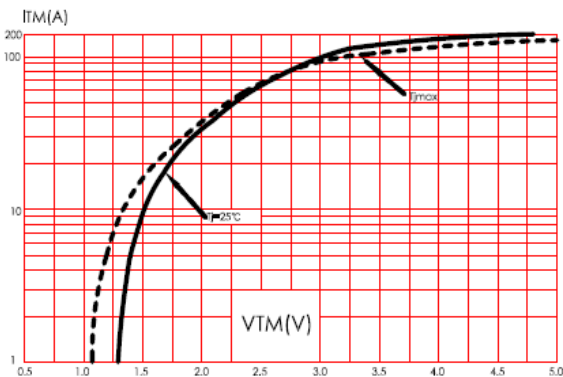


FIG.4: Surge peak on-state current versus number of cycles.

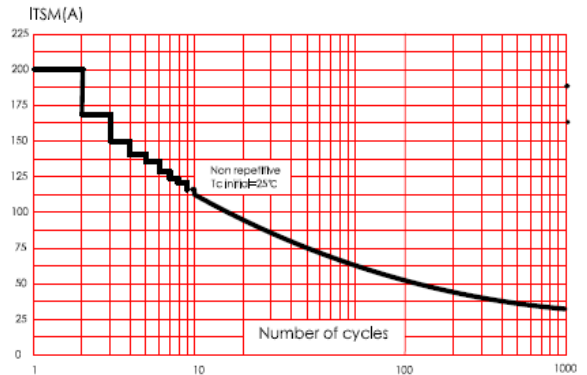


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t

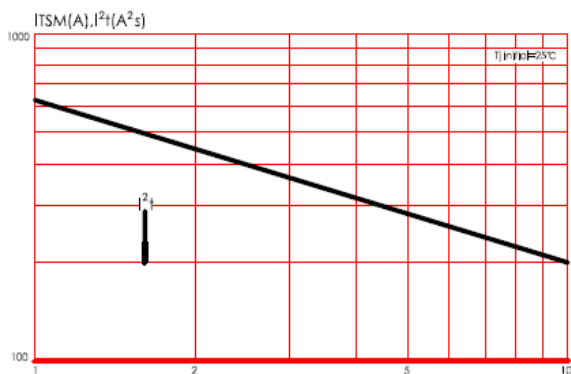


FIG.6: Relative variation of gate trigger current, holding current and latching current versus junction temperature(typical values).

