

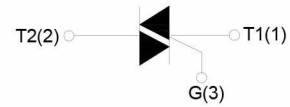
DESCRIPTION:

With high ability to withstand the shock loading of large current, **VSA08/VSB08** triacs provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, 3 quadrants products especially recommended for use on inductive load.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	600/800/1200	V



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40 - 150	°C
Operating junction temperature range		T_j	-40 - 125	°C
Repetitive peak off-state voltage ($T_j=25^{\circ}C$)		V_{DRM}	600/800/1200	V
Repetitive peak reverse voltage ($T_j=25^{\circ}C$)		V_{RRM}	600/800/1200	V
Non repetitive surge peak Off-state voltage		V_{DSM}	$V_{DRM} + 100$	V
Non repetitive peak reverse voltage		V_{RSM}	$V_{RRM} + 100$	V
RMS on-state current	TO-251/TO-220C TO-220B(Non-Ins) ($T_c=100^{\circ}C$)	$I_{T(RMS)}$	8	A
	TO-220A(Ins)/ TO-220F(Ins) ($T_c=95^{\circ}C$)			
	TO-262 ($T_c=90^{\circ}C$)			
Non repetitive surge peak on-state current (full cycle, F=50Hz)		I_{TSM}	80	A

I ² t value for fusing (tp=10ms)	I ² t	32	A ² s
Critical rate of rise of on-state current (I _G =2×I _{GT})	dI/dt	50	A/μs
Peak gate current	I _{GM}	4	A
Average gate power dissipation	P _{G(AV)}	1	W
Peak gate power	P _{GM}	5	W

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

3 Quadrants

Symbol	Test Condition	Quadrant		Value				Unit
				TW	SW	CW	BW	
I _{GT}	V _D =12V R _L =33Ω	I - II -III	MAX	5	10	35	50	mA
V _{GT}		I - II -III	MAX	1.5				V
V _{GD}	V _D =V _{DRM} T _j =125°C R _L =3.3KΩ	I - II -III	MIN	0.2				V
I _L	I _G =1.2I _{GT}	I -III	MAX	20	25	50	70	mA
		II		25	35	70	90	
I _H	I _{TM} =100mA		MAX	15	20	40	60	mA
dV/dt	V _D =2/3V _{DRM} Gate Open T _j =125°C		MIN	50	200	500	1000	V/μs

4 Quadrants

Symbol	Test Condition	Quadrant		Value		Unit
				C	B	
I _{GT}	V _D =12V R _L =33Ω	I - II -III	MAX	25	50	mA
		IV		50	70	
V _{GT}		ALL	MAX	1.5		V
V _{GD}	V _D =V _{DRM} T _j =125°C R _L =3.3KΩ	ALL	MIN	0.2		V
I _L	I _G =1.2I _{GT}	I -III-IV	MAX	50	70	mA
		II		70	90	
I _H	I _{TM} =200mA		MAX	40	60	mA
dV/dt	V _D =2/3V _{DRM} Gate Open T _j =125°C		MIN	200	500	V/μs

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM} = 11A$ $t_p = 380\mu s$	$T_j = 25^{\circ}C$	1.5	V
I_{DRM}	$V_D = V_{DRM}$ $V_R = V_{RRM}$	$T_j = 25^{\circ}C$	5	μA
I_{RRM}		$T_j = 125^{\circ}C$	1	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-251	2.1	$^{\circ}C/W$
		TO-220A(Ins)	2.7	
		TO-220C/ TO-220B(Non-Ins)	1.8	
		TO-220F(Ins)	2.9	
		TO-262	3.0	

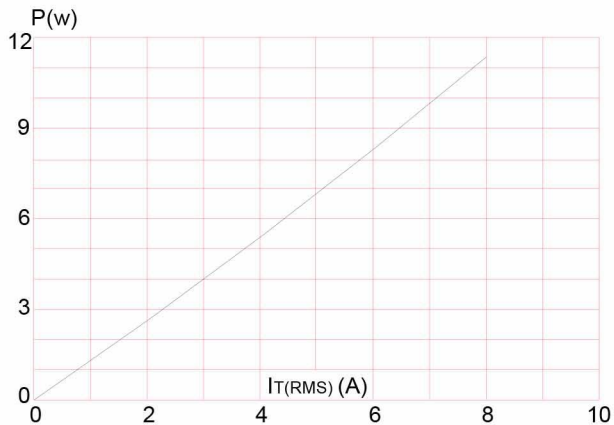


FIG.3: Surge peak on-state current versus number of cycles

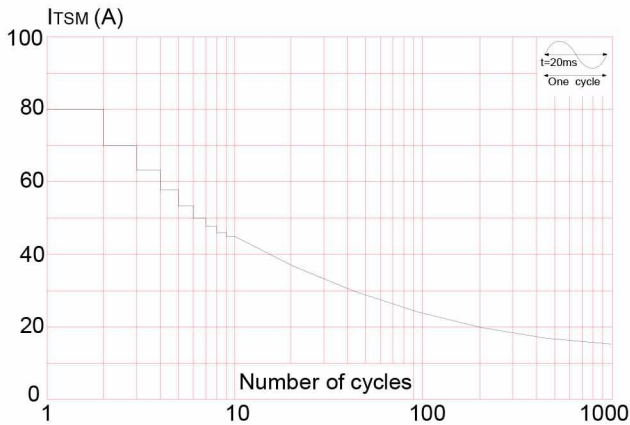


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($dl/dt < 50\text{A}/\mu\text{s}$)

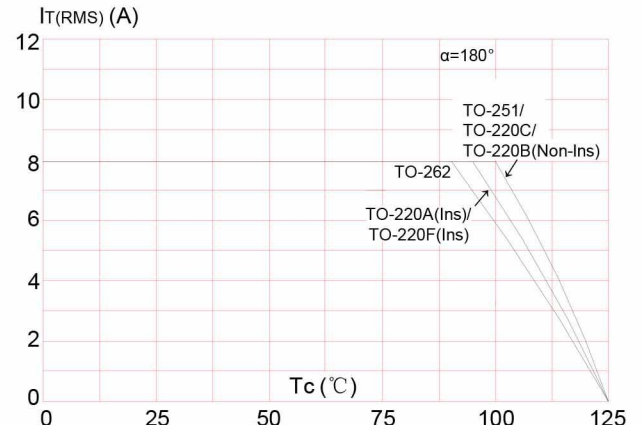
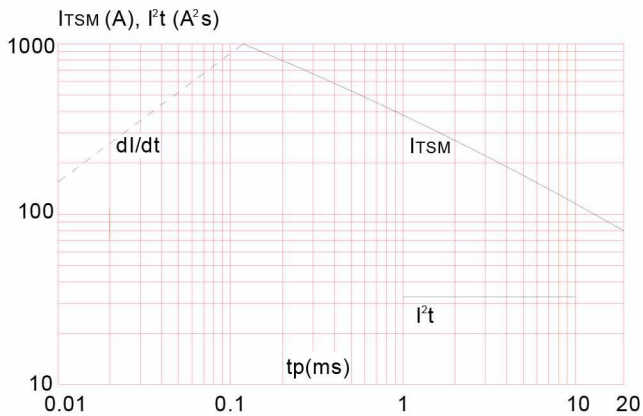


FIG.4: On-state characteristics (maximum values)

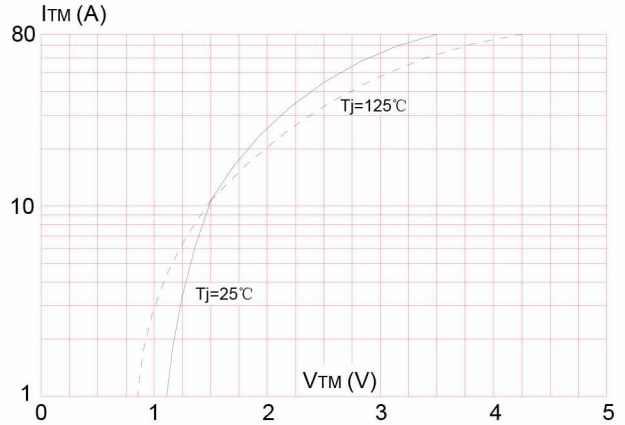


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

