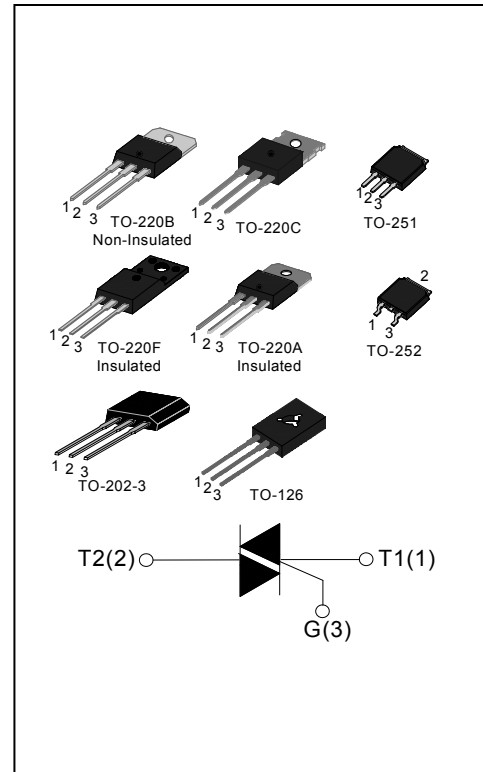


DESCRIPTION:

With low holding and latching current, YR136 series triacs are especially recommended for use on middle and small resistance type power load. From all three terminals to external heatsink, YR136A provides a rated insulation voltage of 2500 V_{RMS} , and YR136F provides a rated insulation voltage of 2000 V_{RMS} , complying with UL standards.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	600 and 800	V


ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40-150	$^{\circ}C$
Operating junction temperature range		T_j	-40-125	$^{\circ}C$
Repetitive peak off-state voltage($T_j=25^{\circ}C$)		V_{DRM}	600/800	V
Repetitive peak reverse voltage($T_j=25^{\circ}C$)		V_{RRM}	600/800	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-252 ($T_c=100^{\circ}C$)	$I_{T(RMS)}$	4	A
	TO-220A(Ins) ($T_c=87^{\circ}C$)			
	TO-220B(Non-Ins)/ TO-220C($T_c=107^{\circ}C$)			
	TO-220F(Ins) ($T_c=90^{\circ}C$)			
	TO-202-3($T_c=80^{\circ}C$)			
	TO-126($T_c=85^{\circ}C$)			

4A TRIACs

Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	35	A
I^2t value for fusing ($t_p=10ms$)	I^2t	6.1	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	I - II - III	50	$A/\mu s$
	IV	10	
Peak gate current	I_{GM}	2	A
Average gate power dissipation	$P_{G(AV)}$	0.5	W
Peak gate power	P_{GM}	5	W

ELECTRICAL CHARACTERISTICS ($T_j=25^\circ C$ unless otherwise specified)

Symbol	Test Condition	Quadrant		Value				Unit
				T	D	E	F	
I_{GT}	$V_D=12V$	I - II - III	MAX	5	5	10	25	mA
		IV		5	10	25	70	
V_{GT}		ALL	MAX	1.3				V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^\circ C$ $R_L=3.3K\Omega$	ALL	MIN	0.2				V
I_L	$I_G=1.2I_{GT}$	I - III	MAX	10	20	10	40	mA
		II - IV		15	35	20	60	
I_H	$I_T=100mA$		MAX	5	15	15	30	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ C$		MIN	10	20	50	50	$V/\mu s$
(dV/dt) _c	(dI/dt) _c =1.7A/ms $T_j=125^\circ C$		MIN	0.1	0.1	0.5	5	$V/\mu s$

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=5.5A$ $t_p=380\mu s$	$T_j=25^\circ C$	1.6	V
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ C$	5	μA
I_{RRM}		$T_j=125^\circ C$	0.5	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-251 TO-252	2.8	°C/W
		TO-220A(Ins)	3.5	
		TO-220B(Non-Ins)/ TO-220C	2.5	
		TO-220F(Ins)	3.3	
		TO-126	3.7	
		TO-202-3	3.9	

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

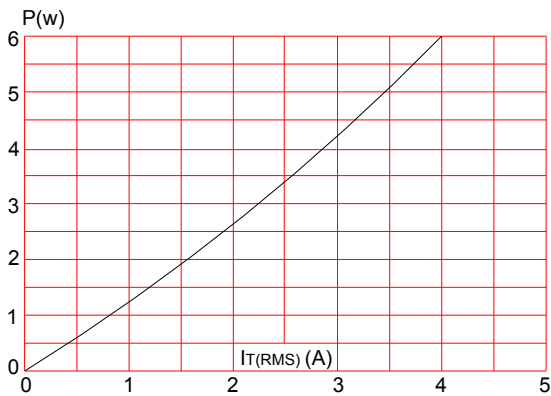


FIG.3: Surge peak on-state current versus number of cycles

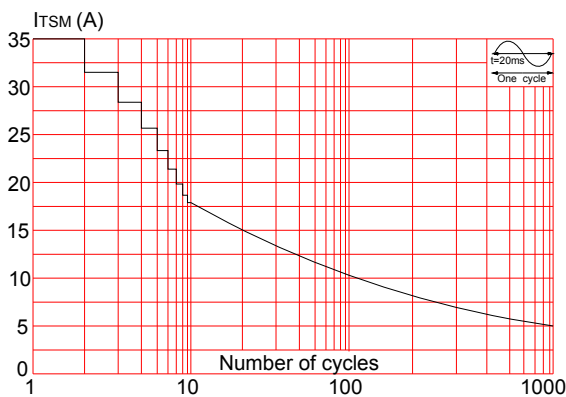


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I^2t (I - II - III: $dI/dt < 50\text{A}/\mu\text{s}$; IV: $dI/dt < 10\text{A}/\mu\text{s}$)

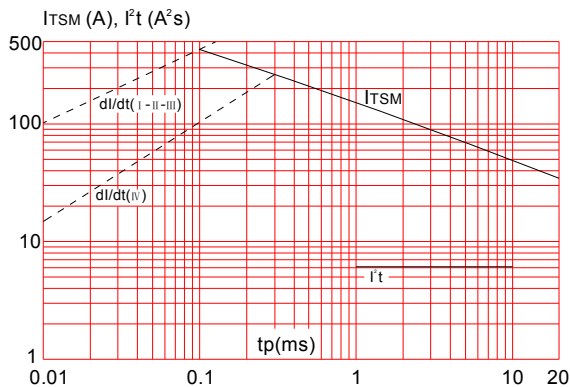


FIG.7: Relative variations of holding current versus junction temperature

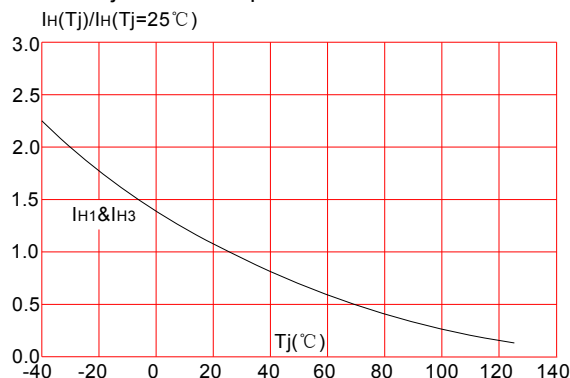


FIG.2: RMS on-state current versus case temperature

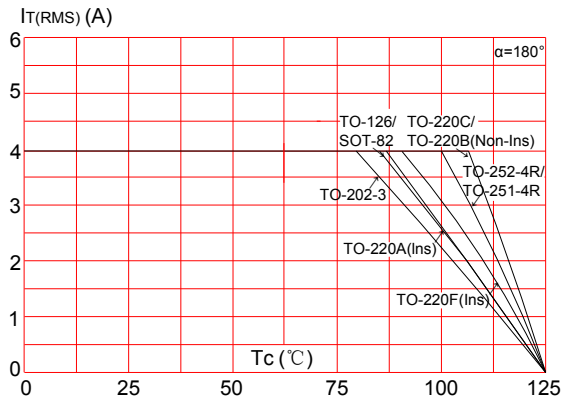


FIG.4: On-state characteristics (maximum values)

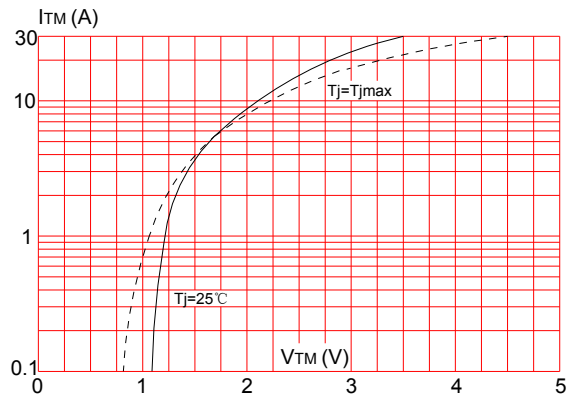


FIG.6: Relative variations of gate trigger current versus junction temperature

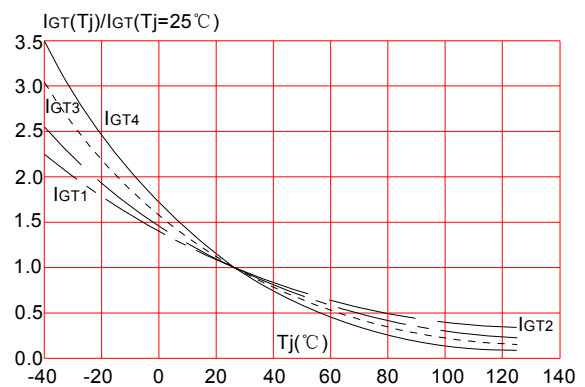


FIG.8: Relative variations of latching current versus junction temperature

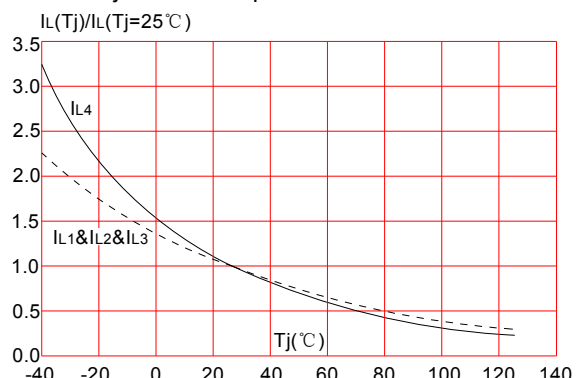


FIG.7: Relative variations of holding current versus junction temperature

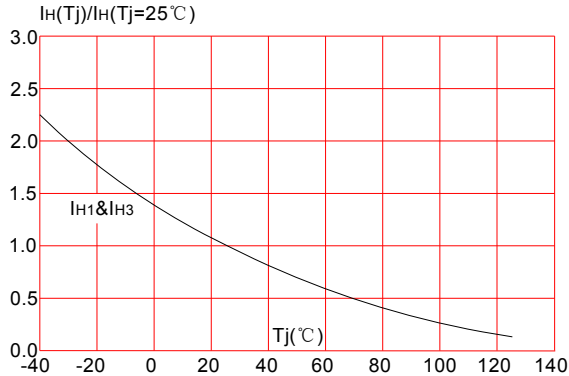


FIG.8: Relative variations of latching current versus junction temperature

