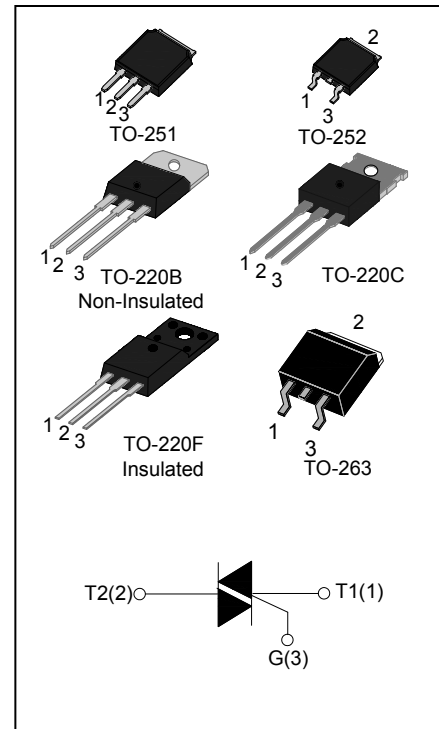


DESCRIPTION:

YR137 series triacs with low holding and latching current are especially recommended for use on middle and small resistance type power load. From all three terminals to external heatsink, YR 137F provides a rated insulation voltage of 2000 V_{RMS}, complying with UL standards .

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	600 and 800	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($T_j=25^\circ\text{C}$)		V_{DRM}	600/800	V
Repetitive peak reverse voltage($T_j=25^\circ\text{C}$)		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 TO-220B(Non-Ins)/ TO-220C($T_C=103^\circ\text{C}$)	$I_{T(RMS)}$	8	A
	TO-220F(Ins) ($T_C=95^\circ\text{C}$)			
	TO-263 ($T_C=85^\circ\text{C}$)			
Non repetitive surge peak on-state current (full cycle, F=50Hz)		I_{TSM}	65	A
I^2t value for fusing ($t_p=10\text{ms}$)		I^2t	21	A ² s

8A TRIACs

Peak gate current		I_{GM}	2	A
Critical rate of rise of on-state current($I_G=2 \times I_{GT}$)	I - II -III	dI/dt	50	A/ μ s
	IV		10	
Average gate power dissipation		$P_{G(AV)}$	0.5	W
Peak gate power		P_{GM}	5	W

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

Symbol	Test Condition	Quadrant	Value				Unit	
			D	E	F	G		
I_{GT}	$V_D=12\text{V } R_L=30\Omega$	I - II -III	MAX	5	10	25	50	mA
		IV		10	25	70	100	
V_{GT}		ALL	MAX	1.3				V
V_{GD}	$V_D=V_{DRM} T_j=125^\circ\text{C}$ $R_L=3.3\text{K}\Omega$	ALL	MIN	0.2				V
I_L	$I_G=1.2I_{GT}$	I -III	MAX	10	20	50	70	mA
		II -IV		20	30	70	100	
I_H	$I_T=100\text{mA}$		MAX	10	15	40	60	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$		MIN	20	50	50	200	V/ μ s

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=10\text{A } t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.6	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	μA
I_{RRM}		$T_j=125^\circ\text{C}$	1	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-251	2.1	$^\circ\text{C/W}$
		TO-252		
		TO-220B(Non-Ins)/ TO-220C	1.8	
		TO-220F(Ins)	2.9	
		TO-263	2.1	

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

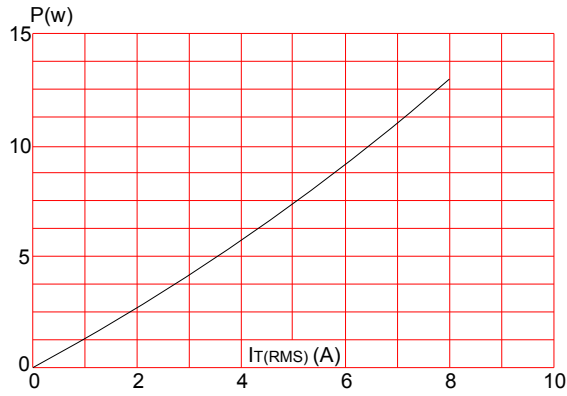


FIG.3: Surge peak on-state current versus number of cycles

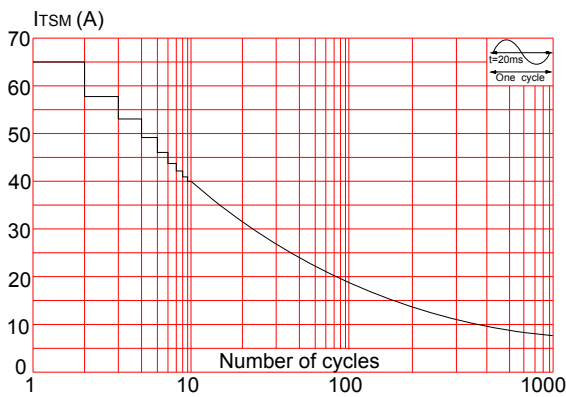


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t

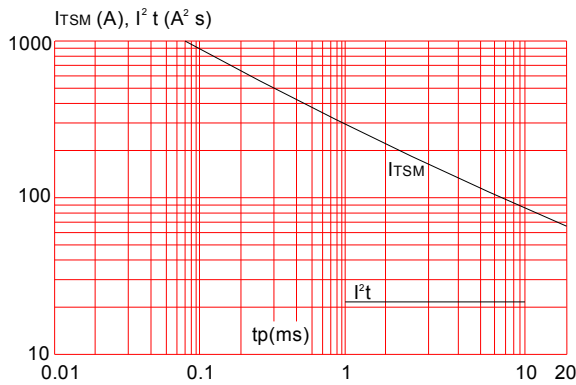


FIG.7: Relative variations of holding current versus junction temperature

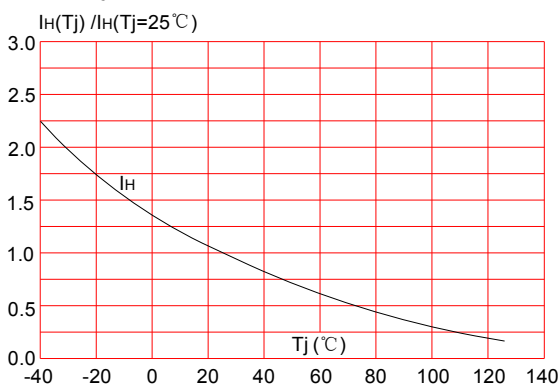


FIG.2: RMS on-state current versus case temperature

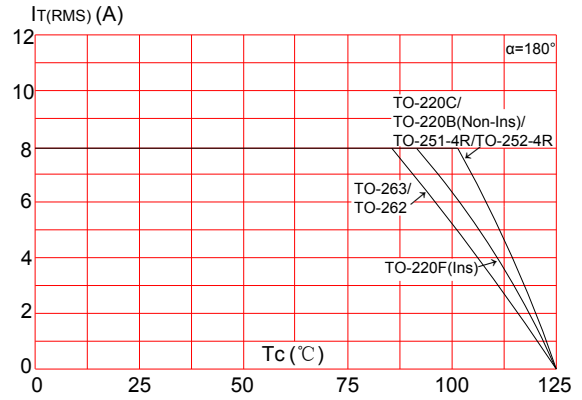


FIG.4: On-state characteristics (maximum values)

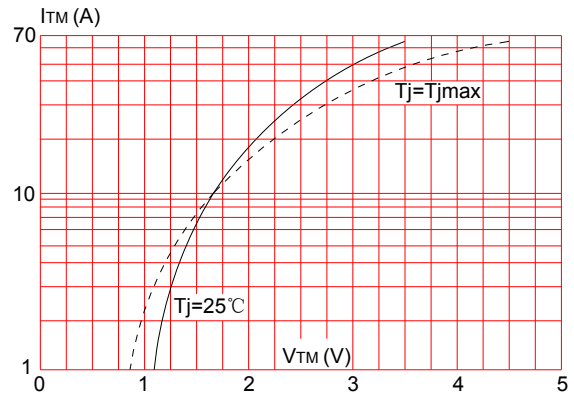


FIG.6: Relative variations of gate trigger current versus junction temperature

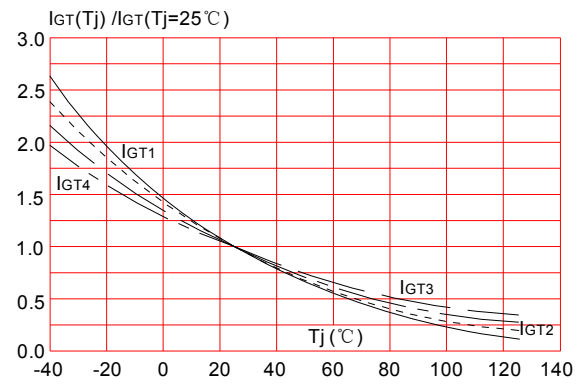


FIG.8: Relative variations of latching current versus junction temperature

