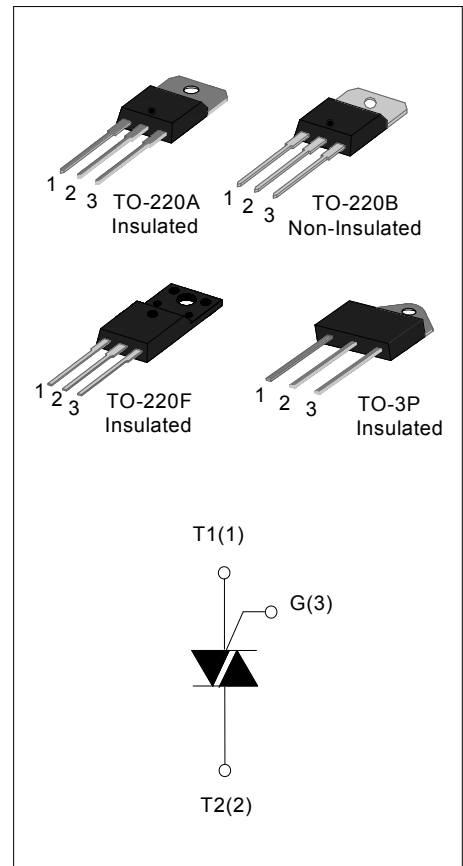


DESCRIPTION:

With high ability to withstand the shock loading of large current, YR BTA/BTB24 series 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.

From all three terminals to external heatsink, YR BTA/BTB24 provides a rated insulation voltage of 2500 Vrms, complying with UL standards .



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	25	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 ($T_j=25^\circ\text{C}$)		V_{DRM}	600/800/1200	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)		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-220A(Ins)/ TO-220F(Ins) ($T_C=75^\circ\text{C}$)	$I_{T(RMS)}$	25	A
	TO-220B(Non-Ins) ($T_C=90^\circ\text{C}$)			
	TO-263 ($T_C=70^\circ\text{C}$)			
	TO-3P(Ins) ($T_C=105^\circ\text{C}$)			
Non repetitive surge peak on-state current (full cycle, F=50Hz)		I_{TSM}	250	A

BTA/BTB24 TRIACs

I ² t value for fusing (tp=10ms)	I ² t	340	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}	10	W

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

V_{DRM}/V_{RPM}: 600/800V

Symbol	Test Condition	Quadrant		BTA/BTB-600/800V		Unit
				BW	CW	
I _{GT}	V _D = 12V R _L = 33Ω	I - II - III	MAX	50	35	mA
V _{GT}		I - II - III	MAX	1.3		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	80	70	mA
		II		100	80	
I _H	I _T = 100mA		MAX	75	50	mA
dV/dt	V _D = 2/3V _{DRM} Gate Open T _j = 125°C		MIN	1000	500	V/μs

V_{DRM}/V_{RPM}: 1200/1600V

Symbol	Test Condition	Quadrant		BTA/BTB-1200V		Unit
				BW	CW	
I _{GT}	V _D = 12V R _L = 33Ω	I - II - III	MAX	50	35	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	90	70	mA
		II		100	80	
I _H	I _T = 100mA		MAX	80	60	mA
dV/dt	V _D = 2/3V _{DRM} Gate Open T _j = 125°C		MIN	1500	1000	V/μs

BTA/BTB24 TRIACs

V_{DRM}/V_{RRM} : 600/800V

Symbol	Test Condition	Quadrant		BTA/BTB24-600/800V		Unit
				B	C	
I_{GT}	$V_D=12V R_L=33\Omega$	I - II - III	MAX	50	25	mA
		IV		70	50	
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 - IV	MAX	80	70	mA
		II		100	100	
I_H	$I_T=100mA$		MAX	75	60	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ C$		MIN	500	200	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=35A t_p=380\mu s$	$T_j=25^\circ C$	1.5	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ C$	5	μA
I_{RRM}		$T_j=125^\circ C$	3	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220A(Ins)	2.9	$^\circ C/W$
		TO-220B(Non-Ins)	1.9	
		TO-220F(Ins)	2.9	
		TO-263	2.1	
		TO-3P(Ins)	0.67	

BTA/BTB24 TRIACs

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

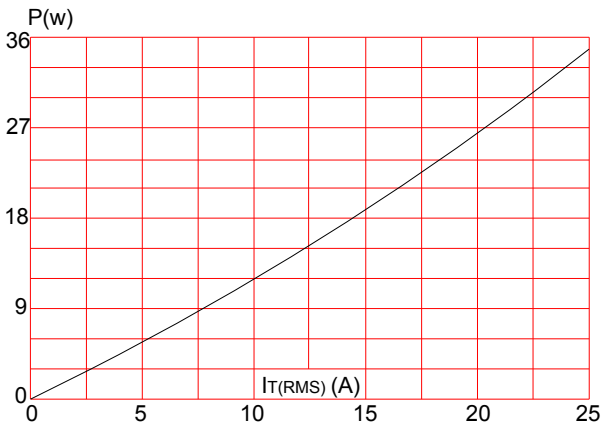


FIG.2: RMS on-state current versus case temperature

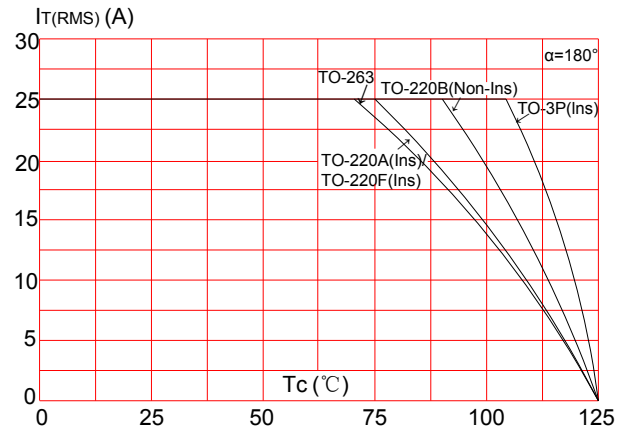


FIG.3: Surge peak on-state current versus number of cycles

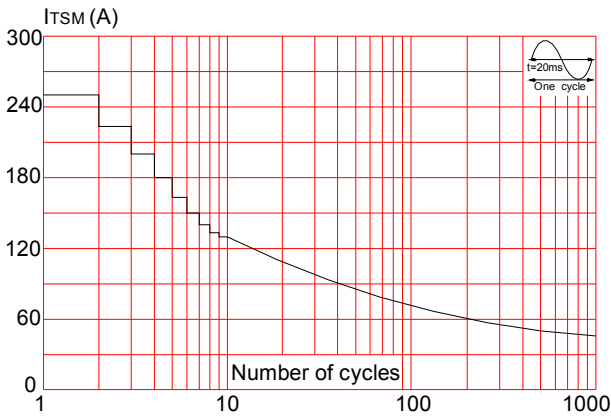


FIG.4: On-state characteristics (maximum values)

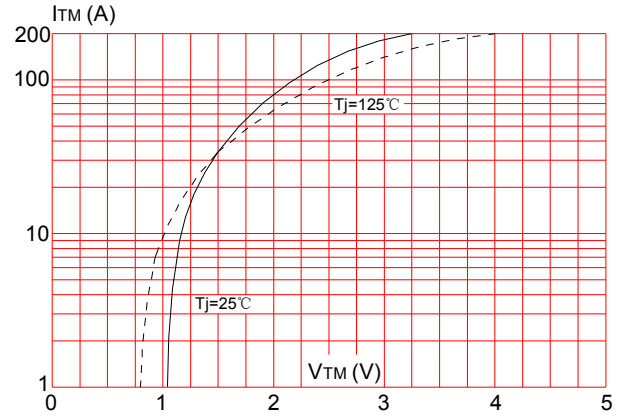


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

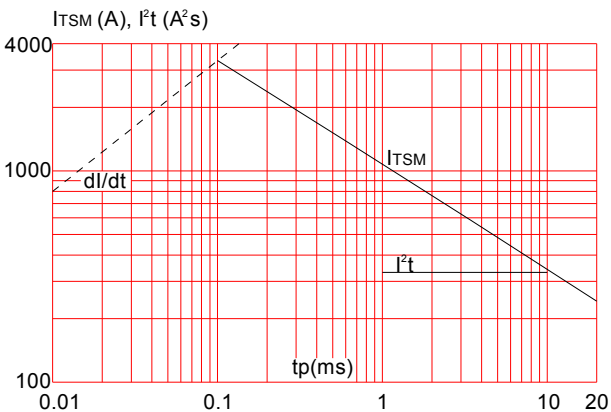


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

