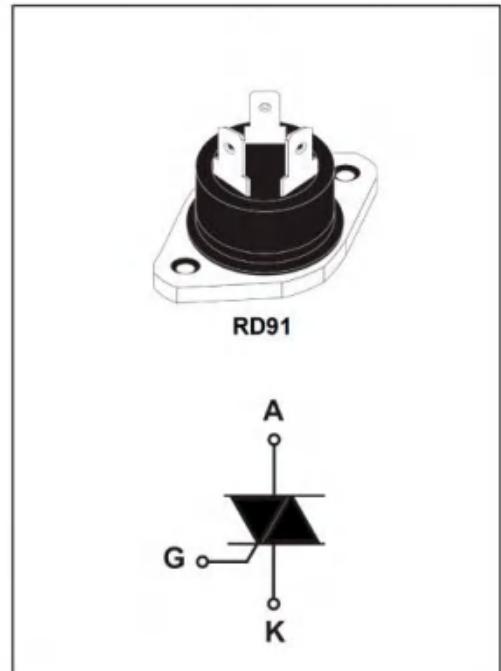


**BTA40 Series      40A TRIAC**
**DESCRIPTION:**

- ◇ High current TRIAC
- ◇ High commutation capability
- ◇ Low thermal resistance with clip bonding
- ◇ Insulated package RD91 high power:
  - Low thermal resistance with clip bonding
  - Insulated voltage: 2500 VRMS

**MAIN FEATURES**

Symbol	Value	Unit
$I_{T(RMS)}$	40	A
$V_{DRM} / V_{RRM}$	1000	V
$V_{TM}$	1.55	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 ( $T_j=25^\circ\text{C}$ )		$V_{DRM}$	1000	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )		$V_{RRM}$	1000	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	RD91 ( $T = 80^\circ\text{C}$ )	$I_{T(RMS)}$	40	A
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$ )		$I_{TSM}$	400	A
$I^2t$ value for fusing ( $t_p=10\text{ms}$ )		$I^2t$	880	$\text{A}^2\text{s}$
Critical rate of rise of on-state current ( $I_G = 2 \times I_{GT}$ )		$di/dt$	50	$\text{A}/\mu\text{s}$
Peak gate current		$I_{GM}$	4	A
Average gate power dissipation		$P_{G(AV)}$	1	W

**BTA40 Series**

Peak gate power	$P_{GM}$	10	W
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**ELECTRICAL CHARACTERISTICS ( $T_j=25^{\circ}C$  unless otherwise specified)**
**3 Quadrants**

Symbol	Test Condition	Quadrant		Value	Unit
$I_{GT}$	$V_D=12V R_L=33\Omega$	I - II -III	MAX	50	mA
$V_{GT}$		I - II -III	MAX	1.3	V
$V_{GD}$	$V_D=V_{DRM} T_j=125^{\circ}C$ $R_L=3.3K\Omega$	I - II -III	MIN	0.2	V
$I_L$	$I_G=1.2I_{GT}$	I -III	MAX	80	mA
		II		100	
$I_H$	$I_T=100mA$		MAX	60	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}C$		MIN	1000	V/ $\mu s$
(dV/dt)c	Without snubber $T_j=125^{\circ}C$		MIN	20	V/ $\mu s$

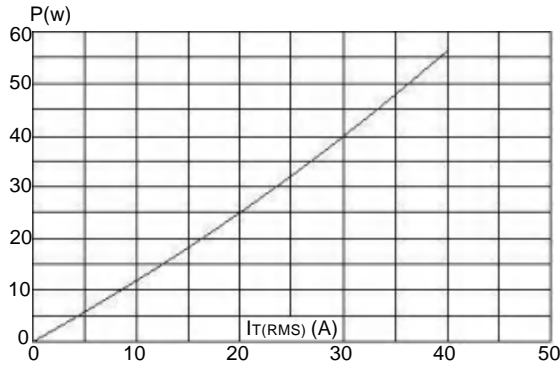
**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX)	Unit
$V_{TM}$	$I_{TM}=60A t_p=380\mu s$	$T_j=25^{\circ}C$	1.55	V
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}C$	10	$\mu A$
$I_{RRM}$		$T_j=125^{\circ}C$	5	mA

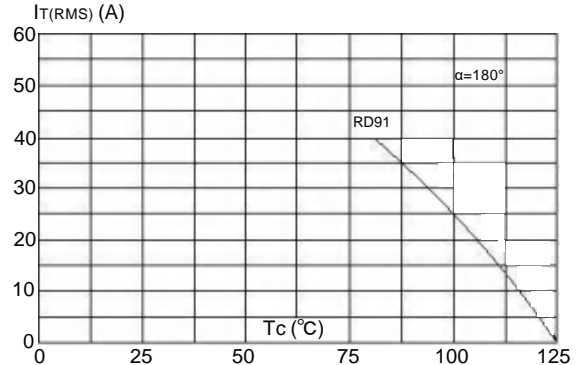
**THERMAL RESISTANCES**

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	RD91	0.9	$^{\circ}C/W$

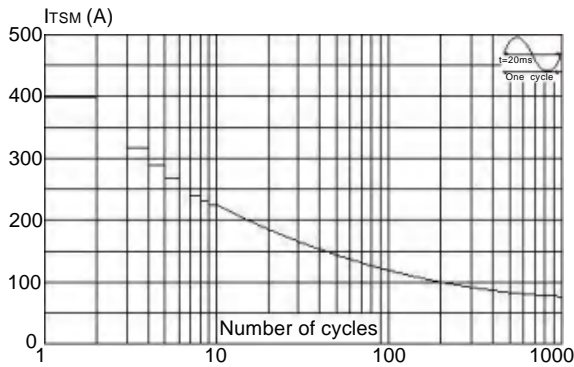
**FIG.1** Maximum power dissipation versus RMS on-state current



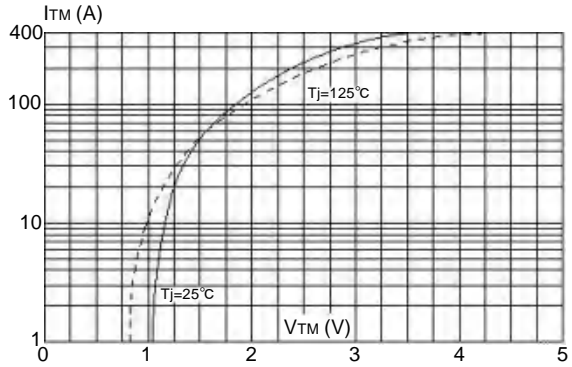
**FIG.2:** RMS on-state current versus case temperature



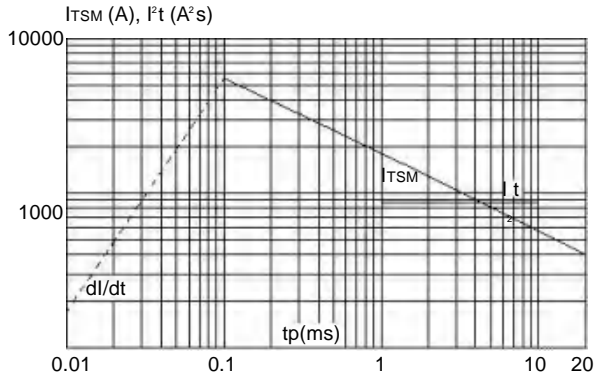
**FIG.3:** Surge peak on-state current versus number of cycles



**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  $I^2 t$  ( $di/dt < 50\text{A}/\mu\text{s}$ )



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

