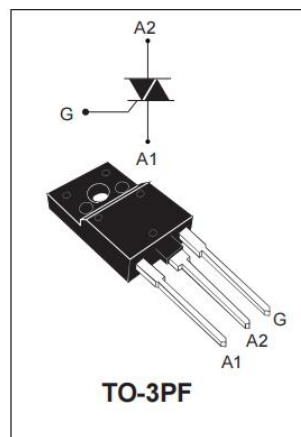


BTA41 Series 40A TRIACs

Rev: 1.0

DESCRIPTION:

The BTA41 triac series is suitable to fit all models of control Found in applications such as motor control ,industrial and domestic lighting ,heating and static switching , motor speed controllers,...Thanks to their clip assembly technique, they provide a superior performance in surge current handling capabilities By using an internal ceramic pad, the BTA series provides voltage insulated tab (rated at 2500VRMS) complying with UL standards



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	40	A
$V_{DRM} V_{RRM}$	800/1600	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 =25°C)	V_{DRM}	800/1600	V
Repetitive peak reverse voltage (T =25°C)	V_{RRM}	800/1600	V
RMS on-state current	$I_{T(RMS)}$	40	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	400	A
I^2t value for fusing (tp=10ms)	I^2t	880	A ² S
Critical rate of rise of on-state current ($I = 2 \times I_{GT}$)	dI/dt	50	A/μS
Peak gate current	I_{GM}	8	A
Average gate power dissipation	$P_{G(AV)}$	1	W

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

3 Quadrants

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	$V = 12V$ $R = 33\Omega$	I II III	MAX.	50	mA
V_{GT}		I II III	MAX.	1.3	V
V_{GD}	$V_D = V_{DRM}$ $T_j = 125^\circ C$ $R = 3.3K\Omega$	I II III	MIN.	0.2	V
I_L	$I_G = 1.2I_{GT}$	III III	MAX.	160	mA
I_H	$I_T = 100mA$		MAX.	80	mA
dV/dt	$V_D = 2/3V_{DRM}$ Gate Open $T_j = 125^\circ C$		MIN.	1000	V/ μs

STATIC CHARACTERISTICS

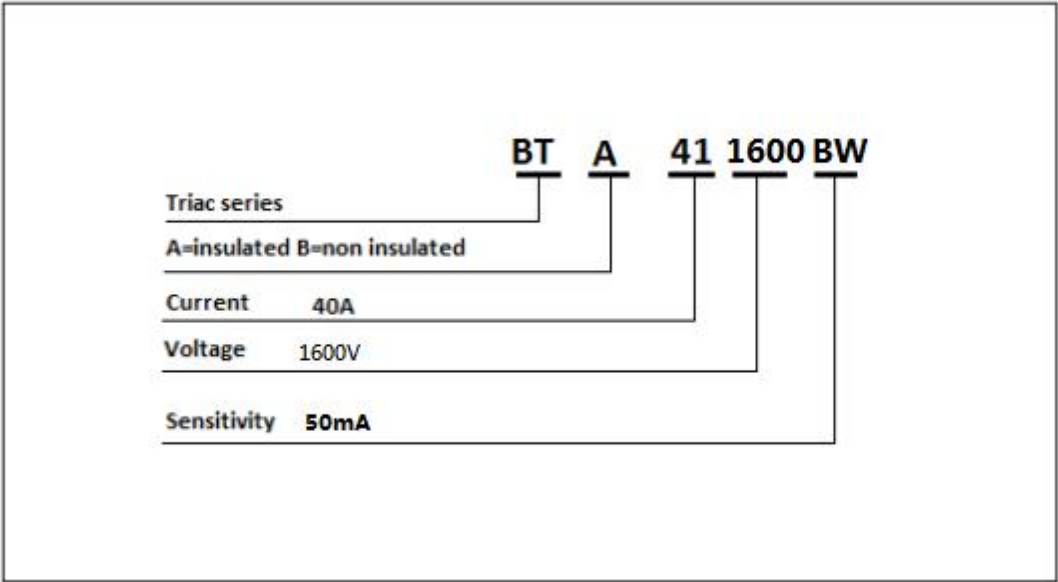
Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM} = 60A$ $t_p = 380\mu s$	$T_j = 25^\circ C$	1.55	V
I_{DRM}	$V_D = V_{DRM}$ $V_R = V_{RRM}$	$T_j = 25^\circ C$	10	μA
I_{RRM}		$T_j = 125^\circ C$	5	mA

Thermal Resistances

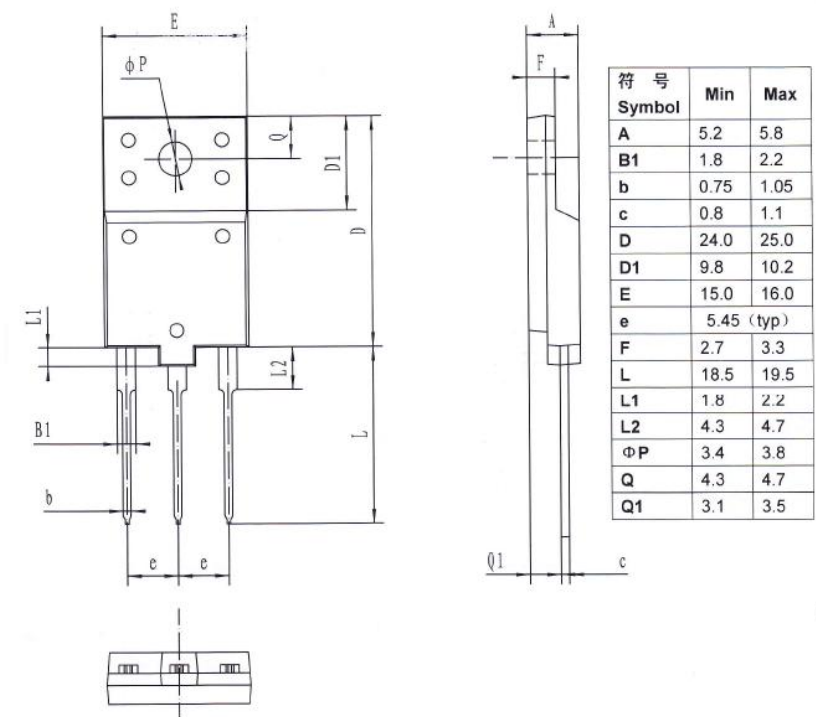
Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	junction to ambient	50	$^\circ C/W$
$R_{th(j-c)}$	Junction to case	1.2	

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Ordering Information Scheme



TO-3PF Package Mechanical Data



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

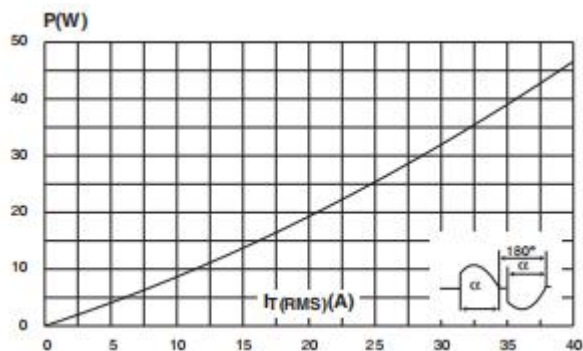


FIG.2: RMS on-state current versus case temperature

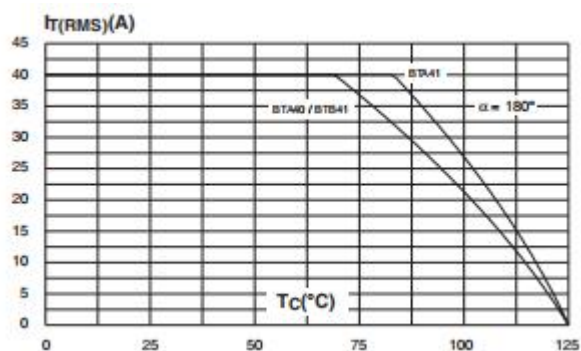


FIG.3: Surge peak on-state current versus number of cycles

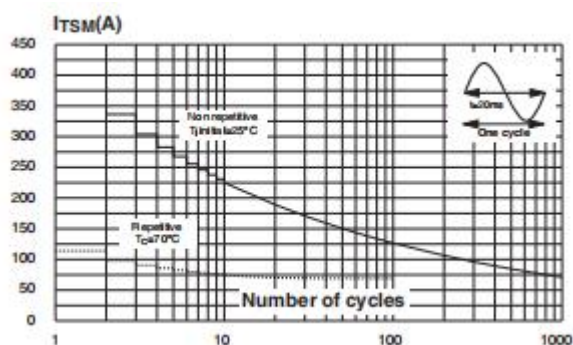


FIG.4: On-state characteristics (maximum values)

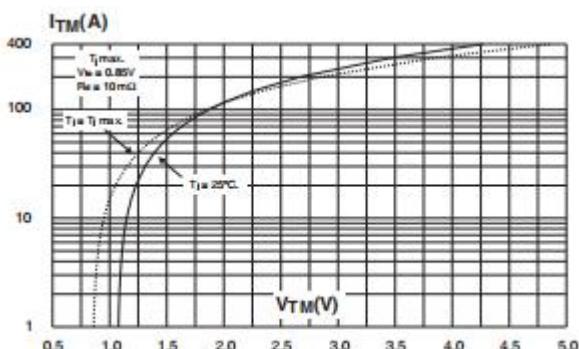


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of $I^2 t$ ($dI/dt < 50A/\mu s$)

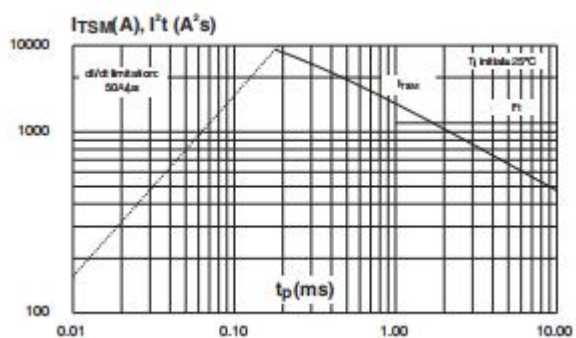


FIG.6: Relative variations of gate trigger current holding current and latching current versus junction temperature

