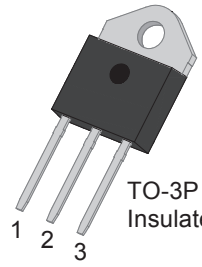
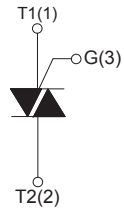
40A TRIACs

Features

- Glass passivated chip junction
- High voltage and surge capability
- Low thermal resistance and durability
- Triggering in four quadrants
- Pb-free
- RoHS compliant





Applications

- Static relays
- Heating regulation
- Induction motor starting circuits
- Phase control operation in light dimmers
- Motor speed controllers

Main Features

Symbol	Value	Unit
$I_{T(RMS)}$	40	A
V_{DRM} /V_{RRM}	800 / 1200 / 1600	V

Absolute Maximum Ratings

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{STG}	-40 to 150	°C
Operating junction temperature range		T_J	-40 to 125	°C
Repetitive peak off-state voltage (T_J = 25°C)		V_{DRM}	800 / 1200 / 1600	V
Repetitive peak reverse voltage (T_J = 25°C)		V_{RRM}	800 / 1200 / 1600	V
RMS on-state current	TO-3P(Ins) (T_C=90°C)	$I_{T(RMS)}$	40	A
Non repetitive surge peak on-state current (180° conduction angle, F = 50Hz, t_P = 20ms, full cycle)		I_{TSM}	400	A
I^2t value for fusing (t_P = 10ms)		I^2t	880	A^2s
Critical rate of rise of on-state current (I_G = 2×I_{GT}, t_r ≤ 100ns)		dI/dt	50	A/µs
Peak gate current		I_{GM}	4	A
Average gate power dissipation		$P_{G(AV)}$	1	W

Electrical Characteristics (T_J = 25°C unless otherwise specified)

Standard (4 Quadrants)

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	V_D = 12V, R_L = 100Ω	I - II - III	MAX	50	mA
		IV		100	
V_{GT}	V_D = 12V, R_L = 100Ω	ALL	MAX	1.5	V
V_{GD}	V_D = V_{DRM}, T_J = 125°C	ALL	MIN	0.2	V
I_L	I_G = 1.2×I_{GT}	I - III - IV	MAX	90	mA
		II		100	
I_H	V_{AK} = 12V, I_{GK} = 100mA		MAX	80	mA
dV/dt	V_D = 67% V_{DRM}, Gate open, T_J = 125°C		MIN	500	V/μs

Static Characteristics

Symbol	Test Condition			Value	Unit
V_{TM}	I_{TM} = 60A, t_P = 380μs	T_J = 25°C	MAX	1.55	V
I_{DRM} I_{RRM}	V_D = V_{DRM}, V_R = V_{RRM}	T_J = 25°C	MAX	10	μA
		T_J = 125°C		5	mA

Thermal Resistances

Symbol	Parameter		Value	Unit
$R_{\theta JC}$	Junction to case(AC)	TO-3P(Ins)	0.9	°C/W

Ordering Information

Ordering Type	Marking	Package	Quantity	Delivery Mode
BT40xx-yyZI	BT40xx-yyZI	TO-3P(Ins)	30	Tube

Note : xx = sensitivity, yy = voltage

Ordering Information Scheme

BT 40 A0 - 800 ZI

Triac series
BT = 4 Quadrants

$I_{T(RMS)}$
40 = 40A

I_{GT} Sensitivity
A0 = 50/50/50/100mA

V_{DRM} / V_{RRM}
800 = 800V
12 = 1200V
16 = 1600V

Package type
ZI = TO-3P(Ins)

Ratings and Characteristics Curves

Fig.1 - RMS on-state current versus case temperature

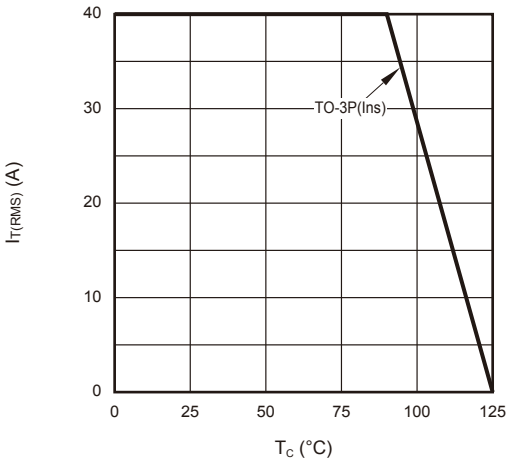


Fig.2 - Surge peak on-state current versus number of cycles

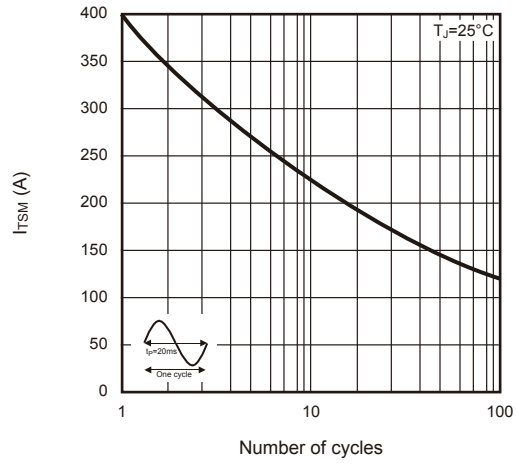


Fig.3 - On-state characteristics (maximum values)

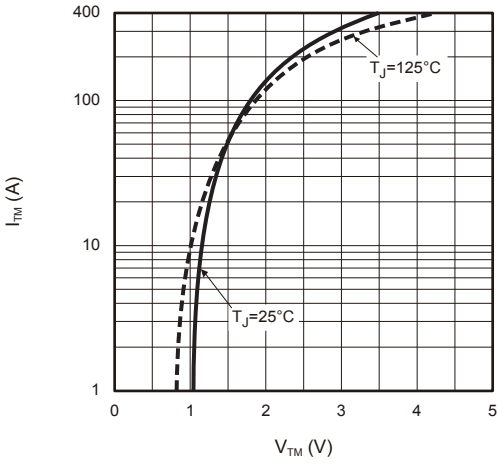


Fig.4 - Maximum power dissipation versus RMS on-state current

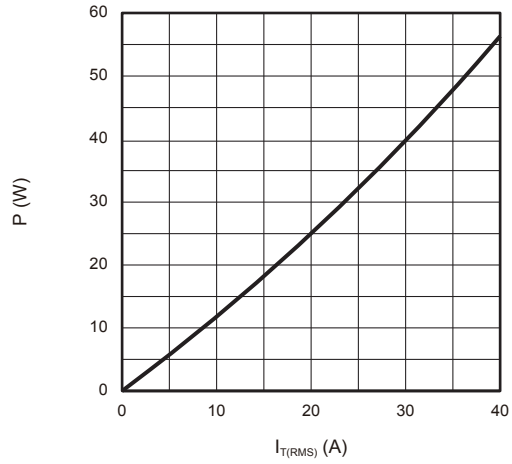
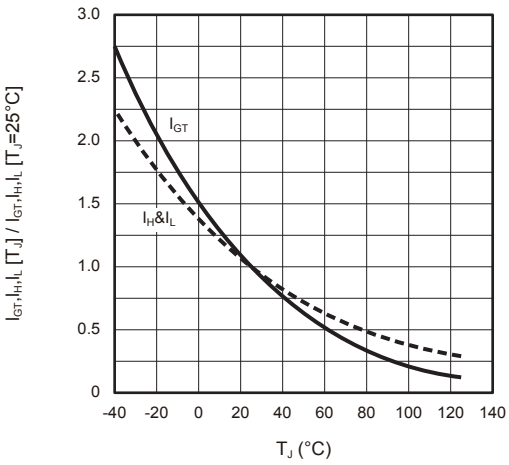
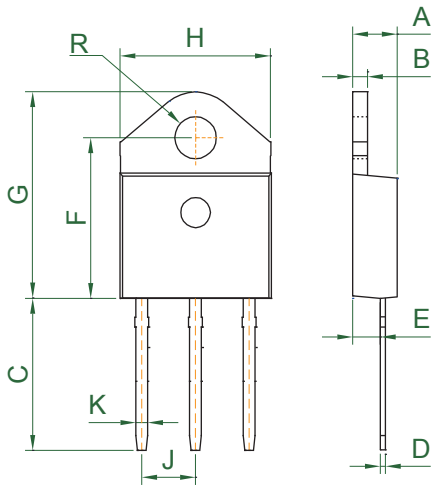


Fig.5 - Relative variations of gate trigger current, holding current and latching current versus junction temperature



Package Outline Dimensions

TO-3P(Ins)



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4	-	4.6	.173	-	.181
B	1.4	-	1.6	.055	-	.063
C	14.35	-	15.88	.565	-	.625
D	0.5	-	0.7	.020	-	.028
E	2.7	-	2.9	.106	-	.114
F	15.8	-	16.5	.622	-	.650
G	20.27	-	21.1	.798	-	.831
H	15.1	-	15.5	.594	-	.610
J	5.35	-	5.65	.211	-	.222
K	1.1	-	1.5	.043	-	.059
R	4.08	-	4.25	.160	-	.167