

## 40A TRIACs

### Features

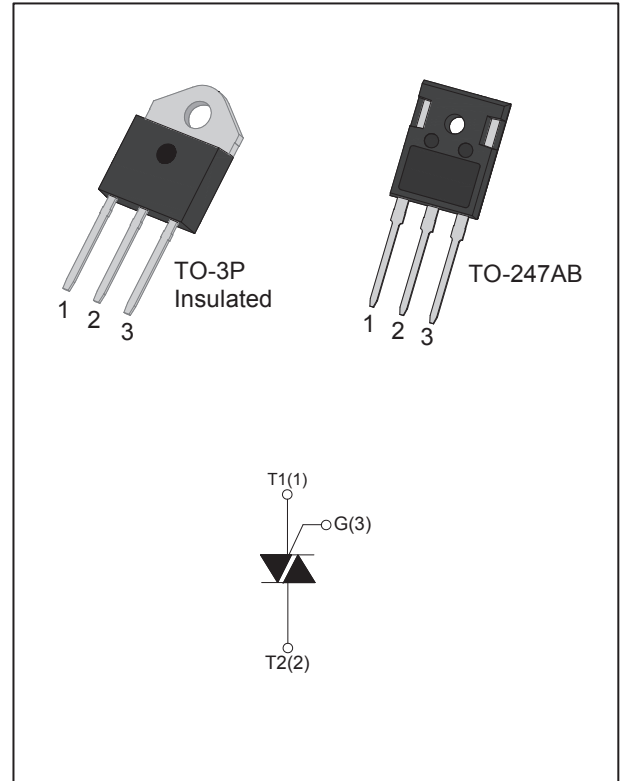
- Glass passivated chip junction
- High voltage and surge capability
- Low thermal resistance and durability
- Triggering in three quadrants
- Pb-free
- RoHS compliant

### 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 150	°C
Repetitive peak off-state voltage ( $T_J = 25^\circ\text{C}$ )	$V_{DRM}$	800 / 1200 / 1600	V
Repetitive peak reverse voltage ( $T_J = 25^\circ\text{C}$ )	$V_{RRM}$	800 / 1200 / 1600	V
RMS on-state current	TO-3P(Ins) ( $T_C=80^\circ\text{C}$ )	40	A
	TO-247AB ( $T_C=90^\circ\text{C}$ )		
Non repetitive surge peak on-state current ( $180^\circ$ conduction angle, $F = 50\text{Hz}$ , $t_P = 20\text{ms}$ , full cycle)	$I_{TSM}$	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 ( $I_G = 2 \times I_{GT}$ , $t_r \leq 100\text{ns}$ )	$di/dt$	50	$\text{A}/\mu\text{s}$
Peak gate current	$I_{GM}$	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W

## Electrical Characteristics ( $T_J = 25^\circ\text{C}$ unless otherwise specified)

Logic Level & Snubberless (3 Quadrants)

Symbol	Test Condition	Quadrant		Value	Unit
$I_{GT}$	$V_D = 12\text{V}, R_L = 100\Omega$	I - II - III	MAX	50	mA
$V_{GT}$	$V_D = 12\text{V}, R_L = 100\Omega$	I - II - III	MAX	1.3	V
$V_{GD}$	$V_D = V_{DRM}, T_J = 125^\circ\text{C}$	I - II - III	MIN	0.2	V
$I_L$	$I_G = 1.2 \times I_{GT}$	I - III	MAX	80	mA
		II		100	
$I_H$	$V_{AK} = 12\text{V}, I_{GK} = 100\text{mA}$		MAX	60	mA
dV/dt	$V_D = 67\% V_{DRM}$ , Gate open, $T_J = 125^\circ\text{C}$		MIN	1500	V/ $\mu\text{s}$

## Static Characteristics

Symbol	Test Condition			Value	Unit
$V_{TM}$	$I_{TM} = 60\text{A}, t_p = 380\mu\text{s}$	$T_J = 25^\circ\text{C}$	MAX	1.55	V
$I_{DRM}$ $I_{RRM}$	$V_D = V_{DRM}, V_R = V_{RRM}$	$T_J = 25^\circ\text{C}$	MAX	10	$\mu\text{A}$
		$T_J = 125^\circ\text{C}$		5	mA

## Thermal Resistances

Symbol	Parameter		Value	Unit
$R_{\theta JC}$	Junction to case(AC)	TO-3P(Ins)	0.8	$^\circ\text{C/W}$
		TO-247AB	0.9	

## Ordering Information

Ordering Type	Marking	Package	Quantity	Delivery Mode
T40xx-yyZI	T40xx-yyZI	TO-3P(Ins)	30	Tube
T40xx-yyP	T40xx-yyP	TO-247AB	30	Tube

Note : xx = sensitivity, yy = voltage

## Ordering Information Scheme

**T 40 50 - 800 ZI**

**Triac series**

T = 3 Quadrants

**$I_{T(RMS)}$**

40 = 40A

**$I_{GT}$  Sensitivity**

50 = 50/50/50mA

**$V_{DRM} / V_{RRM}$**

800 = 800V

12 = 1200V

16 = 1600V

**Package type**

ZI = TO-3P(Ins)

P = TO-247AB

## Ratings and Characteristics Curves

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

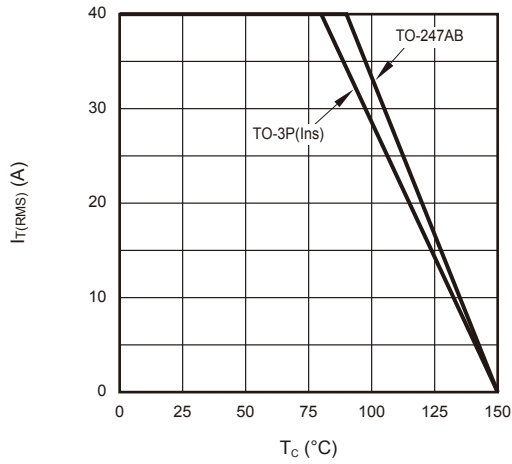


Fig.2 - Surge peak on-state current versus number of cycles

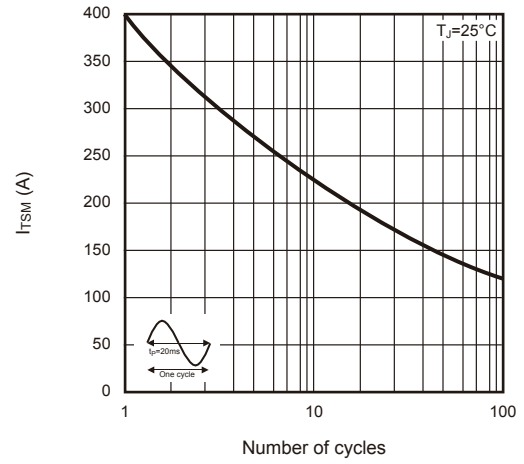


Fig.3 - On-state characteristics (maximum values)

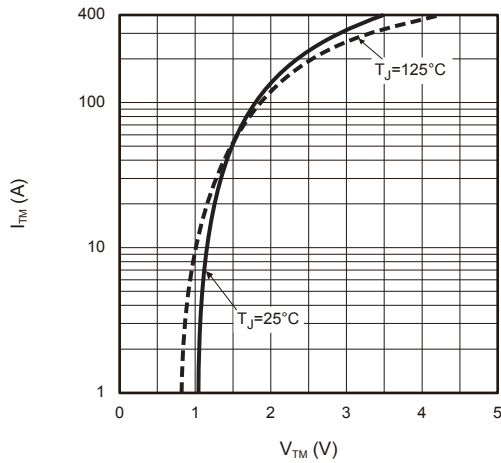


Fig.4 - Maximum power dissipation versus RMS on-state current

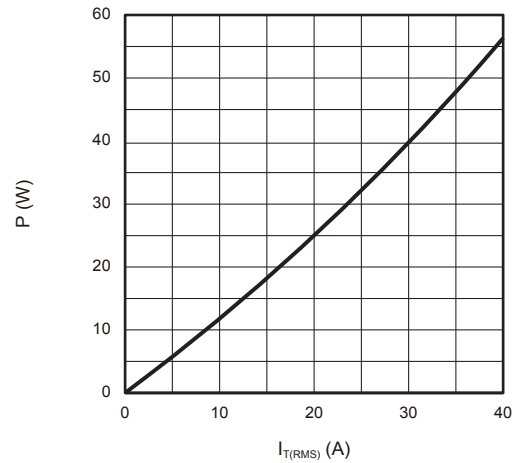
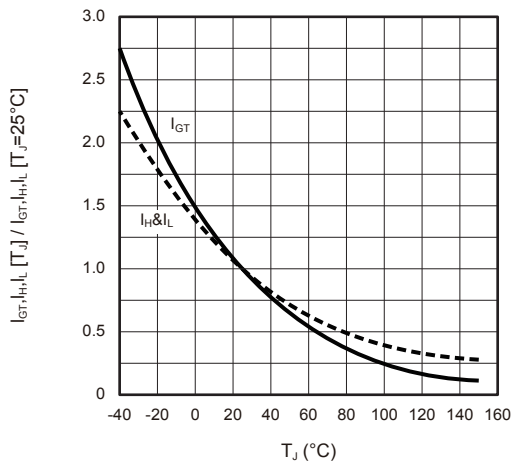
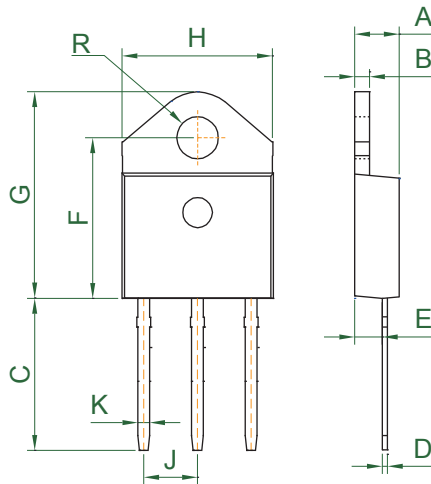


Fig.5 - Relative variations of gate trigger current, holding current and latching current versus junction temperature



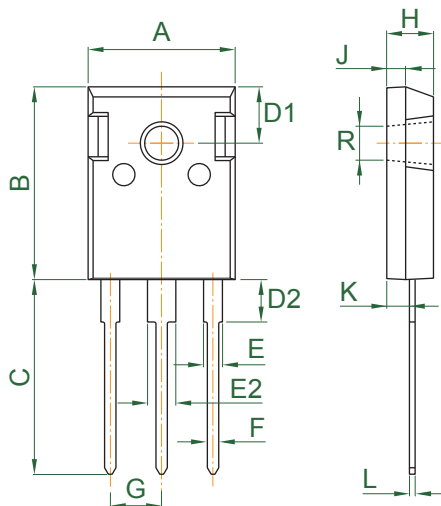
## Package Outline Dimensions

### 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

### TO-247AB



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.3	-	16.1	.602	-	.634
B	20.25	-	21.5	.797	-	.846
C	19.0	-	21.0	.748	-	.827
D1	5.7	-	6.5	.224	-	.256
D2	3.0	-	5.0	.118	-	.197
E	1.7	-	2.3	.067	-	.091
E2	2.8	-	3.3	.110	-	.130
F	0.9	-	1.5	.035	-	.059
G	5.0	-	6.0	.197	-	.236
H	4.7	-	5.3	.185	-	.209
J	1.8	-	2.2	.071	-	.087
K	2.2	-	2.6	.087	-	.102
L	0.4	-	0.9	.016	-	.035
R	2.95	-	3.55	.116	-	.140