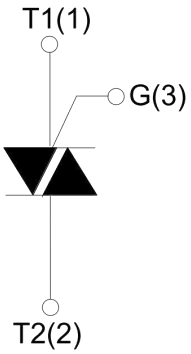
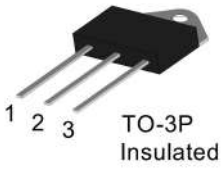
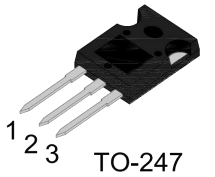
T41 40A TRIACs

FEATURES

Glass Passivated Junctions
High voltage and surge capability
Low Thermal Resistance and Durability
Triggering in three quadrants







APPLICATIONS

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

Parameters Summary

VD/VR:800/1200/1600V
IT(RMS) : 40A
IGT : 35mA

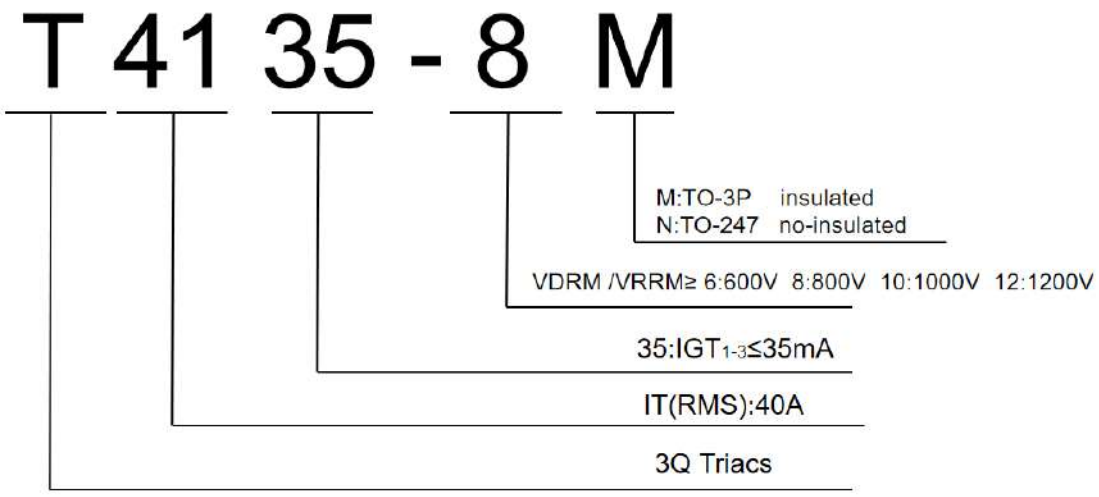
ABSOLUTE MAXIMUM RATINGS				
Parameter		**Symbol**	**Value**	**Unit**
Storage junctiontemperature range		Tstg	-40~150	℃
Operating junction temperature range		Tj	-40~150	℃
Repetitive peak off-state voltage (T =25℃)		V_{DRM}	800/12001600	V
Repetitive peak reverse voltage (T =25℃)		V_{RRM}	800/1200/1600	V
RMS on-state current	TO-3P(TC=80℃)	$I_{T(RMS)}$	40	A
	TO-247(TC=90℃)			
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^2S
Critical rate of rise of on-state current($I = 2 \times I_{GT}$)		di/dt	50	A/μS
Peak gate current		I_{GM}	4	A
Peakgate power dissipation		P_{GM}	10	W
Average gate power dissipation		$P_{G(AV)}$	1	W

Thermal Resistances				
Symbol	**Parameter**		**Value**	**Unit**
Rth(j-c)	Junction to case (DC)	TO-3P	0.8	℃/W
		TO-247	0.9	

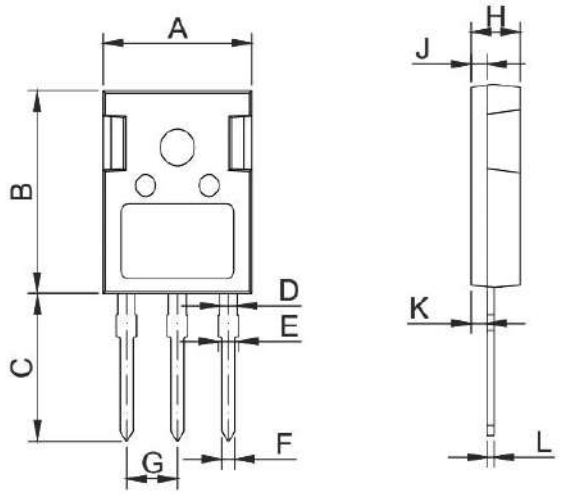
ELECTRICAL CHARACTERISTICS (T=25℃unless otherwise specified)					
Symbol	**Test Condition**	**Quadrant**		**Value**	**Unit**
I_{GT}	V_D=12V, I_T=0. 1A, Tj=25 ℃	I II III	MAX.	35	mA
V_{GT}		I II III	MAX.	1. 3	V
V_{GD}	V_D=V_{DRM}Tj=125℃	I II III	MIN.	0. 2	V
I_L	I_G=1.2I_{GT}	I-III	MAX.	80	mA
		II		100	
I_H	IT=500mA		MAX.	60	mA
dV/dt	VD=2/3VDRMGate Open Tj=125℃		MIN.	1500	V/μs

STATIC CHARACTERISTICS				
Symbol	**Parameter**		**Value(MAX.)**	**Unit**
V_{TM}	I_{TM}=60A tp=380μs	Tj =25℃	1.55	V
I_{DRM}	V_D=$V_{DRM}$$V_R$=$V_{RRM}$	Tj =25℃	10	μA
I_{RRM}		Tj =125℃	5	mA

Ordering Information Scheme



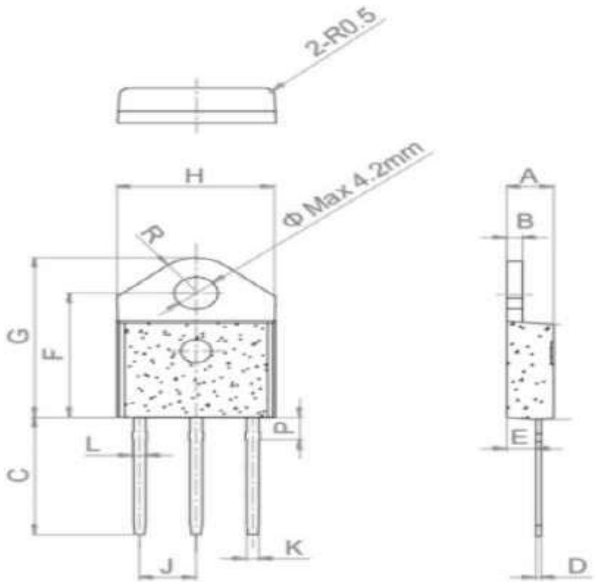
TO-247 Package Mechanical Data



TO-247

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.50	15.80	16.10	0.610	0.622	0.634
B	20.80	21.00	22.20	0.819	0.828	0.874
C	19.70	20.00	20.30	0.776	0.787	0.799
D	1.80	2.00	2.20	0.071	0.079	0.087
E	1.90	2.10	2.30	0.075	0.083	0.091
F	1.00	1.20	1.40	0.039	0.047	0.055
G		5.44			0.214	
H	4.80	5.00	5.20	0.189	0.197	0.205
J	1.90	2.00	2.10	0.075	0.079	0.083
K	2.20	2.35	2.50	0.087	0.093	0.098
L	0.41	0.60	0.79	0.016	0.024	0.031

TO-3P PackageMechanicalData



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.40		1.60	0.055		0.062
C	15.48		15.88	0.609		0.625
D	0.50		0.70	0.019		0.027
E	2.70		2.90	0.106		0.114
F	15.92		16.32	0.626		0.642
G	20.27		20.67	0.798		0.813
H	15.15		15.35	0.590		0.604
J		5.45			0.214	0.216
K	1.10		1.30	0.043		0.051
L	1.15		1.35	0.045		0.053
P	2.68		3.08	0.105		0.121
R		4.20			0.165	

FIG.1 Maximum power dissipation versus on-state current

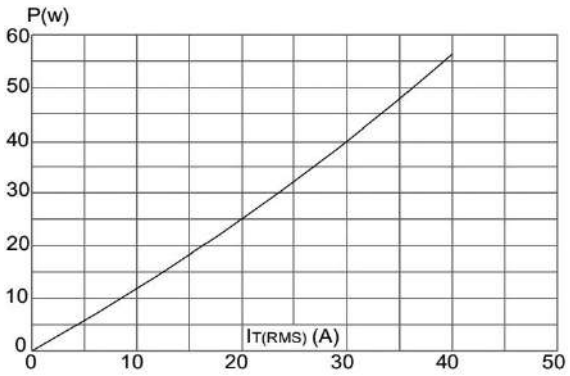


FIG.2: on-state current versus case temperature

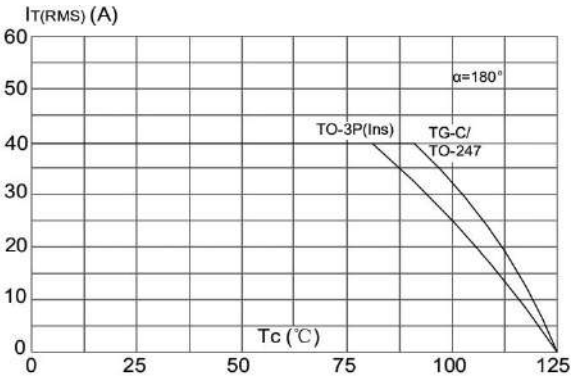


FIG.3: Surge peak on-state current versus number of cycles

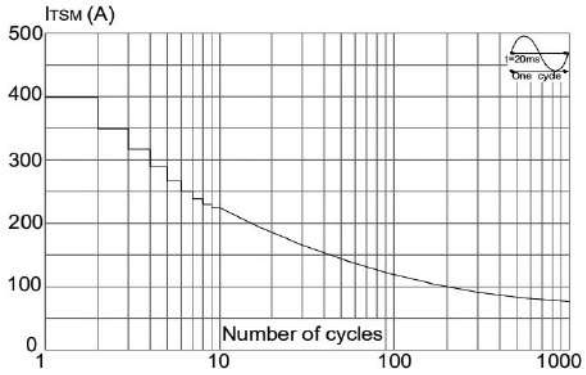


FIG.4: On-state characteristics (maximum values)

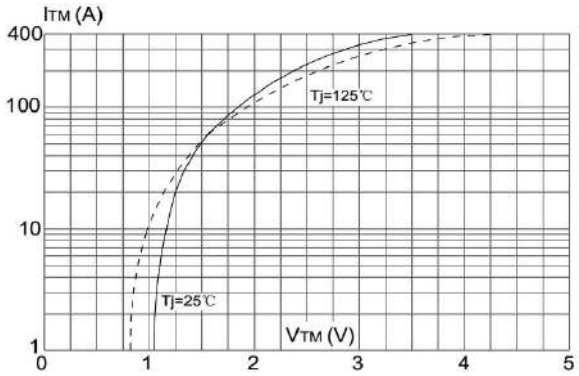


FIG.5: Non-repetitive surge peak on-state currentfor a sinusoidal pulse with width tp<10ms, and corresponding value of I2 t (dI/dt < 50A/µs)

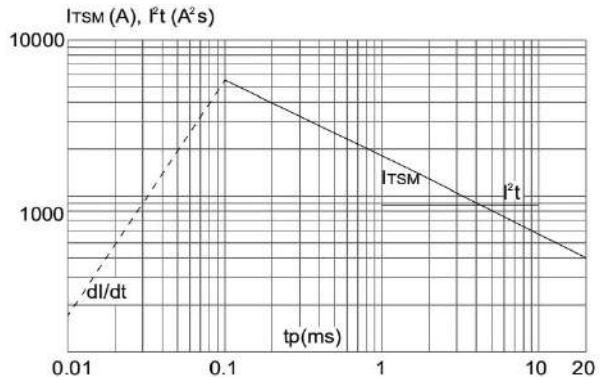


FIG.6: Relative variations of gate trigger current holding current and latching current versus junction temperature