

T40xxxKS

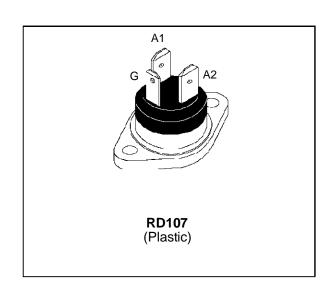
STANDARD TRIACS

FEATURES

- I_{T(RMS)} = 40A
- $V_{DRM} = 400 \text{V to } 800 \text{V}$
- INSULATING VOLTAGE 2500V_(RMS) (UL RECOGNIZED : E81734)



The T40xxxKS series triacs uses a high performance MESA GLASS technology. These parts are intended for general purpose switching and phase control applications.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit	
I _{T(RMS)}	RMS on-state current (360° conduction angle)	Tc= 75 °C	40	А
I _{TSM}	Non repetitive surge peak on-state current $(T_j \text{ initial} = 25^{\circ}\text{C})$		330	Α
			300	
l ² t	I^2 t Value for fusing $tp = 10 \text{ ms}$		450	A ² s
dl/dt	Critical rate of rise of on-state current $I_G = 500 \text{ mA}$ $di_G/dt = 1 \text{ A/}\mu\text{s}$. Repetitive $F = 50 \text{ Hz}$		10	A/μs
	Non Repetitive		50	
T _{stg} T _j	Storage and operating junction temperature	- 40, +150 - 40, +125	°C	
TI	Maximum lead temperature for soldering duri	260	°C	

Symbol	Parameter		Unit			
		D	М	S	Ν	
VDRM VRRM	Repetitive peak off-state voltage $T_j = 125^{\circ}C$	400	600	700	800	٧

January 1995 1/5

T40xxxKS

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
Rth(j-c)	Junction to case for D.C	1.2	°C/W
Rth(j-c)	Junction to case for A.C 360° conduction angle (F=50Hz)	0.9	°C/W

GATE CHARACTERISTICS (maximum values)

 $P_{G~(AV)}\!\!=1~W~~P_{GM}=10~W~(tp=20~\mu s)~~I_{GM}=4~A~(tp=20~\mu s)$

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Quadrant		Sensitivity		Unit
Syllibol	rest Conditions	Quadrant		12	13		
I _{GT}	$V_D=12V$ (DC) $R_L=33\Omega$	Tj= 25°C	1-11-111	MAX	50	50	mA
			IV	MAX	50	75	
V_{GT}	$V_D=12V$ (DC) $R_L=33\Omega$	Tj= 25°C	I-II-III-IV	MAX	1.5		V
V_{GD}	$V_D=V_{DRM}$ $R_L=3.3k\Omega$	Tj= 125°C	I-II-III-IV	MIN	0.2		V
tgt	$\begin{array}{ll} V_D {=} V_{DRM} & I_G = 500 mA \\ I_T = 56A \\ dI_G {/} dt = 3A {/} \mu s \end{array}$	Tj= 25°C	I-II-III-IV	TYP	2		μs
I _H *	I _T = 250 mA Gate open	Tj= 25°C		MAX	50	75	mA
IL	I _G = 1.2 I _{GT}	Tj= 25°C	I-III-IV	TYP	50	75	mA
			II	TYP	100	150	
V _{TM} *	I _{TM} = 56A tp= 380μs	Tj= 25°C		MAX	1.7		V
I _{DRM}	1			MAX	10		μΑ
I _{RRM}	$V_R = V_{RRM}$	Tj= 125°C		MAX	3		mA
dV/dt*	VD=67%V _{DRM} Gate open	Tj= 125°C		MIN	500		V/μs
(dV/dt)c*	(dl/dt)c = 18 A/ms	Tj= 125°C		MIN	5		V/μs

^{*} For either polarity of electrode A₂ voltage with reference to electrode A₁

ORDERING INFORMATION

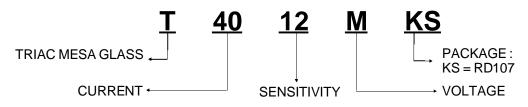


Fig.1: Maximum RMS power dissipation versus RMS on-state current.

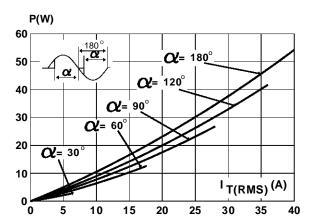


Fig.3: RMS on-state current versus case temperature.

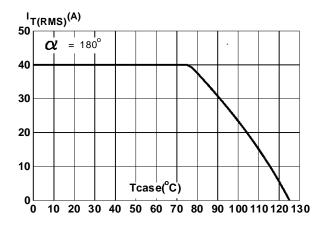


Fig.5: Relative variation of gate trigger current and holding current versus junction temperature.

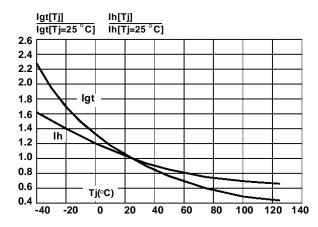


Fig.2: Correlation between maximum RMS power dissipation and maximum allowable temperature (Tamb and Tcase) for different thermal resistances heatsink + contact.

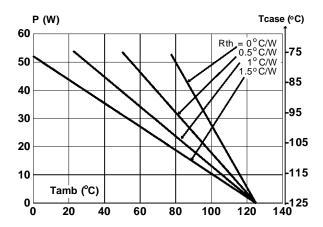


Fig.4: Relative variation of thermal impedance junction to case versus pulse duration.

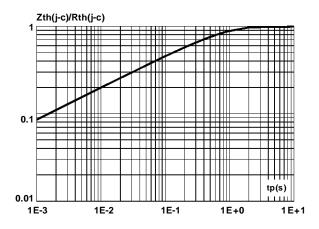
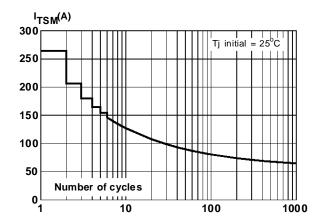


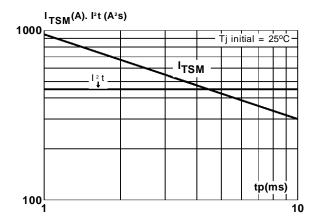
Fig.6: Non repetitive surge peak on-state current versus number of cycles.

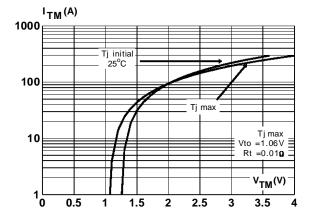


T40xxxKS

Fig.7: Non repetitive surge peak on-state current for a sinusoidal pulse with width : $tp \le 10ms$, and corresponding value of I^2t .

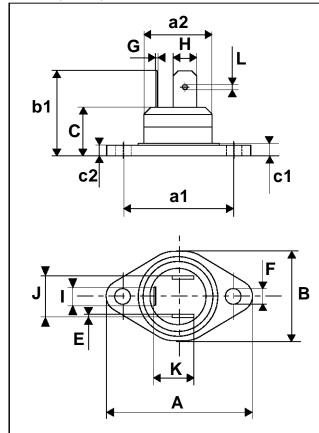
Fig.8: On-state characteristics (maximum values).





PACKAGE MECHANICAL DATA

RD107 (Plastic)



	DIMENSIONS						
REF.	Millimeters			Inches			
	Тур.	Min.	Max.	Тур.	Min.	Max.	
Α			40.0			1.575	
a1		29.9	30.3		1.177	1.193	
a2			22.0			0.867	
В			27.0			1.063	
b1			24.0			0.945	
С			14.0			0.552	
c1			3.5			0.138	
c2		1.95	3.0		0.767	0.118	
E		0.75	0.85		0.029	0.033	
F		4.0	4.5		0.157	0.177	
G		0.45	0.55		0.018	0.022	
Н		6.2	6.3		0.244	0.248	
I		4.7	4.8		0.185	0.189	
J		9.5	11.7		0.374	0.461	
K	11.35			0.446			
L		1.4	1.6		0.551	0.630	

Marking: type number Weight: 20 g

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsability for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1995 SGS-THOMSON Microelectronics - All rights reserved.

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.

