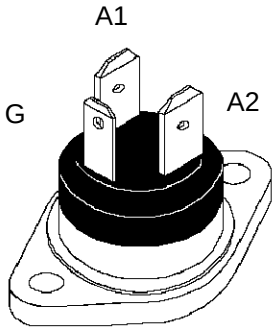
SGS-THOMSON MICROELECTRONICS

T2514xKS
T2516xKS

SNUBBERLESS TRIACS

FEATURES

- $I_{T(RMS)}$ = 25A
- HIGH COMMUTATION :
  (dI/dt)c ≥ 12A/ms T2514xKS
  ≥ 22A/ms T2516xKS
- INSULATING VOLTAGE = 2500$V_{(RMS)}$
  (UL RECOGNIZED : E81734)



RD107
(Plastic)

DESCRIPTION

The T2514/T2516xKS series of isolated triacs uses a high performances MESA GLASS technology.
The SNUBBERLESS™ concept offer suppression of RC nerwork and it is suitable for application such as phase control and static switching on inductive or resistive load.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state current (360° conduction angle)	Tc = 85°C	25	A
I_{TSM}	Non repetitive surge peak on-state current (Tj initial = 25°C)	tp = 8.3ms	260	A
		tp = 10ms	250	
I^2t	I^2t vakue for fusing	tp = 10ms	312	A^2s
dI/dt	Critical rate of rise of on-state current IG = 500mA dIG/dt = 1A/µs	Repetitive F = 50Hz	20	A/µs
		Non repetitive	100	
T_{stg} T_j	Storage and operating junction temperature range		- 40 + 150 - 40 + 125	°C
Tl	Maximum lead temperature for soldering during 10s		260	°C

Symbol	Parameter	Voltage				Unit
		D	M	S	N	
V_{DRM} V_{RRM}	Repetitive peak off-state voltage T_j = 125°C	400	600	700	800	V

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
Rth(j-c)	Junction to case for D.C	1.7	°C/W
Rth(j-c)	Junction to case for A.C 360° conduction angle (F=50Hz)	1.3	°C/W

GATE CHARACTERISTICS (maximum values)

$P_{G\ (AV)}$= 1 W P_{GM} = 10 W (tp = 20 µs) I_{GM} = 4 A (tp = 20 µs)

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Quadrant		Sensitivity		Unit
					14	16	
I_{GT}	V_D=12V (DC) R_L=33Ω	Tj= 25°C	I-II-III	MIN	2		mA
				MAX	35	50	
V_{GT}	V_D=12V (DC) R_L=33Ω	Tj= 25°C	I-II-III	MAX	1.5		V
V_{GD}	V_D=V_{DRM} R_L=3.3kΩ	Tj= 125°C	I-II-III	MIN	0.2		V
tgt	V_D=V_{DRM} I_T = 35A I_G = 500mA dI_G/dt= 3Aµs	Tj= 25°C	I-II-III	TYP	2		µs
I_H *	I_T= 250mA Gate open	Tj= 25°C		MAX	35	50	mA
I_L	I_G = 1.2 I_{GT}	Tj = 25°C	I-III	TYP	35	50	mA
			II	TYP	70	100	
V_{TM} *	I_{TM}= 35A tp= 380µs	Tj= 25°C		MAX	1.5		V
I_{DRM} I_{RRM}	V_D = V_{DRM} V_R= V_{RRM}	Tj= 25°C		MAX	10		µA
		Tj= 125°C		MAX	3		mA
dV/dt *	V_D=67%V_{DRM} Gate open	Tj= 125°C		MIN	500	750	V/µs
(dI/dt)c *	Without snubber	Tj= 125°C		MIN	12	22	A/ms
				TYP	24	44	

* For either polarity of electrode A_2 voltage with reference to electode A_1

ORDERING INFORMATION

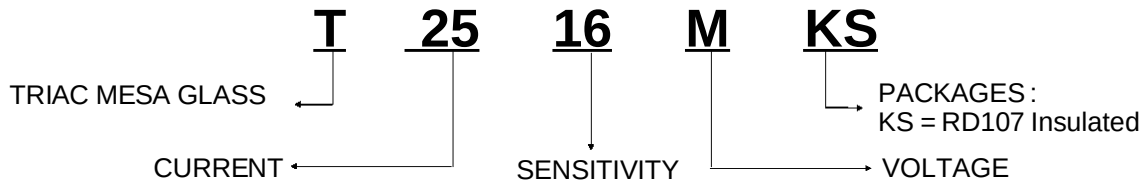


Fig.1 : Maximum RMS power dissipation versus average on-state current.

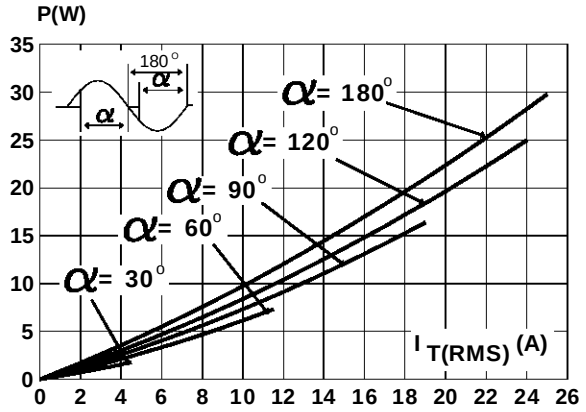


Fig.2 : Correlation between maximum RMS power dissipation and maximum allowable temperature (Tamb and Tcase) for different thermal resistances heatsink + contact).

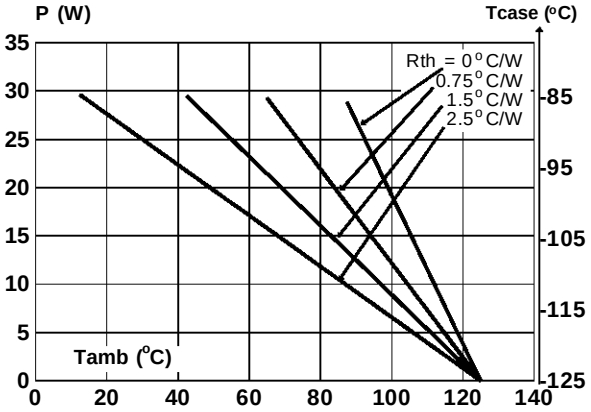


Fig.3 : RMS on-state current versus case temperature.

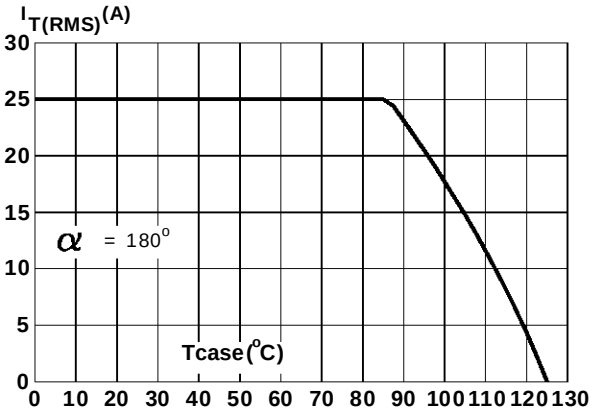


Fig.4 : Relative variation of thermal impedance junction to case versus pulse duration.

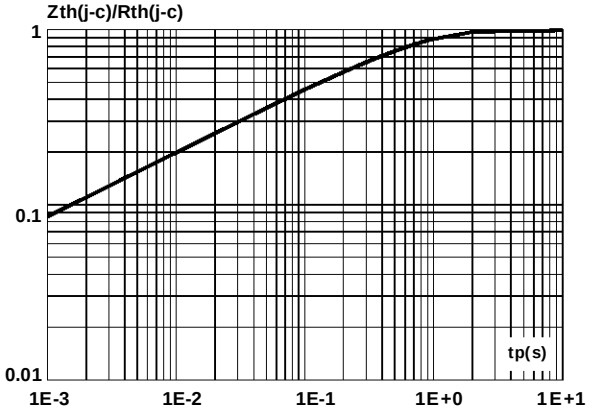


Fig.5 : Relative variation of gate trigger current and holding current versus junction temperature.

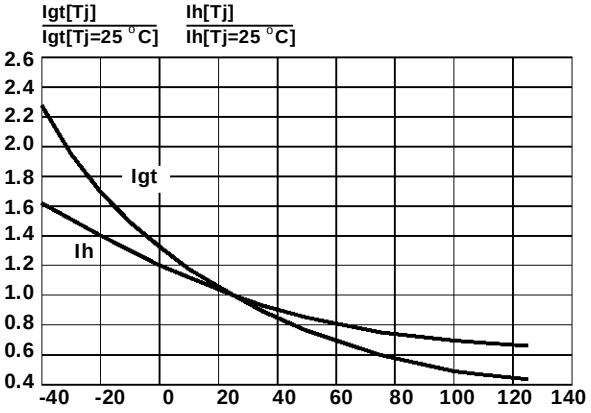


Fig.6 : Non repetitive surge peak on-state current versus number of cycles.

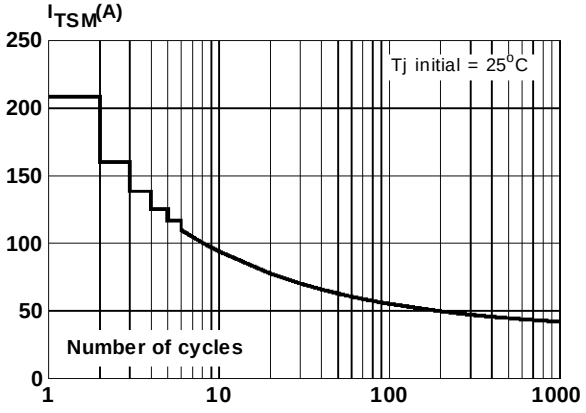


Fig.7 : Non repetitive surge peak on-state current for a sinusoidal pulse with width : tp ≤ 10ms, and corresponding value of I^2t.

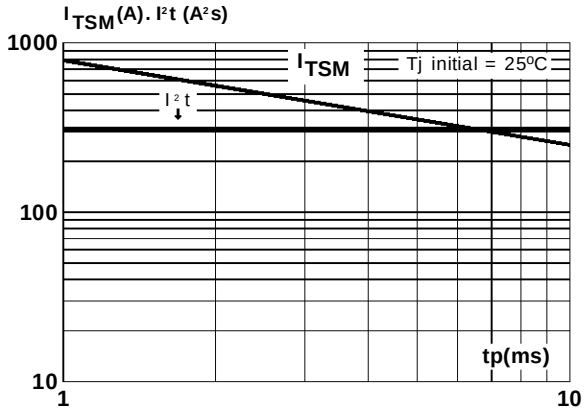
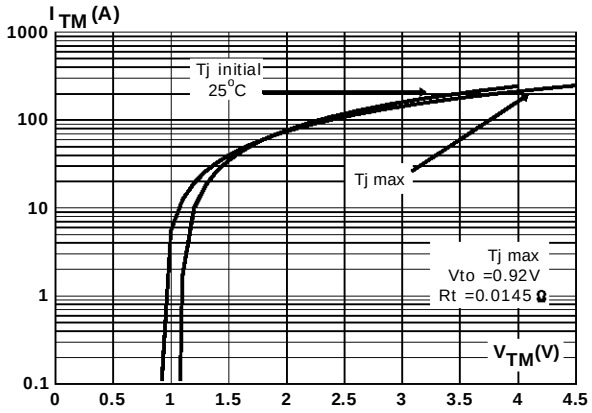
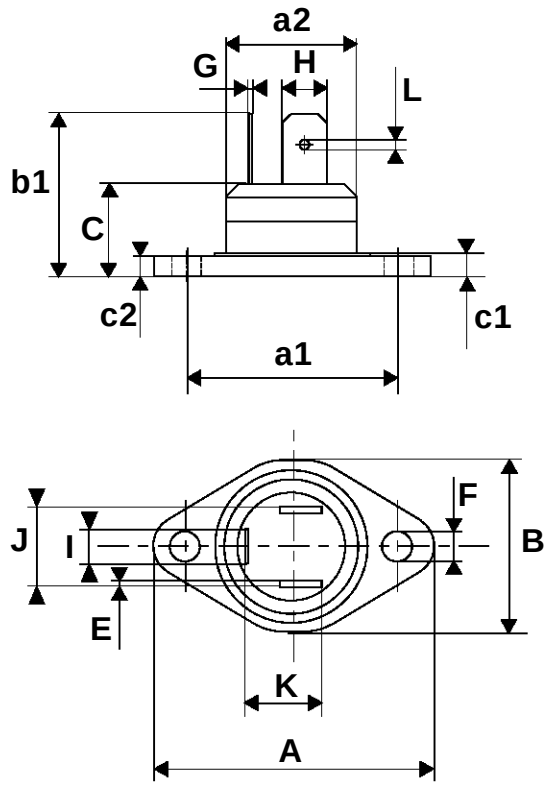


Fig.8 : On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA
RD107 (Plastic)



REF.	DIMENSIONS					
	Millimeters			Inches		
	Typ.	Min.	Max.	Typ.	Min.	Max.
A			40.0			1.575
a1		29.9	30.3		1.177	1.193
a2			22.0			0.867
B			27.0			1.063
b1			24.0			0.945
C			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
H		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 : 20g