RS40 Series 40A TRIACs

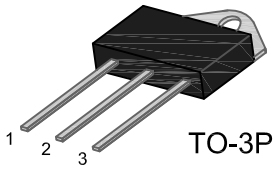
DESCRIPTION：

High current density due to double mesa technology, SIPOS and Glass Passivation.

RS40Z / RS40 series triacs is suitable for general purpose AC switching,They can be used as an ON/OFF function in applications such as static relays, heating regulation,induction motor stating circuits... or for phase contol operation, light dimmers,motor speed controllers.

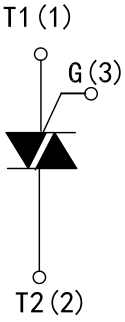
RS40Z-CW-BW Series are 3 quadrants triacs,They are specially recommended for use on inductive loads.

RS40Z series provide a 2500V RMS isolation voltage from all three terminals to extemal heat sink.



TO-3P insulated

TG-C
Insulated



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	40	A
V_{DRM}/V_{RRM}	600 / 800 / 1200 / 1600	V
V_{TM}	1.55	V

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		Tstg	-40 to +150	℃
Operrating junction temperature range		Tj	-40 to +125	℃
Repetitive Peak Off-state Voltage Tj=25℃ Repetitive Peak Reverse Voltage Tj=25℃	RS40Z06	V_{DRM} V_{RRM}	600	V
	RS40Z08		800	
	RS40Z12		1200	
	RS40Z16		1600	
Non repetitive Surge Peak Off-state Voltage	tp=10ms,Tj=25℃	V_{DSM}	V_{DRM}+100	V
Non repetitive Peak Reverse Voltage		V_{RSM}	V_{RRM}+100	
RMS on-state current (full sine wave)	TO-3P Tc=80℃	$I_{T(RMS)}$	40	A
	TG-C Tc=90℃			
Non repetitive surge peak on-state current (full cycle,Tj=25℃)	f = 60 Hz t=16.7ms	I_{TSM}	420	A
	f = 50 Hz t=20ms		400	
I^2t Value for fusing	tp=10ms	I^2t	880	A^2s
Critical rate of rise of on-state current IG=2×IGT, tr≤100 ns, f=120Hz, Tj=125℃		dI /dt	50	A/μs
Peak gate current tp=20us,Tj=125℃		I_{GM}	4	A
Peak Gate Power Dissipation tp=20us,Tj=125℃		P_{GM}	10	W
Average gate power dissipation Tj=125℃		$P_{G(AV)}$	1	W

ELECTRICAL CHARACTERISTICS(Tj=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant		Limits		Unit
				BW	B	
I_{GT}	V_D=12V R_L=33Ω	I-II-III IV	MAX.	50 -	50 100	mA
V_{GT}		I-II-III IV	MAX.	1.3 -	1.3	V
V_{GD}	V_D=V_{DRM} R_L=3.3KΩ Tj =125℃	I-II-III IV	MIN.	0.2 -	0.2	V
I_L	I_G=1.2I_{GT}	I-III IV	MAX.	80 -	70	mA
		II	MAX.	100	90	mA
I_H	I_T =100mA		MAX.	60	60	mA
dV/dt	V_D=67%V_{DRM} gate open Tj=125℃		MIN.	1000	500	V/μs
(dI/dt)c	Without snubber Tj=125℃		MIN.	20	5	A/ms

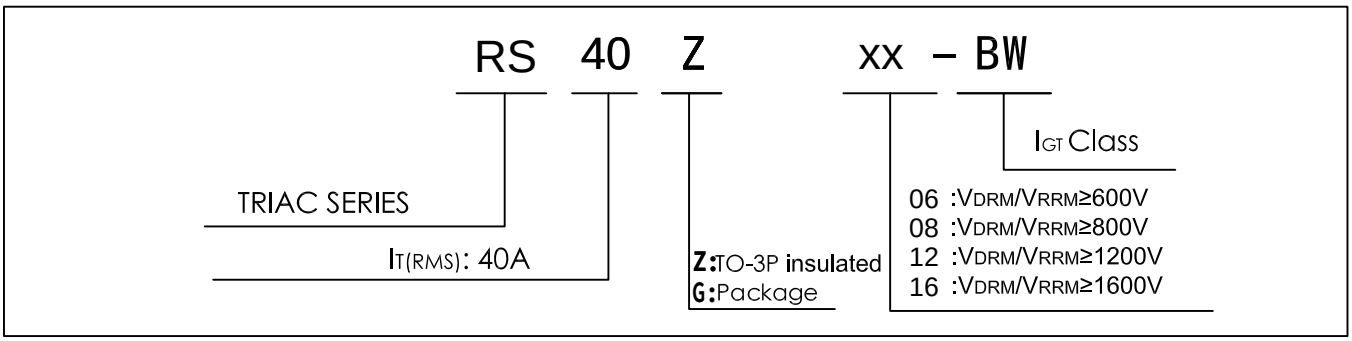
STATIC CHARACTERISTICS

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

THERMAL RESISTANCES

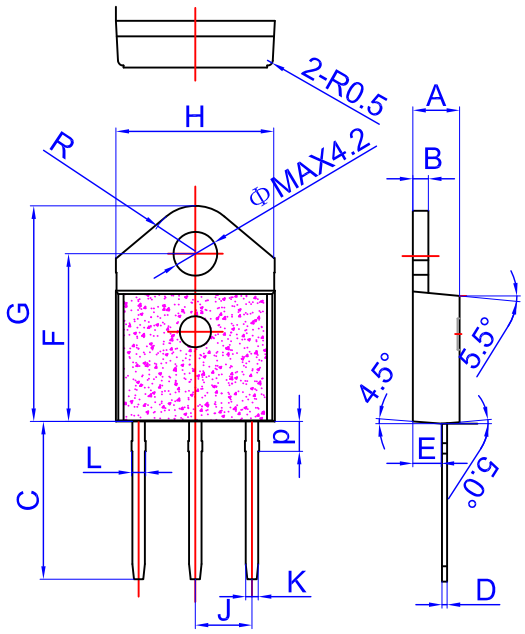
Symbol	Parameter		Value	Unit
$R_{th(J-C)}$	Junction to Case(AC)	TO-3P	0.9	℃/W
		TG-C	0.8	

ORDERING INFORMATION



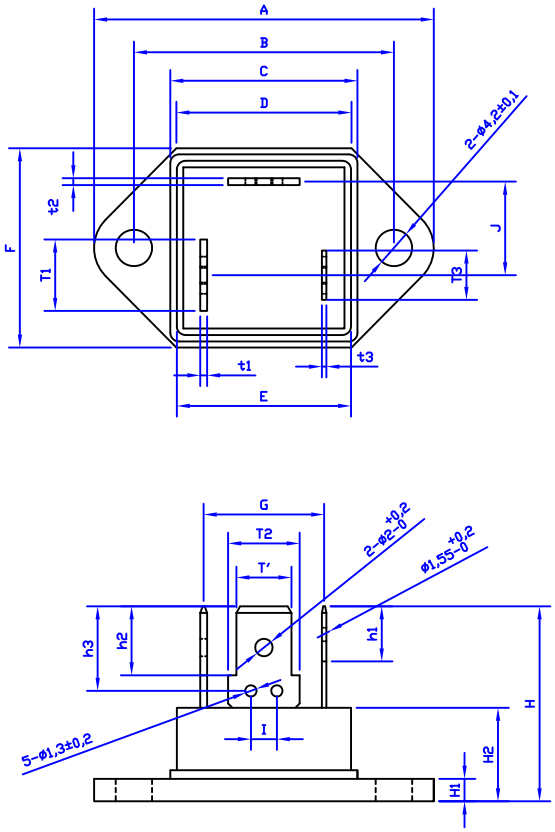
PACKAGE MECHANICAL DATA

TO-3P insulated Package



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.6	0.565		0.614
D	0.5		0.7	0.020		0.028
E	2.7		2.9	0.106		0.114
F	15.8		16.5	0.622		0.650
G	20.4		21.1	0.815		0.831
H	15.1		15.5	0.594		0.610
J	5.4		5.65	0.213		0.222
K	1.2		1.4	0.047		0.055
L	1.35		1.50	0.053		0.059
P	2.8		3.0	0.110		0.118
R		4.6			0.181	

TG-C Package



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			39.2			1.543
B	29.8	30.0	30.2	1.173	1.181	1.189
C			21.6			0.85
D			20.2			0.795
E			20.1			0.791
F			23			0.906
T1、T2		8.25			0.325	
T3		5.7			0.224	
T'		6.35			0.25	
t1、t2		0.8			0.031	
t3		0.5			0.020	
G		13.9			0.547	
H1		2.6			0.102	
H2		10.8			0.425	
H			22.5			0.886
h1	6.2	6.35	6.5	0.244	0.25	0.256
h2	7.8	7.95	8.1	0.307	0.313	0.319
h3	9.45	9.75	10.05	0.372	0.384	0.396
I	2.7	3.0	3.3	0.106	0.118	0.130
J		10.8			0.425	

FIG.1:Maximum power dissipation versus RMS on-state current(full cycle)

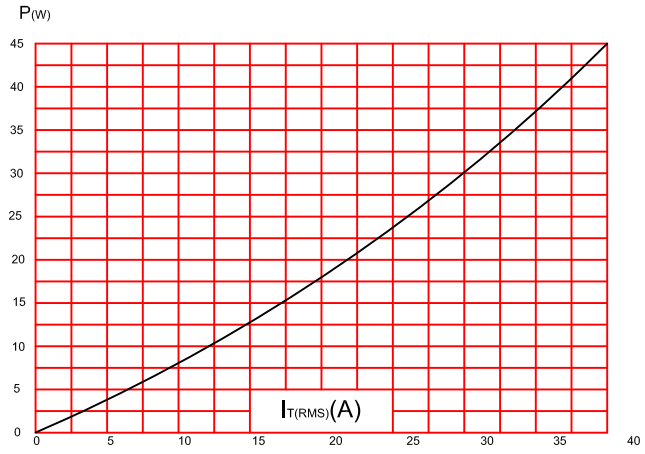


FIG.2:RMS on-state current versus case temperature(full cycle)

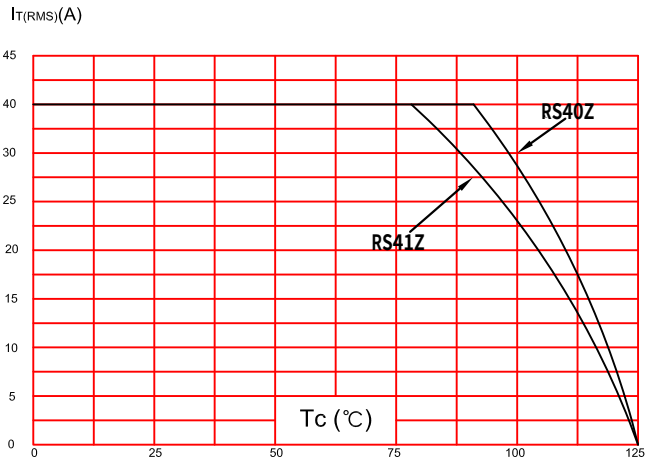


FIG.3:On-state characteristics (maximum values).

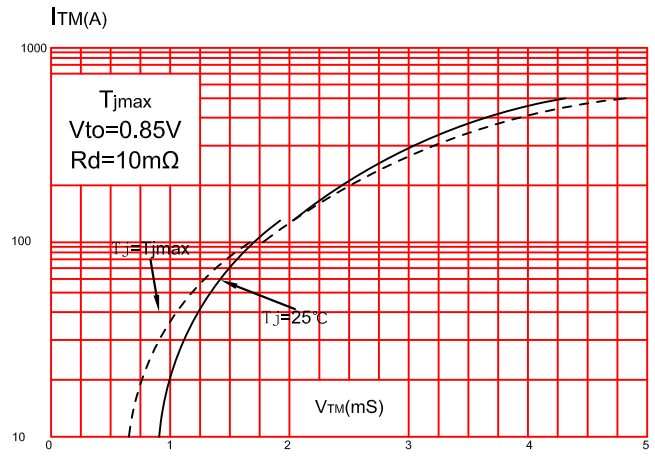


FIG.4:Surge peak on-state current versus number of cycles.

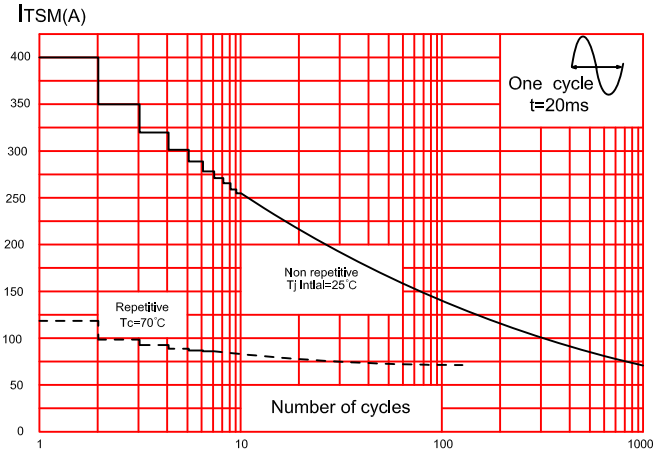


FIG.5:Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms,and corresponding value of I²t.

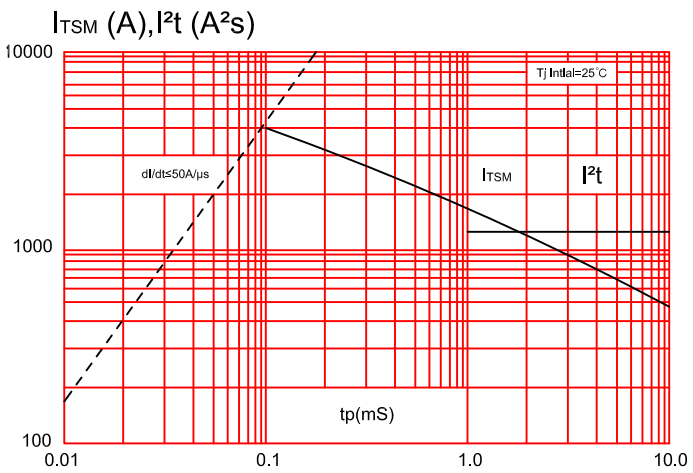
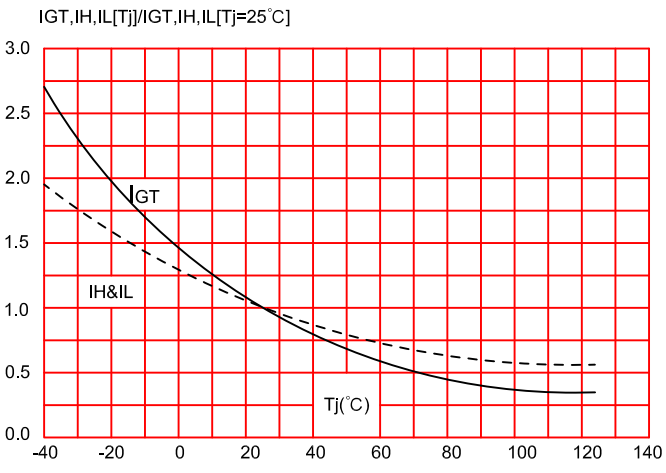


FIG.6:Relative variations of gate trigger current,holding current and latching current versus junction temperature(typical values)



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