SMC
DIODE SOLUTIONS

Technical Data
Data Sheet N2034, Rev.-

RoHS

SST41 Series   40A TRIACs

Circuit Diagram

TO-3P Insulated
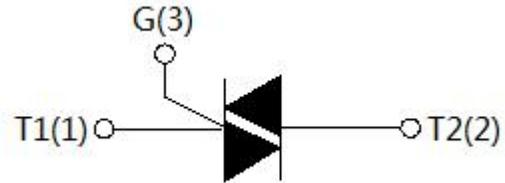
Description

With high ability to withstand the shock loading of large current, SST41 series triacs provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, 3 quadrants products especially recommended for use on inductive load. From all three terminals to external heatsink, SST41Z provides a rated insulation voltage of 2500 V$_{RMS}$.

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Storage junction temperature range	T_J	-	-40 to +125	°C
Operating junction temperature range	T_{stg}	-	-40 to +150	°C
Repetitive peak off-state voltage	V_{DRM}	-	600/800/1200/1600	V
Repetitive peak reverse voltage	V_{RRM}	-	600/800/1200/1600	V
Non repetitive peak off-state voltage	V_{DSM}	-	V_{DRM} +100	V
Non repetitive peak reverse voltage	V_{RSM}	-	V_{RRM} +100	V
RMS on-state current	$I_{(TRMS)}$	TO-3P(Ins)(T_C=80℃)	40	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	-	400	A
I²t value for fusing (tp=10ms)	I^2t	-	880	A²s
Critical rate of rise of on-state current (I_G =2×I_{GT})	dI/dt	-	50	A/us
Peak gate current	I_{GM}	-	4	A
Average gate power dissipation	P_{GM}	-	1	W
Peak gate power	$P_{G(AV)}$	-	10	W

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Electrical Characteristics(Tj=25℃ unless otherwise specified)

3 Quadrants

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	V_D =12V R_L =33Ω	I - II -III	MAX	50	mA
V_{GT}		I - II -III	MAX	1.3	V
V_{GD}	V_D =V_{DRM} T_j =125℃ R_L=3.3KΩ	I - II -III	MIN	0.2	V
I_L	I_G =1.2I_{GT}	I -III	MAX	80	mA
		II		100	
I_H	I_T =100mA		MAX	60	mA
dV/dt	V_D=2/3V_{DRM} Gate Open T_j =125℃		MIN	1500	V/µs

4 Quadrants

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	V_D =12V R_L=33Ω	I - II -III	MAX	50	mA
		IV		70	
V_{GT}		ALL	MAX	1.3	V
V_{GD}	V_D =V_{DRM} T_j =125℃, R_L =3.3KΩ	ALL	MIN	0.2	V
I_L	I_G =1.2I_{GT}	I -III-IV	MAX	90	mA
		II		100	
I_H	I_T =100mA		MAX	80	mA
dV/dt	V_D=2/3V_{DRM} Gate Open T_j=125℃		MIN	1000	V/µs

Static Characteristics

Symbol	Condition	Max.	Units
V_{TM}	I_T=60A tp=380µs,T_j=25℃	1.5	V
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}, T_j=25℃	10	uA
I_{RRM}	V_D=V_{DRM} V_R=V_{RRM}, T_j=125℃	5	mA

Thermal Resistances

Symbol	Condition		Value	Units
Rth(j-c)	Junction to case(AC)	TO-3P(Ins)	1.1	℃/W

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Ordering Information

S ST 41 Z -600 BW

SMC Diode Solutions
Triacs
$I_{T(RMS)}$:40A
Z:TO-3P(Ins)

BW:I_{GT1-3} ≤ 50mA
B:I_{GT1-3} ≤ 50mA I_{GT4} ≤ 70mA

600:V_{DRM}/V_{RRM} ≥ 600V
800:V_{DRM}/V_{RRM} ≥ 800V
1200:V_{DRM}/V_{RRM} ≥ 1200V
1600:V_{DRM}/V_{RRM} ≥ 1600V

Device	Package	Shipping
SST41Z-600B/SST41Z-800B SST41Z-600BW/SST41Z-800BW SST41Z-1200BW/SST41Z-1600BW	TO-3P	30pcs/ Tube

Marking Diagram
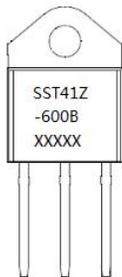
SST41Z
-600B
XXXXX

Where XXXXX is YYWWL

SST41Z-600B	= Part name
YY	= Year
WW	= Week
L	= Lot Number

Mechanical Dimensions TO-3P
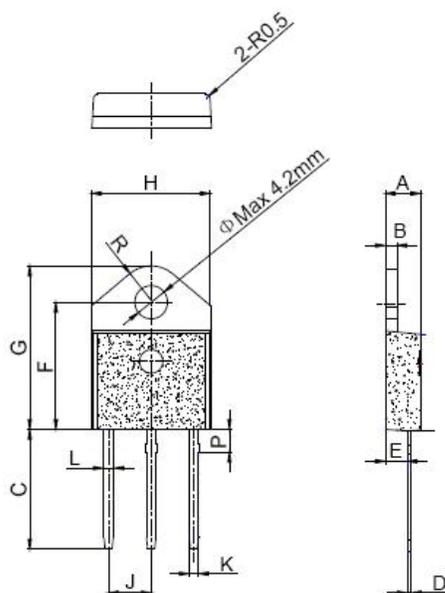
SYMBOL	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	1.45		1.55	0.057		0.061
C	14.35		15.60	0.565		0.614
D	0.50		0.70	0.020		0.028
E	2.70		2.90	0.106		0.114
F	15.80		16.50	0.622		0.650
G	20.40		21.10	0.803		0.831
H	15.10		15.50	0.594		0.610
J	5.40		5.65	0.213		0.222
K	1.10		1.40	0.043		0.055
L	1.35		1.50	0.053		0.059
P	2.80		3.00	0.110		0.118
R		4.35			0.171	

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Ratings and Characteristics Curves

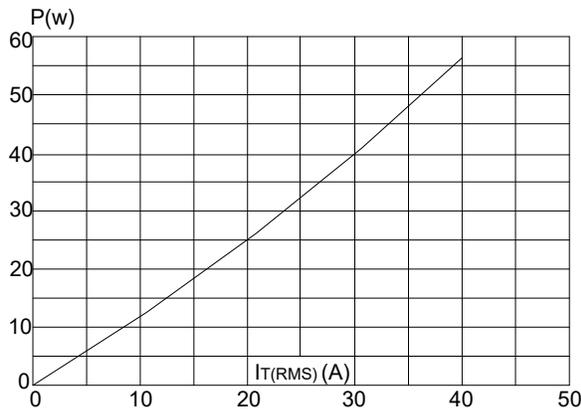**FIG.1** Maximum power dissipation versus RMS on-state current

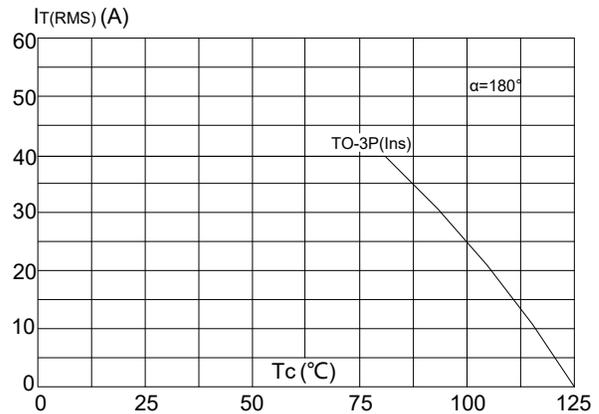**FIG.2:** RMS on-state current versus case temperature

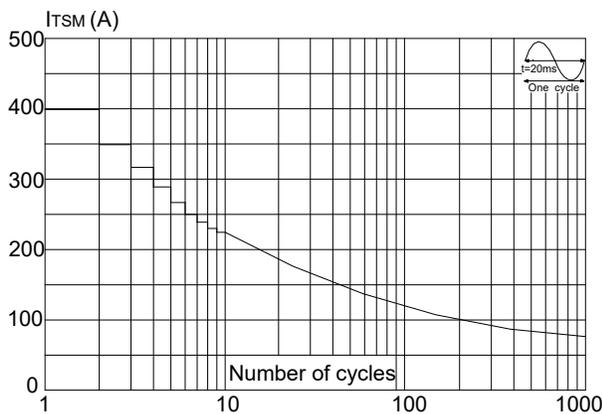**FIG.3:** Surge peak on-state current versus number of cycles

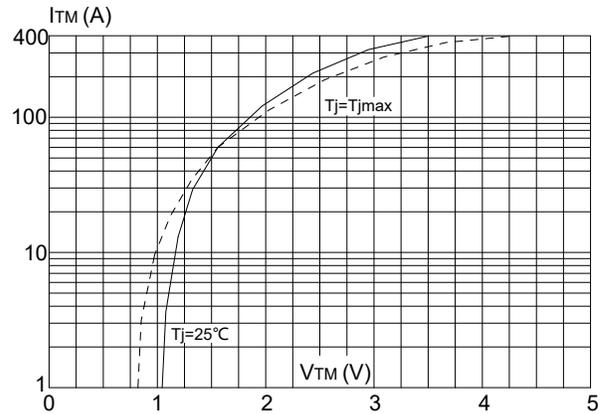**FIG.4:** On-state characteristics (maximum values)

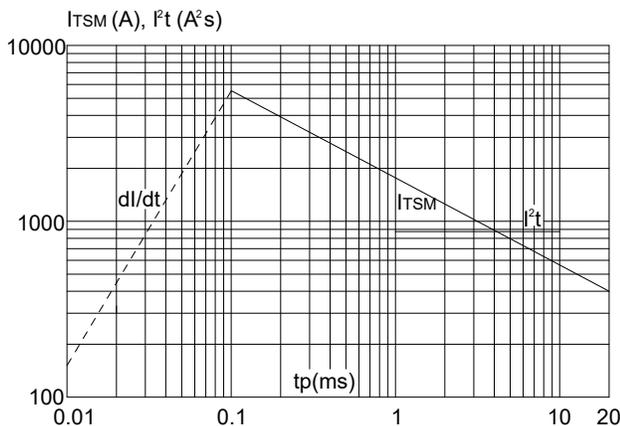**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms, and corresponging value of I²t (dI/dt < 50A/µs)
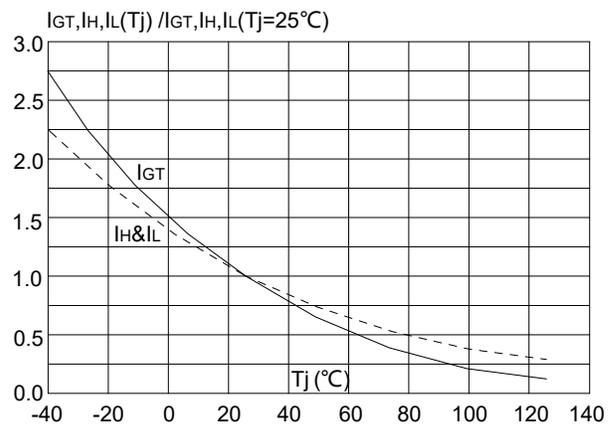
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

SST41Z-600/800B
SST41Z-600/800BW
SST41Z-1200/1600BW

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